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1990 OCRWM Bulletin Compilation and Index

March 1991

U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

OCRWM Bulletin Compilation

United States Department of Energy
Office of Civilian Radioactive Waste Management

Introduction

The *OCRWM Bulletin* is published by the Department of Energy, Office of Civilian Radioactive Waste Mangement to provide current information about the national program for managing spent fuel and high-level radioactive waste. This document is a compilation of issues from the 1990 calendar year. A table of contents and one index have been provided to assist in finding information contained in this year's *Bulletins*. The pages have been numbered consecutively at the bottom for easy reference.

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OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

January 1990

The White House Announces Bartlett Nomination for OCRWM Directors

On Wednesday, Jan. 24, 1990, the President announced his intention to nominate John Wesley Bartlett to be Director of the Office of Civilian Radioactive Waste Management at the Department of Energy in Washington, D.C. He would succeed Ben C. Rusche.

Since 1978, Dr. Bartlett has served as Manager of Nuclear Technology at the Analytic Sciences Corporation in Reading, MA. Prior to this, he served as Manager of Systems Studies in Nuclear Waste for Battelle Pacific Northwest Laboratories, 1968-1978; and he was a Presidential Exchange Executive, 1973-1974. In addition, Dr. Bartlett served as a Fulbright Professor of Nuclear Engineering at Istanbul Technical University, 1968; and as a Faculty Member at the University of Rochester, 1962-1968.

Dr. Bartlett is a graduate from the University of Rochester (B.S., 1957); and Rensselaer Polytechnic Institute (M.Ch.E., 1959; Ph.D., 1961). He was born Oct. 18, 1935, in Camden, NJ. Dr. Bartlett is married, has two children and resides in Lynnfield, MA. ☆

DOE Sues Nevada for Blocking Mandated Scientific Studies

On Jan. 25, 1990, DOE filed suit against the State of Nevada. The suit asks for a court order that would require the State to follow Federal and State laws by acting on DOE permit applications necessary to conduct the scientific study called for by Congress to determine whether Yucca Mountain, which is approximately 100 miles northwest of Las Vegas, NV, would be a suitable site for development of a nuclear waste repository.

DOE's suit, which was filed by the Department of Justice in the U.S. District Court in Nevada, contends that Nevada has prevented DOE from carrying out necessary site investigation work by unlawfully refusing to act on permit applications.

"Coopération and direct negotiations with the State of Nevada is the preferred approach to proceeding with these Congressionally mandated scientific investigations," Energy Secretary James D. Watkins said, "but the State has refused to cooperate, as has been especially evident in the two years of inaction on permit applications that normally take 75 days to process. I have no alternative but to turn to the Federal courts to break this logjam and to carry out the will of Congress."

DOE's suit follows years of State intransigence. In a 1987 amendment to the Nuclear Waste Policy Act (NWPA), Congress directed DOE to carry out a scientific geologic study of Yucca Mountain to determine the site's suitability for a nuclear waste repository. However, before DOE can conduct the necessary surface and underground studies, it must obtain permits from Nevada. DOE applied for the permits in early 1988, but State officials, who have adamantly opposed the program, refused to grant or deny the applications and returned them unprocessed to DOE in late December 1989.

In November 1989, DOE announced that if Nevada did not act on the permits, it would sue the State. Nevada responded by filing its own lawsuit, claiming that the State has the right to bar DOE from carrying out Congress' mandate, because the State legislature has "disapproved"

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NOTE TO READERS: The *OCRWM Bulletin* is available to users of INFOLINK II about one week before publication. To be placed on the mailing list, to make any address corrections, or to request multiple copies, please contact Judy Hockenberry, MA-234-2, DOE, Germantown Building, Washington, DC 20545, (301) 353-3118.

Published by the U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM)
For further information about the national program or for copies of new publications and documents listed in the *OCRWM Bulletin* contact the U.S. Department of Energy, OCRWM, Office of External Relations and Policy, Mail Stop RW-40, 1000 Independence Avenue, SW, Washington, DC 20585, (202) 586-5722. The *OCRWM Information Services Directory* is available to provide sources of program information for the States, Indian Tribes, involved parties, and the public.

DOE Sues Nevada for Blocking Mandate Scientific Studies

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the Yucca Mountain site. The State asserts that since Congress has not taken action to override the State resolutions "disapproving" the Yucca Mountain site, DOE's permit applications are "moot."

In the lawsuit it filed on Jan. 25, 1990, DOE contends that the State's claim to have "disapproved" the Yucca Mountain site is premature and without legal merit, since Yucca Mountain has not been recommended by DOE to the President, or by the President to Congress, as a site for a repository; and under the NWPA, any such State claim of disapproval of the site may only follow the recommendation to Congress.

To date, Yucca Mountain has only been designated for extensive scientific investigation — "site characterization" — to determine whether or not it can meet the strict scientific criteria for development of a repository. "Site characterization will take approximately 10 years of scientific study and evaluation by DOE scientists and review and validation by a multitude of independent scientists, including those representing the State of Nevada," Watkins said. "If the site doesn't pass the scientific muster, we won't recommend it, but let's get on with it to see if it will or will not."

Under Federal law, If Yucca Mountain does prove suitable, DOE can recommend the site to the President, and the President can recommend it to Congress. Even if Congress upholds the recommendation, DOE must obtain a license from the Nuclear Regulatory Commission to construct the planned repository. The soonest such a facility could begin operating is 2010.

"Only site characterization can produce the scientific data needed to determine whether or not the site is suitable," Watkins said. "It is unfortunate that we've been forced to resort to a lawsuit to carry out the investigation called for by Congress." ☆

Transportation Coordination Group Meeting

OCRWM is holding the next Transportation Coordination Group (TCG) meeting in Lexington, KY, Feb. 21-22, 1990. The 2-day meeting will include updates on the OCRWM and Transportation Programs, utility and Nuclear Regulatory Commission presentations, and a seminar on the design and development of spent fuel transportation casks.

The meeting will be held at the Radisson Plaza Hotel, 369 West Vine Street, Lexington, KY 40507-1636, (606) 231-9000. Hotel reservations should be made directly with the hotel by. In addition, please contact Debra Halliday (Battelle Memorial Institute) at (614) 424-3277 to indicate your attendance at the meeting, or if you have any questions regarding meeting arrangements. Questions on the meeting content or agenda should be directed to Susan Smith (Roy F. Weston, Inc.) at (202) 646-6631. ☆

DOE Opens New Yucca Mountain Information Office

The public will have the opportunity to learn details and ask questions about the Yucca Mountain Project beginning Saturday, Feb. 17, when the U.S. Department of Energy opens a new information office in Las Vegas. The office includes exhibits about the studies to be conducted at Yucca Mountain and where nuclear waste comes from; an extensive collection of printed and audio-visual material; and a resource center with publications and information relating to the repository program.

"We have a commitment to keep the public informed about our activities," said Carl Gertz, Manager of the Yucca Mountain Project. "The new office is designed so that visitors can interact with the exhibits and our staff. We think it will provide an ongoing opportunity for people to get their questions answered about the program."

The office, located in front of the Las Vegas YMCA at 4101 Meadows Lane, will be open from 10 a.m. until 6 p.m. Monday through Saturday, and from 1 p.m. to 5 p.m. on Sundays. Evening hours are available by appointment; arrangements can be made by calling the office at (702) 295-1312 during business hours. The Yucca Mountain Project already operates an information office in Beatty, NV, from 10 a.m. to 3 p.m. weekdays,and from 12 noon until 5 p.m. on weekends. ☆

State of Nevada Files Lawsuit Against DOE

On Dec. 27, 1989, the State of Nevada filed a lawsuit against DOE in the U.S. Court of Appeals for the Ninth Circuit in San Francisco, CA. Among other things, the suit asks "For an Order directing Secretary of Energy (James D.) Watkins to terminate site characterization activities at the Yucca Mountain (Nevada) site..."

In response to media inquiries, DOE issued the following statement:

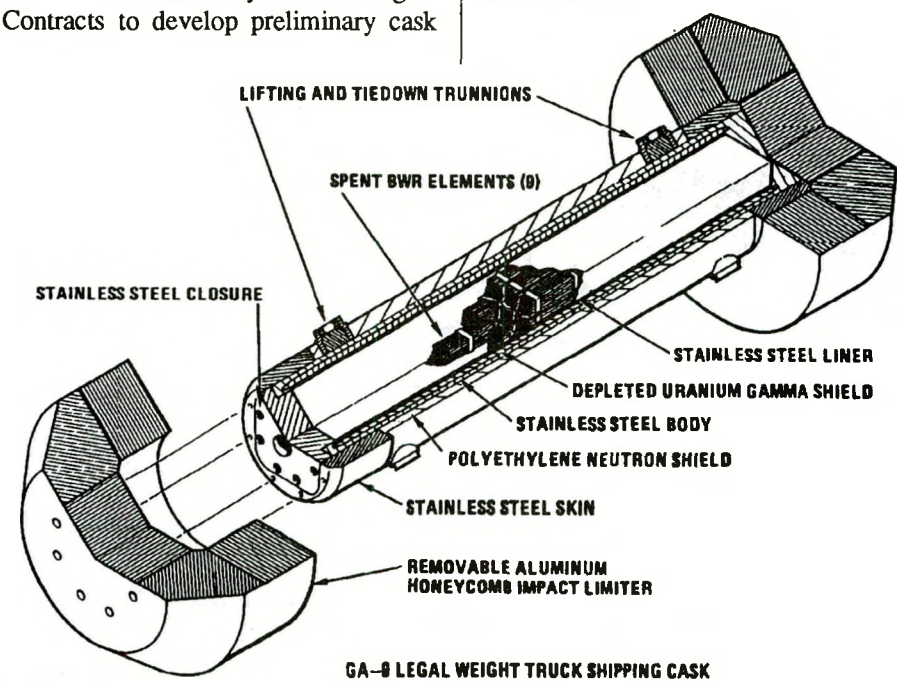
> "Actions taken by the State of Nevada, including the December 27 lawsuit, are without legal merit. DOE has been conscientiously attempting to carry out a law enacted by Congress in 1987 that requires DOE to characterize the Yucca Mountain site by conducting scientific investigations of its suitability. The State's actions have frustrated DOE from carrying out the will of Congress.
>
> "In another action, on December 26, the State of Nevada announced that it is returning unapproved permit applications filed with the State by DOE in early 1988. DOE is required by Federal law to characterize the Yucca Mountain site, but is also required by current Federal law to obtain environmental permits from the State to conduct such work." ☆

Report On OCRWM Cask Development

An integral element of the projected waste management system for the management and disposal of spent nuclear fuel and high-level radioactive waste is preparing for the transportation of the waste. Radioactive Waste OCRWM has organized the transportation element of the waste management system into four major areas: (1) cask development, (2) operational planning and support systems development, (3) economic and system analysis, and (4) institutional interactions (see article on the Transportation Coordination Group on page 3).

In the area of cask development, OCRWM is proceeding with the design and development of "from-reactor" casks for shipping waste either to a repository or a Monitored Retrievable Storage (MRS) facility. The Nuclear Regulatory Commission will certify all cask designs. Contracts to develop preliminary cask designs for two legal-weight truck casks and three rail/barge casks were awarded in 1988. The preliminary designs for all five cask contracts were submitted to the Department of Energy (DOE), and have undergone independent review. In accordance with the contracts, DOE instructed the contractors not to proceed with final design without DOE approval.

Given programmatic and budgetary considerations, OCRWM has reviewed the scope of the cask program and decided to focus its resources on the continuation of one legal-weight truck design and one rail/barge design, with fabrication of the casks expected to begin in 1996. The second rail/barge and the remaining legal-weight truck cask designs are to be funded at a lower level and will concentrate their efforts on key technical features. The third rail/barge cask design is to be cancelled.



GA-9 LEGAL WEIGHT TRUCK SHIPPING CASK

In view of the these decisions, DOE conducted an evaluation of each of the five cask design efforts. As a result of this evaluation, DOE has determined that the General Atomics legal-weight truck cask design contract will proceed as previously planned, and the Westinghouse Electric Corporation contract will be slowed down substantially. For the rail/barge cask designs, the Babcock & Wilcox design is continuing as previously planned, the Nuclear Assurance Corporation contract has been slowed down substantially, and the Nuclear Packaging, Inc. contract is cancelled.

The option to design overweight truck casks and dual-purpose rail/barge casks were included in the original plans for from-reactor cask development. Efforts for both have been deferred while evaluations are made on the level of advantage they could give the program.

Other initiatives planned for future years are the designs and development of casks suitable for shipping waste from the MRS facility, shipping nonstandard fuel and fuel-bearing components, and shipping defense high-level waste. As the from-reactor initiatives proceed, decisions will be made on future cask initiatives.

Because of such elements as the increased age of the fuel to be shipped and burnup credit (see *OCRWM Bulletin*, March 1989), the proposed cask designs promise a considerable increase in carrying capacity. To assist in resolving issues universal to all cask designs, OCRWM has a cask development technology program based at Sandia National Laboratories. ☆

Correction of Article Published in the November/December OCRWM Bulletin

An article published in the November/December 1989 *OCRWM Bulletin* (page 5) erroneously announced that a draft floodplain/wetlands assessment had been prepared, was available upon request, and written comments on the assessment were invited and should be postmarked by Feb. 15, 1990.

At the time of the *OCRWM Bulletin's* publication, DOE had made a preliminary review of the time and manner for making a draft of the floodplain/wetlands assessment available to the public. Since that time, it was determined that further development of the assessment was necessary and, therefore, that it could not be issued at this time.

Selected Events Calendar

Feb. 22	Departmental testimony on implementation of the civilian nuclear waste program before the Senate Committee on Energy and Natural Resources. Contact Ginger King, DOE, (202) 586-5722.
March 19-20	Nuclear Waste Technical Review Board: Risk and Performance Analysis Panel, Las Vegas, NV. Contact William Coons of the Board, 1111 18th Street, NW, Suite 801, Washington, DC 20036, (202) 254-4792.
Apr. 8-12	International Conference for High-Level Radioactive Waste Management, Las Vegas, NV. Contact Maureen Rafferty, American Society of Civil Engineers, 345 East 47th Street, New York, NY, (212) 705-7543, or Robert Philpott, DOE, (202) 586-5396.
Apr. 24-26	Nuclear Waste Technical Review Board: Environmental and Public Health Panel, Las Vegas, NV. Contact William Coons of the Board, 1111 18th Street, NW, Suite 801, Washington, DC 20036, (202) 254-4792.
June 10-14	American Nuclear Society Annual Meeting, Nashville, TN. Contact Donald B. Trauger, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6254, (615) 576-6730.

DOE/Nuclear Regulatory Commission Technical Exchanges*

Feb. 6-7	Calcite/Silica Deposits
March 6-7	Technical Assessment Report on Geophysical Anomaly
March 20	Technical Meeting on Interactions
Apr. 17-18	Performance Assessment Integration
May	Scenario Development (date to be determined)
June	Unsaturated Zone Testing (date to be determined)
July	Saturated Zone Testing (date to be determined)
August	Natural Resources (date to be determined)

* Most DOE/NRC Technical Exchange Meetings will be held at NRC Headquarters, White Flint, MD. For further information concerning these meetings, contact Gordon Appel, U.S. Department of Energy, OCRWM, Office of Systems Integration and Regulations, RW-331, 1000 Independence Avenue, S.W., Washington DC 20585, (202) 586-1462.

For details on DOE/NRC meetings call (1/800) 368-2235 for a recorded message. In the Washington, DC, area call 479-0487.

A telephone recording service has been established for the announcement of upcoming meetings related to the waste management program of the NRC. The number is (1/800) 368-5642, ext. 20436. Washington, DC, area residents should call 492-0436.

For information on meetings and events occuring between issues of the *OCRWM Bulletin* use OCRWM INFOLINK II, an electronic bulletin board that can be accessed through a standard computer communications capability on (615) 482-6982. The *OCRWM Bulletin* is available through INFOLINK II.

OCRWM Publications Issued in 1989

DOE/RW-0202	OCRWM Bulletin (January/February Combined)
DOE/RW-0203	OCRWM Bulletin (April)
DOE/RW-0204	OCRWM Bulletin (March)
DOE/RW-0207	Draft Environmental Program Overview
DOE/RW-0208	Environmental Monitoring and Mitigation Plan for Site Characterization
DOE/RW-0209	Revision II Environmental Regulatory Compliance Plan
DOE/RW-0210	LSS Preliminary Data Scope Analysis
DOE/RW-0211	LSS Conceptual Design
DOE/RW-0212	LSS Benefit Cost Analysis
DOE/RW-0213	LSS Preliminary Needs Analysis
DOE/RW-0218	Implementation Plan for Development of Federal Interim Storage Capabilities for Commercial Spent Fuel
DOE/RW-0219	Information Services Directory (OUT OF STOCK)
DOE/RW-0220	Final Version Dry Cask Storage Study
DOE/RW-0221	OCRWM 1988 Bulletin Compilation and Index
DOE/RW-0224	The Yucca Mountain Story
DOE/RW-0225	Quarterly Report on Program Cost and Schedule FY 1989 (1st Quarter Ending December 1988)
DOE/RW-0225-1	Quarterly Report on Program Cost and Schedule FY 1989 (1st Quarter Ending March 1989)
DOE/RW-0225-2	Quarterly Report on Program Cost and Schedule FY 1989 (1st Quarter Ending June 1989)
DOE/RW-0226	OCRWM Bulletin (May/June Combined)
DOE/RW-0227	OCRWM Bulletin (November/December Combined)
DOE/RW-0228	OCRWM Bulletin (July)
DOE/RW-0229	OCRWM Bulletin (August)
DOE/RW-0230	OCRWM Bulletin (September/October Combined)
DOE/RW-0233	Telecommunication Network Plan for the Office of Civilian Radioactive Waste Management
DOE/RW-0234	Office Automation Plan for the Office of Civilian Radioactive Waste Management
DOE/RW-0235	MRS System Study Summary Report
DOE/RW-0236	Analysis of the Total System Life-Cycle Cost for the Civilian Radioactive Waste Management Program
DOE/RW-0238	The Role of the Monitored Retrievable Storage Facility in an Integrated Waste Management System
DOE/RW-0239	The DOE Position on the MRS Facility
DOE/RW-0240	OCRWM Backgrounder: Studies of Alternative Methods of Nuclear Waste Disposal
DOE/RW-0241	OCRWM Backgrounder: Federal Agencies Involved in the Implementation of the Nuclear Waste Policy Act of 1982
DOE/RW-0242	OCRWM Backgrounder: Geographic Distribution of High-Level Nuclear Waste
DOE/RW-0243	OCRWM Publications Catalog
DOE/RW-0244	Draft Reclamation Program Plan
DOE/RW-0247	Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program
DOE/RW-0248	OCRWM Backgrounder: Executive Summary – Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program
DOE/RW-0249	OCRWM Backgrounder: Changes in the Geologic Repository Schedule
DOE/RW-0250	OCRWM Backgrounder: The Role of the Monitored Retrievable Storage Facility in an Integrated Waste Management System
DOE/RW-0251	OCRWM Backgrounder: Integrating Contractor Efforts in the Civilian Radioactive Waste Management Program
DOE/RW-0252	OCRWM Backgrounder: Restructuring the Office of the Civilian Radioactive Waste Management
OCRWM/PI-033	Reprints from Public Laws
OCRWM/PI-038	Factsheet Series
OCRWM/PI-039	Poster Set
OCRWM/PI-040	Nuclear Waste Management – France

OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

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Mr (March)	S/O (September/ October)
Ap (April)	N/D (November/ December)
My/Jn (May/June)	
Jl (July)	

DOE/RW-0232

OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

February/March 1990

Summary Oral Statement of James D. Watkins, Secretary of Energy, Before the Committee on Energy and Natural Resources, United States Senate, March 2, 1990

"...Today, I would like to discuss several initiatives that I have taken that center on management restructuring for the program, moving ahead with scientific investigations at the Yucca Mountain characterization site and establishing interim storage capability for spent nuclear fuel.

"These initiatives, which I first presented in late November 1989 in a 'Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program' (60-Day Report), are designed to provide the framework for a reasonable chance of success in carrying out the requirements of the Nuclear Waste Policy Act of 1982 (NWPA), as amended. They are discussed in my detailed statement which I would like to submit for the record and I would like at this time to give a brief review.

"By way of background, when I became Secretary of Energy, I made a number of commitments with regard to nuclear waste management and protection of the public health, safety and environment. I promised to develop a plan for environmental restoration of DOE's nuclear-related waste sites for compliance with applicable regulations, to address the issues surrounding the opening of the Waste Isolation Pilot Plant and to restructure the Civilian Radioactive Waste Management Program. And I have moved ahead in all of the areas.

"With regard to the Civilian Waste Program, I heard claims from a variety of sources, including Members of Congress, that the Program was plagued with mismanagement, had set and was operated under unrealistic schedules, had not made efforts to work with affected and interested parties, and was trying to 'cram the repository' down the throat of Nevada. It seemed clear that there was little, if any, public confidence with regard to DOE's progress and ability to properly carry out the implementation of the NWPA as amended. These claims caused me deep concern and made me committed to restoring credibility to the program.

"I made an early determination that I must undertake my own assessment of all DOE programs, including the Civilian Program, in order to come up with an adequate baseline of information, one with which I can make informed judgments. I was determined that I would not be driven by any previously set schedules or management decisions which did not address the continuing or emerging obstacles and issues or were not based on sound technical studies, complete reviews, adequacy of public confidence and good fiscal management.

"As a result of these initial observations, several months ago I conducted a comprehensive review of the Civilian Waste Program to establish a management baseline to allow me to measure progress toward implementing the will of Congress. Based on that review, I concluded that the program was not executable in the then current form. Therefore, a number of actions have been initiated. For example:

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Summary Oral Statement of James D. Watkins, Secretary of Energy, Before the Committee on Energy and Natural Resources, United States Senate, March 2, 1990

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- **The Program Needed a Permanent Director**

"The President nominated Dr. John W. Bartlett for Director of the program. He is highly qualified to carry out the difficult task of developing a waste disposal system. And, Mr. Chairman, I am pleased that this Committee supported his confirmation. I would like your assistance in expediting the confirmation process by the entire Senate.

- **It Needed to Establish Realistic and Achievable Schedules**

"A chronic problem with the OCRWM program has been schedule delays and uncertainties. Some of these delays have been of the program's own making, primarily driven by being overly optimistic without essential program underpinnings. There has been a clear need for establishing a schedule that (1) has some degree of achievability, and (2) incorporates external concerns, participation, decisions and obstacles as well as contingencies based on external and internal actions. Such a schedule did not exist when I took over one year ago.

"Briefly, the new schedule shows a significant delay from 2003 to 2010 for start of repository operations. This is based on the primary assumption of the time required for obtaining access, including applicable permits, to the Yucca Mountain characterization site to allow scientific investigations to begin.

"As a related matter, the new schedule for the Monitored Retrievable Storage (MRS) facility assumes that a site would be obtained by identifying a volunteer host, and preferably through the work of the Nuclear Waste Negotiator. In addition, the schedule assumes that the linkages between the MRS and the repository which are contained in the Nuclear Waste Policy Amendments Act would be modified—either independent of, or as a result of, Negotiator-proposed initiatives.

"Under these assumptions, it is estimated that waste acceptance could begin at an MRS site, on a limited basis, as early as January 1998; and full operations could begin in the year 2000.

"In the meantime, surface-based tests, we believe, will be an important part of the scientific investigations at the Yucca Mountain characterization site. These tests will focus on potentially adverse conditions in the context of total system performance and on efforts to evaluate key suitability issues early in the site investigation process.

"This testing from the surface will allow DOE to evaluate the suggestions of the Nuclear Waste Technical Review Board and the Nuclear Regulatory Commission relative to the design of the exploratory shaft facility prior to beginning underground investigations. We believe that both surface-based and underground in situ tests, combined with continuing evaluation of the data as it is obtained to assess the performance of the site, is a cost-effective and timely way in which to conduct scientific investigations.

"It is anticipated that these surface-based tests will begin in January 1991, and if no unsuitable conditions are found as a result of this testing, exploratory shaft construction would begin in late 1992. However, I want to note that we are currently looking at ways to accelerate that schedule.

"Surface-based tests are very important and will continue throughout the underground in situ tests. The full spectrum of information provided by both surface-based and underground in situ tests will demonstrate whether the site is suitable or unsuitable, and provide the basis for repository design if the site is found suitable.

"It is quite clear that no matter how the program is restructured or redirected, the Yucca Mountain scientific investigation project and schedule cannot proceed unless we can begin site characterization studies. We cannot begin these scientific studies until we obtain the required permits to begin the tests at Yucca Mountain.

"I have stated on many occasions that the preferred way in which I would like to do business is in a cooperative manner with the affected parties. I have tried to establish cooperative relations with the State of Nevada and shall continue to do so. We would like to proceed with the State's scientists working with us.

"But while we have a Federal law that says characterize the site, other current Federal laws require State permits to do the work; and Nevada passed a State law that has resulted in the State's returning and not processing the permit applications.

"In late December 1989, after holding the DOE's permit applications (one for more than two years), the State of Nevada returned the applications to DOE, unprocessed and on January 5, 1990, filed suit against the DOE, charging that the State had effectively vetoed the repository-siting program.

"On January 25, 1990, at my request, the Department of Justice filed a lawsuit against the State. The suit asks for a court order that would stop the State from impeding the scientific study called for by Congress to determine whether Yucca

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Summary Oral Statement of James D. Watkins, Secretary of Energy, Before the Committee on Energy and Natural Resources, United States Senate, March 2, 1990

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Mountain would be a suitable site for development of a repository.

"The State has refused to cooperate. DOE, therefore, has no alternative but to turn to the Federal courts to break this logjam so that we can carry out the will of Congress.

"Based on the recent examination of the schedule for development of the repository and allowing the time necessary for sound investigation and design, it is clear that DOE cannot meet the target date to begin receiving spent fuel in 1998 even at an MRS facility because of the current linkages in the Amendments Act.

"I have directed OCRWM to discuss with Congress modifying the linkages currently existing in the law that link MRS facility decisions with repository decisions and to continue to study a variety of options which could enable DOE to achieve early acceptance of spent fuel.

- **The Program Needed to be Organized and Managed so that the Goals and Schedules have a Reasonable Chance of Success**

"I requested an independent management review of OCRWM's management structure and contractual arrangements. This review included organizational structure and authority, responsibilities and accountability of DOE personnel. It has now been completed and I have received the report and recommendations. I expect a decision will be made soon about the organizational realignment of the program. However, I think it is important for the new Director to participate in these decisions and, therefore, I have decided to leave final organizational decisions for him to make.

"In the meantime, I have effected one major organizational change: I have established direct-line reporting of the Yucca Mountain Project Office to OCRWM. This direct line reporting is consistent with all departmental changes I have made to more clearly define responsibility and accountability of DOE and field leadership on every project. This was needed not only to enhance accountability but also to correct dysfunctional and duplicative approaches to project management.

- **The Program Needed Resources Directed and Allocated Commensurate with the Responsibilities and the Work to be Done**

"With regard to contractor support, an internal review is currently underway. Some adjustments have been made, but final decisions will await the new Director. In the meantime, I know this subject is also of great interest to the

(Continued on page 4)

DOE Publishes Proposed Notice of Interpretation and Procedures for Payments-Equal-to-Taxes Provisions of the Nuclear Waste Policy Act of 1982, As Amended

On Mar. 7, 1990, DOE published in the *Federal Register* (Vol. 55, No. 45, pages 8180-8184) for comment its proposed interpretation and procedures for certain of the payments-equal-to-taxes (PETT) provisions of the Nuclear Waste Policy Act of 1982, as amended (the Act). The Act provides that DOE will make these payments to eligible States, units of local government, and Indian Tribes for activities related to siting, development, and operation of a high-level radioactive waste and spent-fuel repository, and any monitored retrievable storage facility. The jurisdictions are eligible for payments equivalent to the amount they would receive if authorized to tax the Federal site characterization activities at such site.

Following its review of the comments received, DOE will publish a final notice setting forth DOE's interpretation of certain PETT provisions of the Act applicable during the current site characterization phase of the nuclear waste repository program in addition to a general description of the procedures DOE anticipates utilizing to implement the PETT provisions.

Written comments must be received on or before May 7, 1990, and should be sent to Allen Benson, Office of Civilian Radioactive Waste Management, RW-123, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585. Copies of comments received will be available for examining at DOE's public reading room at 1000 Independence Avenue SW., Room 1E-190, Washington, DC.

For further information contact Allen Benson at the above address (202) 586-4959 or Robert Mussler, Esq., Office of General Counsel, GC-11, U.S. Department of Energy, Washington, DC 20585, (202) 586-6947. ☆

DOE Issues a "Report to Congress on the Potential use of Lead in the Waste Packages for a Geologic Repository at Yucca Mountain, Nevada"

In the report of the Senate Committee on Appropriations accompanying the Energy and Water Appropriation Act for 1989, the Committee directed DOE to evaluate the use of lead in the waste package to be used in geologic repositories for spent nuclear fuel and high-level waste. The evaluation that was performed in response to this directive is presented in the report transmitted to Congress on Feb. 9, 1990, (DOE/RW-0254).

The report is based on an extensive review of available technical literature by the Brookhaven National Laboratory (BNL), and analyses performed by BNL and the Lawrence Livermore National Laboratory. These were combined with information received in response to detailed questionnaires submitted to the nuclear waste repository programs of seven foreign countries. Lead characteristics considered in the report include general and localized corrosion in aqueous environments, compatibility with other materials, and mechanical and nuclear properties. Evaluation of potential functional applications for lead included heat transfer enhancement, structural support, corrosion barrier, radiation shielding, and radionuclide shielding, and radionuclide release control. Unit cost implications of various hypothetical uses of lead were evaluated.

A draft of the report was submitted for review by a panel of peers including representatives from the International Lead Zinc Research Organization, Idaho National Engineering Laboratory, the U.S. Bureau of Mines, Pacific Northwest Laboratories, and the Battelle Memorial Institute. DOE requested the Panel to review and comment on the draft report, to identify additional information needs for inclusion in the report, and to recommend appropriate research tasks, if any are required, to complete the evaluation of lead. The final report includes agreed-upon resolutions of all comments of the peer reviewers.

The report consists of seven sections and seven appendices. The seven sections of the report include background information on the role and the definition of the waste package, and the functional and regulatory requirements for the waste package. The report then discusses the uses of lead in the waste package and reviews the properties of lead as a potential waste package component. These evaluations are followed by a discussion of environmental regulations applicable to the use of lead, preliminary estimates of costs, a summary, and a presentation of the following conclusions:

- Lead has received some consideration as a material for use in waste packages in the United States and other countries.
- Although many results of the international studies of lead are somewhat useful in assessing the applicability of lead for the Yucca Mountain repository, none of the foreign designs is directly applicable because of the generally higher temperatures and significantly different environmental conditions that are expected to prevail at the Yucca Mountain site.
- In the context of the conceptual strategy for demonstrating regulatory compliance for the waste package, lead would be an inappropriate material for use as the principal containment barrier in comparison with any of the candidate materials currently under consideration primarily because of the poor mechanical and creep properties. Therefore, no further consideration will be given to the use of lead in the reference conceptual design. ☆

Summary Oral Statement of James D. Watkins, Secretary of Energy Before the Committee on Energy, and Natural Resources, United States Senate, March 2, 1990

(continued from page 3)

Chairman and we have provided some preliminary data to you. We will follow up with more details.

- **Public Confidence and Public Understanding of the Issues, Problems and Actions Required to Address these Issues are Lacking and Sorely Needed to Ensure that Informed Decisions are made Today and in the Future Regarding the Protection of the Public Health, Safety and Environment**

"The successful development of our Nation's nuclear waste management system is not only contingent upon technical suitability and design of the components, it is also contingent upon achieving public confidence. To have any hope for success, skills, knowledge and understanding must be enhanced. I have, therefore, directed the Civilian Waste Program to establish a strong public involvement and education program designed to increase knowledge, participation and skills within the educational and public communities. The purpose of such a program is to promote public understanding and public confidence through involvement and education so that the youth of today who will be our managers, scientists, decision makers, and waste management workers of tomorrow, can make informed decisions and implement and operate important waste management systems." ☆

Energy Secretary Receives Report from Nuclear Waste Technical Review Board

On Mar. 22, 1990, the Nuclear Waste Technical Review Board (NWTRB) released its first report to Congress and the Secretary of Energy, evaluating DOE's scientific and technical work at the Yucca Mountain site in Nevada. The NWTRB was created in the Nuclear Waste Policy Amendments Act of 1987 to provide scientific and technical advice on the Nation's spent nuclear fuel and high-level waste disposal program.

Secretary of Energy James D. Watkins made the following statement after a meeting where the NWTRB reported its scientific and technical recommendations on the Civilian Radioactive Waste Management Program.

"...While I will want to conduct a comprehensive review of their report, my initial observation is that their recommendations are sound and constructive. In addition, it appears that their overall conclusions provide a vote of confidence in our scientific plans and activities.

"In general, my initial observations of the Board's Report are as follows:

- I see no evidence in the Report of any fatal flaws in the DOE program. Quite the opposite, the Report projects an overall impression that our program is moving in the right direction. There are a number of areas where they recommend improvements. These recommendations will be taken most seriously and result in a stronger program.
- The Board makes it clear that there is no technical reason at this time to consider abandoning the Yucca Mountain, Nevada, characterization site. In fact, a crucial, priority issue identified by the Board is for DOE to get on the site to carry out the scientific investigations to determine whether or not the site is suitable for development of a geologic repository.
- The Board explicitly recognizes the potential value of a Monitored Retrievable Storage facility as part of the overall waste management system..."

The Board made 24 recommendations, which are presented in 3 categories as described below:

Technical and Scientific Recommendations

A. Mechanical Excavation

The Board recommends that the DOE maximize the use of the most modern mechanical excavation techniques in the recently initiated studies of alternative shaft and tunnel construction methods in order to reduce disturbance to the rock walls and to achieve greater economy of time and cost.

B. Ghost Dance Fault

The Board recommends that the Ghost Dance Fault be intersected with an exploratory drift at more than one location so as to obtain a better three-dimensional picture of the fault's physical properties.

C. Early Exploratory Drifting

The Board recommends that the DOE definitively plan an additional early exploratory drift in an east-west direction across the Yucca Mountain geologic block so as to reduce uncertainties and to increase confidence as early as possible that potentially disqualifying geologic features do or do not occur.

D. Exploratory Ramp

The Board recommends that the DOE continue the studies for incorporating an exploratory ramp entering the Yucca Mountain geologic block from the east. Such a ramp would allow the known fault zone and the different tuff units that occur between the surface facilities and the repository area in Yucca Mountain to be crossed and inspected at depth.

E. Non-Welded Tuff

The Board recommends that the DOE include in the exploratory program ample penetration of the softer, less permeable tuff units by borings, shafts, ramps, or tunnels so that inspection, mapping, and testing of these critical units can be conducted, both above and below the repository level.

F. Excavation Testing Sequence

The Board recommends that the DOE develop innovative ways of coordinating and sequencing the excavation and scientific testing so both programs can be executed in a timely manner without sacrificing the scientific validity of the testing.

G. Unsaturated Zone Recharge

The Board recommends that the DOE expand and accelerate the studies of snowmelt and rainfall infiltration into alluvium and near-surface fractures.

H. Fracture Flow

The Board recommends that the DOE continue the sampling and analysis of ^{3}H and ^{36}Cl isotopes in order to gain a better understanding of the surface features that control this deep penetration of recharge.

I. Hydrogeologic Modeling

The Board recommends that the DOE approach hydrogeologic modeling in the program in a more systematic fashion. All predictive hydrogeologic models should be validated each time new pertinent field data are made available. Validation should be a continuous iterative process. The relationship between the use of deterministic and stochastic models should be clarified.

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OCRWM Fiscal Year 1991 Budget Request

The Fiscal Year (FY) 1991 budget proposed for OCRWM is based on the Nuclear Waste Policy Act of 1982 (NWPA), as amended. The budget request for FY 1991 from the Nuclear Waste Fund is $292.8 million as compared to $295.2 million in FY 1990 (Table 1). The FY 1991 budget request for the Civilian Radioactive Waste Research and Development program, as part of DOE's Energy Supply Research and Development programs, is $0.7 million.

TABLE 1
FY 1991 Congressional Request, Nuclear Waste Fund
(Dollars in Thousands)

	FY 1989 Appropriation	FY 1990 Appropriation	FY 1991 Request
First Repository			
Operating expenses	$ 223,700	$ 176,058	$ 183,200
Capital equipment	0	0	10,000
Subtotal, First Repository	223,700	176,058	193,220
Monitored Retrievable Storage			
Operating expenses	15,000	3,000	10,000
Transportation, Systems Integration, and Engineering Development (Trans., Syst. Int., & E.D.)			
Operating expenses	40,800	21,700	29,980
Capital equipment	200	300	300
Subtotal, Trans., System Int., & E.D.	41,000	22,000	30,280
Program Management & Technical Support			
Operating expenses	71,432	65,498	57,733
Capital equipment	700	1,500	1,600
Subtotal, Program Management & Technical Support	72,132	66,998	59,333
TOTAL PROGRAM	351,832	268,056	292,833
Nuclear Regulatory Commission (NRC) fees	15,000	27,100	0*
TOTAL NUCLEAR WASTE FUND	$ 366,832	$ 295,156	$ 292,833

**Decrease due to policy changes requiring that NRC request funds directly through the budget process for licensing activities.*

First Repository

Under the Amendments Act, DOE is directed to characterize only one site — the Yucca Mountain site in Nevada — to determine its suitability for the first repository. The FY 1991 request for activities associated with the first repository (including capital equipment) is $193.2 million as compared to $176.1 for FY 1990. The increase in FY 1991 is to fund a limited drilling program to conduct scientific investigations of Yucca Mountain, focused on surface-based testing aimed specifically at evaluating whether the site has any features that would indicate that it is not suitable as a potential repository site; continue support of the exploratory shaft facility (ESF) Title II

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OCRWM Fiscal Year 1991 Budget Request

(continued from page 6)

design activities; complete the ESF Alternatives Study; maintain an NRC accepted quality assurance program; and provide for modest program expansion in the areas of regulatory, institutional and environmental activities.

Monitored Retrievable Storage (MRS)

The Amendments Act authorizes an MRS facility as an integral part of the overall waste management system and places certain conditions on the timing of its siting and construction. The FY 1991 request for activities associated with the MRS program is $10 million as compared to $3 million in FY 1990. Major activities to be conducted in FY 1991 include initiation of siting activities; development of a grant program and provision for grants to States, Indian Tribes or units of local governments to study and assess the feasibility of siting an MRS in their jurisdiction; development of environmental background data; and, if a volunteer State is identified, initiation of an environmental assessment study. Additional activities include the initiation of generic conceptual design efforts for an MRS; systems analyses to ensure that the MRS facility is fully integrated into the waste management program; and transportation support systems studies to ensure that the necessary transportation capabilities are in place to support MRS operation.

Transportation, Systems Integration, and Engineering Development

Total availability for FY 1990 is $32.5 million which includes $10.5 million of prior year funds. While new Budget Authority increased $8.3 million, actual availability decreased by $2.2 million. This reduction in the level of funding requested for this subprogram results in a reduction in cask acquisition and cask design studies.

Transportation

Major activities to be conducted in this area include completing final designs and issuing reports on two transportation cask designs; conducting drop and design verification tests; and continuing cooperative activities with regional and national organizations. In addition, DOE will continue to conduct a pilot inspection program and initiate the development of transportable storage systems for the MRS facility.

Systems Integration and Engineering Development

In FY 1991, program baseline documents, including system requirements, descriptions, and interfaces will continue to be updated, together with systems engineering documentation and management plans. Based on new design data and other information, system analysis capabilities will continue to be updated. Using the systems study planning process, detailed systems engineering studies will be conducted in support of system operation and optimization of various subsystem options that will impact system costs, procedures, and operations.

Engineering development will concentrate on the prototypic consolidation development program and reducing the volume of non-fuel-bearing components of consolidated spent fuel assemblies.

Program Management and Technical Support

For program management and technical support, the FY 1991 request is $59.3 million as compared to $67 million in FY 1990. FY 1991 activities are partially funded with $7.7 million of prior year funds which maintain an essentially level program.

Program management and technical support includes such activities as support of intensified independent financial audit activities, annual fee verification and calculation studies, international activities, cooperative activities with statutory and national organizations, Licensing Support System procurements and installations, and oversight and management of enhanced program-wide quality assurance activities.

Nuclear Waste Fund

Table 2 provides a status of the Nuclear Waste Fund, established by the NWPA for payment of disposal costs with fees from the generators and owners of spent nuclear fuel and high-level radioactive waste. Since inception of the Nuclear Waste Fund, fees collected and interest earned on investments have totalled approximately $5.1 billion.

TABLE 2
Nuclear Waste Fund
Summary of Cash Receipts and Disbursements Cumulative Through Dec. 31, 1989
(Dollars in Millions)

RECEIPTS		
Fees		
Total One-time	$1,452.4	
On-going kilowatt-hour fees	2,728.0	
Interest on Investments	877.4	
Total Receipts.	5,057.8	
DISBURSEMENTS		
Disbursement for Operations	2,690.9	*
Other Disbursement	17.9	
Net Investments	2,348.9	**
Total Disbursements	$5,057.7	
CASH BALANCE	.1	

** Disbursements include repayment of debt to Treasury (appropriated debt) of $264 million.*

***This figure represents the book value of investments as of Dec. 31, 1989.* ☆

Report on Transportation Coordination Group Meeting

A Transportation Coordination Group meeting was held Feb. 21-22, 1990, in Lexington, KY. Attendees included more than 90 representatives of DOE and other Federal agencies, contractors, national laboratories, utilities, State and local governments, regional groups, transportation industries and associations, and the Nuclear Waste Technical Review Board.

The meeting began with a half-day review of the OCRWM Program, including summaries of Transportation Program activities and the Yucca Mountain Project. This was followed by updates from the Utilities Transportation Working Group, the State of Nevada's Nuclear Waste Project Office, and Lincoln and Clark Counties, Nevada.

The rest of the meeting was devoted to a seminar on the OCRWM Cask Systems Development Program. Topics of discussion included international experience in cask design and operation, the NRC cask certification process and its status, and cask design specifications and technology. Highlights of the meeting were presentations by two cask contractors on their cask designs.

- The development of the GA-4 and GA-9 legal-weight truck casks was summarized. This overview provided detailed information on the design approach for the casks and ancillary equipment, including how regulatory requirements are met and how the design ensures public safety.

- The BR-100 rail/barge cask design features were reviewed. The presentation covered the design, specifications and features of this 100-ton shipping cask.

OCRWM Backgrounders prepared on each of the five preliminary cask designs were available at the meeting. An exhibit area included drawings of the cask designs, cask models, a model fuel assembly and fuel rod, samples of materials used in the manufacture of cask components, and a publications table with copies of the five cask preliminary design reports and forms for requesting information on the cask program.

The cask contractors completed their preliminary designs in December 1989 (see *OCRWM Bulletin*, January 1990). Design reports prepared by the cask contractors, along with executive summaries, are expected to be available to the public by the summer of 1990. For further information on this meeting or to receive information on the OCRWM Cask Systems Development Program, contact Christopher Kouts at (202) 586-9761. ☆

U.S. Fish and Wildlife Service Determines that Desert Tortoise is not Likely to be Jeopardized By Yucca Mountain Site Studies

On Aug. 4, 1989, the U.S. Fish and Wildlife Service (FWS) of the Department of the Interior used its emergency authority to place the desert tortoise on the endangered species list. Because desert tortoises are present on the Yucca Mountain site, a biological assessment was prepared by DOE that analyzes project impacts to the tortoise and its habitat. The biological assessment also included recommended actions to be taken to protect the desert tortoise and minimize adverse impacts.

The FWS has now completed its review of DOE's biological assessment and other relevant documents, and on Feb. 9, 1990, rendered its biological opinion that the Yucca Mountain site studies are not likely to jeopardize the continued existence of the endangered desert tortoise (see *OCRWM Bulletin*, September/October 1989). This opinion is based on the overall numbers and distribution of the desert tortoises, small amounts of surface disturbance, low tortoise density in the project area, and the identified procedures designed to reduce or avoid direct and indirect adverse effects to tortoises.

Since 1981, DOE has treated the desert tortoise as a sensitive species and has monitored its movements in the Yucca Mountain area. DOE plans to continue to monitor the tortoises during site activities.

Once site work is ready to start, environmental scientists will conduct site specific surveys to determine if tortoises exist in the area. Wherever feasible, DOE will move an activity to avoid disturbing the tortoise. In addition, measures will be taken to prevent tortoises from wandering into construction areas or from being harmed by construction activities, facilities attractive to ravens and other predators will be minimized, and all personnel associated with site characterization activities will be educated as to desert tortoise issues. These and other actions will reduce the chance that site activities would harm any desert tortoises. The environmental surveys will be done under a permit from FWS to handle endangered species. ☆

Energy Secretary Receives Report from Nuclear Waste Technical Review Board

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J. Calico Hills Hydrogeologic Properties

The Board recommends that the DOE explore the Calico Hills unit with surface borings and with the exploratory shaft facility. See also Recommendation E.

K. Adsorption in Unsaturated Tuffs

The Board recommends that the DOE study radionuclide adsorption in unsaturated tuffs over the range of temperatures and variable conditions of pH, ionic strength, and competing and complexing aqueous ionic species concentrations expected at the site.

L. Radionuclide Adsorption Workshop

The Board recommends that the DOE organize a radionuclide adsorption workshop to be attended by the DOE and its contractors involved in the measurement and modeling of such adsorption. The workshop would have two general purposes.

— To determine the applicability of available radionuclide adsorption data on tuff and models for predicting such adsorption under existing and postclosure conditions at Yucca Mountain.

— To establish what additional radionuclide adsorption research and model development are needed. Such research and model development should: (1) attempt to demonstrate that quantitative, scientifically defensible predictions of radionuclide adsorption at Yucca Mountain are possible; and (2) show how much measured and predicted adsorption relates to compliance with the radionuclide release rate criteria set forth in 40 CFR 191.

M. Performance Assessment Methodology

The Board recommends that the DOE develop the methodology needed to demonstrate that performance assessment can be carried out.

N. Preliminary Performance Assessment

The Board recommends that the DOE promptly carry out preliminary performance assessment calculations to demonstrate that: (1) such computations are possible, and (2) no site characteristic has yet been detected that would disqualify the site.

O. RADTRAN/TRANSNET*

The Board recommends that the DOE begin the process of validating the RADTRAN model and some components of the TRANSNET package. This includes: (1) a demonstration of the validity of the underlying assumptions and the component sub-models and the reasonableness of the results, and (2) a quantification of the degree of accuracy of the risk estimates by calculating their associated confidence limits.

**RADTRAN is a model and computer code used to assess the risks of transporting radioactive materials under both incident-free and accident conditions. TRANSNET is a computerized planning tool consisting of a collection of models that select routes, estimate risk, and/or perform system and cost analyses.*

P. Risk Model User-Needs Assessment

The Board recommends that DOE assess the needs of potential civilian radioactive waste program RADTRAN/TRANSNET users with respect to what users want to accomplish and the levels of detail they require for different applications. Such a needs assessment would lead to a determination of: (1) the type of analytical capabilities that should be added or improved, and, (2) the extent to which the model can be tailored to specific user needs.

Q. ^{14}C Release Mechanism

The Board recommends that the DOE expand its studies of ^{14}C release mechanisms and initiate a consultative program with the Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC) to examine the appropriateness of the ^{14}C limit itself.

Strategic Technical and Non-Technical Recommendations

A. System Safety

The Board recommends that DOE initiate a transportation system safety program. The Board will meet with both DOE and the NRC to encourage this goal.

B. Human Factors

The Board recommends that DOE initiate a human factors program for transportation safety. The Board plans to meet with both DOE and the NRC to encourage this goal.

C. Operational Planning

The Board recommends that DOE evaluate the use of risk-based planning tools (such as MORT)** in developing a broad-based and complete transportation operational plan that encompasses system safety.

***MORT (Management Oversight Risk Tree) was developed to minimize the risks in operational plans and programs, and could be applied to the transportation operational planning program to ensure that a broad-based and complete risk assessment and management program is developed.*

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DOE Issues Combined Progress Reports on Site Investigations for the Yucca Mountain Site

DOE has prepared a combined progress report on site characterization for the Yucca Mountain site, Nevada, covering the periods of Sept. 15, 1988 - Apr. 15, 1989, and Apr. 16, 1989 - Sept. 30, 1989. This and future progress reports, to be issued at approximate six-month intervals during site characterization, will be submitted to the Nuclear Regulatory Commission (NRC) and to the Governor and legislature of Nevada. It will also be made available to the Nuclear Waste Technical Review Board, affected units of local government, and the general public.

The progress report presents short summaries of the status of site characterization activities and cites technical documents and research products that provide more detailed information on the activities. The report provides highlights of work started during the reporting period, work in progress, and work completed and documented during the reporting period. In addition, the report is a vehicle for discussion of major changes, if any, to DOE's site characterization program resulting from the ongoing collection and evaluation of site information, the development of repository and waste package designs, receipt of performance assessment results, and changes, if any, that occur in response to external comments on the site characterization program.

Highlights during the reporting periods included:

- The Site Characterization Plan for the Yucca Mountain site was issued on Dec. 28, 1988.
- A detailed review of repository program schedules was initiated. The goal of this review was to develop a realistic schedule for the repository program that will, along with other initiatives, establish confidence in DOE's ability to meet program milestones (see page 2 of this *Bulletin*).
- Preparation of study plans and technical procedures continued. As of Sept. 30, 1989, eight study plans had been submitted to NRC for review and comment, two of which have successfully completed the NRC's review. An additional 25 study plans were in the DOE review and approval process.
- Efforts to obtain environmental permits from the State of Nevada continued.
- Interactions were initiated with the Nuclear Waste Technical Review Board, the independent review board mandated by the Nuclear Waste Policy Amendments Act of 1987. During the reporting period, the full Board and its various panels met with DOE on seven occasions.
- Technical exchanges have been held between DOE, the NRC, and the State of Nevada on a number of topics including tectonics, calcite-silica deposits and data management. Monthly quality assurance status briefings were also held with the NRC.
- Implementation of the Quality Assurance Program continued.
- Prototype testing and coring using dry drilling techniques took place.

Development of the next progress report, covering the period Oct. 1, 1989 - Mar. 31, 1990, is now under way. ☆

Energy Secretary Receives Report from Nuclear Waste Technical Review Board

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D. Environmental and Public Health Program

The Board recommends that DOE develop a systems approach to its Yucca Mountain ecosystem studies program and that each individual study should be integrated into an overall environmental program.

Science Policy Recommendations

A. DOE and State of Nevada Interactions

The Board recommends that DOE continue its efforts to resolve the present impasse on permitting of site characterization studies. Unless the impasse is resolved, the Yucca Mountain Site cannot be characterized because needed scientific and technical work cannot proceed.

B. The EPA Standard: 40 CFR 191

The Board recommends that certain modifications should be considered when the EPA Standard: 40 CFR 191 is revised.

C. Consideration of Uncertainties in Setting Standards

The Board recommends that DOE request the regulatory agencies to consider inherent uncertainties and limitations in geologic information and data projected for periods of tens of thousands of years in regard to the rigor of formulating acceptable and realistic environmental radiation protection standards. ☆

Annual Report Issued on Historic Preservation at Yucca Mountain, NV

Pursuant to the Nuclear Waste Policy Act of 1982, as amended, DOE is required to conduct scientific investigations at the Yucca Mountain site in Nevada to determine the suitability of the site as a repository for the disposal of high-level radioactive waste and spent nuclear fuel. Before undertaking any activity that may jeopardize archaeological or historic resources in the Yucca Mountain vicinity, DOE must comply with provisions of the National Historic Preservation Act (NHPA). In addition, the Advisory Council on Historic Preservation (the Council) is to be provided a "reasonable opportunity to comment on the undertaking."

On Dec. 15, 1988, DOE and the Council executed a Programmatic Agreement regarding DOE's compliance with the NHPA in connection with DOE's activities at Yucca Mountain. Fourteen stipulations were adopted that guarantee DOE's cooperation with all appropriate interested parties. With the acceptance by DOE and the Council of these stipulations and the Programmatic Agreement as a whole, it was mutually agreed that observance of these conditions will prevent or satisfactorily mitigate any adverse effects of the undertaking on historic properties. Stipulation 1 of the Programmatic Agreement requires DOE to report annually to the Council and to the Nevada State Historic Preservation Office (NSHPO) on its progress in implementing the Agreement.

On Mar. 13, 1990, the "Annual Report for the Programmatic Agreement on Historic Preservation" was signed by the Acting Director, OCRWM, and issued to both the NSHPO and the Council. This report, which covers the period December 1988 through December 1989, discusses activities regarding site characterization at Yucca Mountain. As highlighted below, implementation of 10 of the 14 stipulations adopted is discussed, covering archaeological activities conducted during 1989. The status of the remaining four is not discussed because they do not entail new or ongoing work and their status remains the same.

Monitoring the Programmatic Agreement (Stipulation 1)

Activities conducted to monitor compliance with the Programmatic Agreement during the past year include (1) visits to known historical properties in the Yucca Mountain Project area to assess potential impacts of site project activities on these properties, and (2) preactivity surveys to identify and evaluate impacts to cultural resources in areas proposed for project activities.

Research Design (Stipulation 2)

In October 1989, a Research Design and Long-Range Study Plan for treatment of archaeological sites occurring in the Yucca Mountain Project area was submitted to the Council by DOE for comment. The Research Design identifies key research questions that may be addressed as a result of work at Yucca Mountain.

Data Recovery (Stipulation 3)

The Research Design and Long-Range Study Plan includes a data recovery program for the Yucca Mountain Project area to mitigate potential adverse impacts from project activities. In addition to procedures to be utilized, the data recovery program describes a sampling rationale that identifies known cultural resources most useful for addressing research questions posed in the research design. The curation facility to be used for permanent storage of artifacts and documents is also described.

Additional Surveys (Stipulation 4)

Another type of evaluation, the preactivity survey, is required by the Environmental Monitoring and Mitigation Plan (see *OCRWM Bulletin*, January/February 1989). The preactivity survey consists of an examination by qualified archaeologists of the area for purposes of identifying archaeological resources and historic sites that may be affected by the proposed activity. In 1989, 13 sites were examined for the presence of cultural resources through records searches or on-site surveys.

Coordination (Stipulation 5)

During the past year, nine reports from preactivity surveys were distributed for comment to State and Federal agencies. Seven Native American cultural resource studies have been prepared and submitted for concurrent review by the 16 involved American Indian bands. Meetings were conducted in December 1989, with representatives of 11 of the 16 involved bands, to continue evaluating their cultural resource protection recommendations.

Worker Education Program (Stipulation 6)

Over the past year, the Yucca Mountain Project has been actively developing a comprehensive worker education program for protection of archaeological and historic resources. Efforts have focused on development of a worker training film which every worker on the project will be required to view. The film is scheduled to be completed in March 1990, and worker training will begin as soon as the training materials are ready.

DOE Contractor Notification (Stipulation 7)

On Mar. 16, 1989, the Project Manager of the Yucca Mountain Project Office formally transmitted the Programmatic Agreement to the management of each project participant instructing them to ensure that their staff, contractors, and

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Selected Events Calendar

April 8-12 International High Level Radioactive Waste Management Conference & Exposition, Las Vegas, NV. Contact Maureen Rafferty, American Society of Civil Engineers, 345 East 47th Street, New York, NY, (212) 705-7543 or Robert Philpott at (202) 586-5396.

April 24-26 Nuclear Waste Technical Review Board: Environmental and Public Health Panel, Las Vegas, NV. Contact Paula N. Alford, Director, External Affairs, 1111 18th Street, NW, Suite 801, Washington, DC 20036, (202) 254-4792.

April 26-27 Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White (301) 492-7288.

May 23-25 Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White (301) 492-7288.

June 10-14 American Nuclear Society Annual Meeting, Nashville, TN. Contact Donald B. Trauger, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6254, (615) 576-6730.

July 15-18 Institute of Nuclear Materials Management, Los Angeles, CA. Contact Barbara Scott, (708) 480-9573.

DOE/Nuclear Regulatory Commission Technical Exchanges*

April 17-18 Performance Assessment Integration

May Scenario Development (date to be determined)

June Unsaturated Zone Testing (date to be determined)

July Saturated Zone Testing (date to be determined)

August Natural Resources (date to be determined)

** Most DOE/NRC Technical Exchange Meetings will be held at NRC Headquarters, White Flint, MD. For further information concerning these meetings, contact Linda Desell, U.S. Department of Energy, OCRWM, Office of Systems Integration and Regulations, RW-331, 1000 Independence Avenue, S.W., Washington DC 20585, (202) 586-1462.*

For details on DOE/NRC meetings call (1/800) 368-2235 for a recorded message. In the Washington, DC, area call 479-0487.

A telephone recording service has been established for the announcement of upcoming meetings related to the waste management program of the NRC. The number is (1/800) 368-5642, ext. 20436. Washington, DC, area residents should call 492-0436.

For information on meetings and events occuring between issues of the *OCRWM Bulletin* use OCRWM INFOLINK II, an electronic bulletin board that can be accessed through a standard computer communications capability on (615) 482-6982. The *OCRWM Bulletin* is available through INFOLINK II. ☆

New Publications and Documents

"Office of Civilian Radioactive Waste Management Program Annual Report to Congress," DOE/RW-0216 (Rev), December 1989.

This is the sixth Annual Report to Congress by OCRWM, and is submitted to inform Congress of OCRWM's activities and expenditures during fiscal year 1988. A dominant theme throughout the report is the implementation of the policy focus and specific implementation of the Nuclear Waste Policy Amendments Act of 1987.

"Progress Report on the Scientific Investigation Program for the Nevada Yucca Mountain Site," DOE/RW-0217P, March 1990.

See page 10 of this *OCRWM Bulletin* for highlights of this report.

"Report to Congress on the Potential Use of Lead in the Waste Packages for a Geologic Repository at Yucca Mountain, Nevada," DOE/RW-0254, December 1989.

See page 4 of this *OCRWM Bulletin* for highlights of this report.

"Integrated Data Base for 1989: Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics," DOE/RW-0006, Rev.5, November 1989.

The information in this report summarizes the DOE data base for inventories, projections, and characteristics of domestic spent nuclear fuel and radioactive waste. Copies of this report are only available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. ☆

Annual Report Issued on Historic Preservation at Yucca Mountain, NV

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subcontractors are aware of the stipulations and that they participate in the training program.

Dispute Resolution (Stipulation 8)

During the reporting period, no disagreements or objections were registered.

Modification of the Programmatic Agreement (Stipulation 11)

During the reporting period, the Programmatic Agreement was not modified, and modifications are not expected.

Ongoing Work (Stipulation 13)

A number of tasks initiated before or during 1989 will continue into 1990. Preactivity surveys and the monitoring of known archaeological sites remain an essential and ongoing part of the program. The five involved bands of Native Americans not consulted in December 1989 will be convened with DOE representatives in 1990. Consultations with all 16 involved bands on a regular basis are anticipated in the future. The long-range study plan is expected to be finalized, and efforts will continue to coordinate all activities with State officials and appropriate Federal agencies. ☆

DOE/RW-271P

OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

April/May 1990

Bartlett Confirmed as Director of OCRWM

On Apr. 5, 1990, Dr. John W. Bartlett, was confirmed by the U.S. Senate as Director of DOE's Office of Civilian Radioactive Waste Management (OCRWM). Dr. Bartlett had been nominated by President Bush on Jan. 24, 1990 (see OCRWM Bulletin, January 1990). In this post, Dr. Bartlett will direct the program to implement the Nuclear Waste Policy Act of 1982, as amended, to provide for the permanent disposal of high-level radioactive waste. This includes the scientific investigations necessary to determine if the Yucca Mountain, NV, site is suitable for development of a geologic repository, the development of an integral facility for safe interim storage of spent fuel, and development of the requisite system for transportation of spent fuel and high-level waste.

Dr. Bartlett replaces Samuel Rousso, who has served with distinction as the Acting Director of OCRWM since November 1988. Mr. Rousso returns to his previous position as Associate Director for Program Administration and Resources Management.

The first International High-Level Radioactive Waste Management Conference held in Las Vegas, NV, from Apr. 8-12, 1990, provided Dr. Bartlett with the first significant opportunity for a public statement as the new Director of the OCRWM program. Using the forum of the Conference, he outlined his approach to his new responsibilities as follows:

"In brief, the program will become more strongly goal and action oriented. I will discuss four major goals and four major expected actions.

"The first goal is to establish a national consensus on spent fuel management strategy. The Nuclear Waste Policy Act, as amended, provides a broad framework of policy and procedures. Within that broad framework, there are a great many ways to accomplish the mission using existing or advanced technology and system deployment options. A strategy to narrow the options and focus the OCRWM program is needed. With the draft revised Mission Plan as the starting point, we will, through dialogue with interested parties, establish the needed strategy.

"The second goal is to begin receipt of spent fuel in 1998. To meet this goal, we will have to have one or more interim storage locations ready to go in 1998. We will also have to have the transportation system ready to go. The requirements for available storage capacity can be met with dedicated effort. For example, the transport capability can be established by focusing on adoption of proven technologies and experience.

"The critical path for storage capacity is siting of the facility(ies). To achieve timely siting, a solicitation and negotiation approach will be used. The approach will involve negotiation of a package of functions, in addition to storage, with potential hosts. The package might include, for example, transportation system functions and a research and development center. The objective of the approach is, of course, to establish a center of essential waste management services which has tangible, long-range benefits for the host.

"The third goal is to determine, as soon as possible, whether or not the Yucca Mountain site is suitable for a repository. This is the first major milestone along the program path leading to disposal. To meet this goal we will establish and pursue a focused, prioritized site evaluation program endorsed by external peers. We will also assure timely development of

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DOE Holds Yucca Mountain Project Update Meetings

DOE held three Yucca Mountain Project Update Meetings in Nevada during late March and early April. The meetings were a continuation of the DOE commitment to provide Nevada citizens with current information about the repository program. The Update Meetings have been held biannually for the past two years. The meetings have customarily been publicized through newspaper advertisements and notices distributed to the Yucca Mountain Project Office mailing list. The latest series of meetings used radio advertising for the first time.

The first Update Meeting in 1990 was conducted on March 29 in Fallon, about 60 miles east of Reno (Churchill County). A much greater than expected turnout of 175 people strained the capacity of the meeting hall. Another meeting was held in Tonopah (Nye County) on April 12 with about 20 people attending. The final Update Meeting was held in Las Vegas on April 3. Approximately 100 people attended. ☆

DOE Issues Interim Report on National Energy Strategy

At the direction of President Bush, DOE has begun the task of developing a National Energy Strategy by opening a dialogue with the American people. The results of 15 public hearings, 379 witnesses, and more than 1,000 written submissions are conveyed in an Interim Report on the development of the National Energy Strategy. This report summarizes what the American people themselves had to say about problems, prospects, and preferences in energy. All documents, including transcripts of oral testimony and question-and-answer sessions, are available at the U.S. Department of Energy, 1000 Independence Avenue, S.W., Public Reading Room, Room 1E-190, Washington, D.C. 20585.

The report is organized into four subject areas concerning: (1) efficiency in energy use, (2) the various forms of energy supply, (3) energy and the environment, and (4) the underlying foundations of science, education, and technology transfer. Each of these, in turn, is subdivided into sections addressing specific topics. Within each of these sections, the hearing record is organized around a series of *Publicly Identified Goals*. These are followed by *Publicly Identified Obstacles* to achieving the Goals, and *Publicly Identified Options* that were suggested for overcoming the Obstacles. *Publicly Identified Goals* represent views expressed by most witnesses who addressed the topic. However, since not all witnesses agreed, and not all views were presented, the Goals should not be construed as consensus positions. Similarly, the lists of *Publicly Identified Obstacles* and *Options* can, and often do, contain contradictory points of view. DOE has added minimal information to the summary of the public hearing record — and no commentary or conclusions.

The disposal of radioactive waste material is discussed in the report chapter dealing with nuclear power which notes that "The public record on waste management is clear. The proper disposal of radioactive waste material is of the highest priority, regardless of the future of nuclear power, and successful resolution of this problem is essential to any notion of (nuclear power) revival." The topic of radioactive waste material is addressed in depth in the chapter on energy and waste management, and excerpts from the chapter that relate to this subject follow:

"The environmental impacts of nuclear waste disposal were a major topic at the public hearings. Both opponents and proponents of nuclear energy agreed that concerns about the environmental impacts of nuclear waste disposal represent a serious barrier to the continuing contribution of nuclear power and to the possibility of its resuming growth in the mid- to long-term future...

Publicly Identified Obstacles

Societal/Political Obstacles

- Public perceptions of the hazards of nuclear energy, especially nuclear waste, make the acceptance of nuclear energy difficult....There is strong local resistance to the siting of nuclear waste facilities.

- The lack of public confidence in the nuclear industry has increased demands that any new solutions have low risks and be more easily understood.

- DOE has a credibility problem because of the problems or potential problems associated with the operation of its own facilities and because of its inability to site and construct a repository for high-level wastes without schedule slippages....

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Bartlett Confirmed as Director of OCRWM

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suitability evaluation methods and criteria. The criteria will be developed by others, and the evaluation methods will receive external peer review.

"The fourth goal is to secure effective working relationships with external parties who have a stake in the pursuit and success of the OCRWM mission. I am acutely aware that, to a large extent, the success of the mission depends ultimately on others: spent fuel storage will occur in someone's backyard, disposal will occur in someone's backyard, and transport will use the Nation's transportation systems. We will build on this awareness by developing interaction capabilities which provide genuine pre-decisional input opportunities to interested parties and which keep everyone informed of our activities and progress.

"Let me turn now to expected major actions to assure that these goals are met.

"The first major action will be to establish a framework of program policy and principles to implement the national policy and to provide a sound, consistent basis for decisions through time. I have in mind principles such as use of proven, simple technology in order to reduce the number and difficulty of licensing issues. I believe such principles are essential to select and defend our actions, and to find focus in the many options I previously mentioned.

"The second major action will be to take strong initiatives to insure that methods and criteria for demonstrating compliance with regulatory standards are developed and ready when needed. The Department of Energy cannot, within itself, develop such methods and criteria. We can, should, and will, however, proactively suggest approaches and help assure that lack of these methods and criteria does not control program progress.

"The third major action will be to streamline operations in order to improve cost-effectiveness, to improve accountability, and to focus actions on goals and essentials. Over the years, the program has been widely criticized for wasting money and not making progress. Some of that criticism is justified, and some of it is not. I expect to respond to the criticism which is justified.

"An interesting aspect of this effort is that the criticisms carry overtones of need to improve productivity. But how do you measure and control productivity in a program such as this? We're not manufacturing automobiles or razor blades. The usual measure is progress against milestones, but history shows that this approach can have problems. If the milestones are overly ambitious and you fail to meet them, you're in big trouble. More subtle, but equally important, if you meet the milestones but fail in quality, you are also in big trouble.

"The obvious answer on the milestones issue is to set milestones realistically and to meet them with quality results. But there are other potential measures of performance in a program such as this. For example, one possible measure of performance is 'effectiveness in institutional interactions.' Another is 'licensing efficiency through use of proven and simple technology.' Such measures of performance will be developed and included in program management.

"Meeting milestones with quality results is a reflection of good management: doing things right. Institutional leadership and licensing efficiency exemplify leadership: doing the right things. In our improvements to operations, we will address both management and leadership responsibilities.

"The fourth major action will be to significantly improve, in both quantity and quality, interactions with affected parties. The reason for this action is simple: as I previously stated, success in the OCRWM mission ultimately depends, in large measure, on others. We must interact effectively with the affected parties to achieve our results.

"The affected parties include technical, political, socioeconomic, industrial, regulatory, environmental, and citizen interests. The interests of each of these groups must be served, and, as appropriate, they must have the opportunity for participation in pre-decisional activities. These things will happen.

"I believe it is also essential that these affected parties interact with each other as well as with the Department. The viewpoints of the various parties often differ, and it is important that efforts in consensus-building be undertaken, when necessary, in order to have the best possible basis for program action. These interactions will also happen.

"In summary, the program will become more goal and action oriented. Goals to accomplish the OCRWM mission have been set, and actions to meet those goals have been defined. I'm looking forward to making real program progress, and to sharing with you a report on our progress next year at the second annual International High-Level Radioactive Waste Management Conference." ☆

DOE Issues Interim Report on National Energy Strategy

(continued from page 2)

- The cost of energy from nuclear technology may not reflect its full cost, including the costs of waste disposal and decommissioning. As a result, the technology is perceived to enjoy an unfair advantage in competition with other technologies.

- Closing the nuclear waste cycle is an expensive, long-term problem for which some people believe there is no long-term commitment of sustained resources and political resolve.

- Waste disposal has developed significant political and institutional dimensions. Decisionmaking about nuclear power (and especially nuclear waste issues) has become politicized and very difficult because of the emotions involved.

- Many people believe that there is not yet a safe and permanent method for storage and disposal of nuclear waste (which includes concerns over siting, containment, transport, and plant decommissioning). This represents a significant obstacle to the development of nuclear power. Some believe that this is an insurmountable obstacle.

Technical Obstacles

- Environmental and technical controversies surround the current proposed permanent waste repository site in Nevada. Technical evaluations of alternative sites are not being pursued, which could delay a permanent solution to the waste disposal problem if the present site proves unsuitable.
- Many obstacles are associated with decommissioning, and it is likely to be an expensive process.

Publicly Identified Options

Societal/Political Options

- The Monitored Retrievable Storage (MRS) concept could be pursued as an alternative to permanent storage, because MRS could be monitored and it would be possible for people to observe what is happening.

- The price for energy generated by nuclear plants could reflect the true costs of the entire fuel cycle, including decommissioning.

- The problems of dealing with nuclear waste management could be reduced by educating the public and by stressing that waste can be safely isolated from the environment at an acceptable cost.

- Political leaders could be courageous and see beyond the emotions associated with nuclear waste.
- DOE could devote additional resources for understanding and addressing public acceptance and institutional issues. These resources must include a well-trained and qualified staff who can communicate risk and who understand what is required to create institutions and institutional arrangements that are trusted.

- It could be recognized that, due to technical, institutional, and political factors, no long-term nuclear waste management solution will be acceptable to everyone. This would mean planning for a future with no new nuclear powerplants.

Technical Options

- A national repository to isolate high-level nuclear waste could be sited and constructed as expeditiously as possible, consistent with the need to protect human health and the environment.

- Near-term storage and environmental problems of spent fuel storage could be handled by the electric utility industry through a combination of enhanced pool storage and onsite dry-cask storage.

- Research and technology could improve waste disposal technology in the long run. This research and development might include reprocessing, deep sea waste disposal, advanced reactors or accelerators capable of burning nuclear waste and stabilization of it through vitrification or calcination. However, geologic repositories would still be required to dispose of residual wastes.

- Strategies could be developed to prolong the operating life of nuclear fuel in operating reactors to minimize the volumes of spent fuel.

- The United States might develop longer interim storage for nuclear waste (for 200 to 300 years), until radioactive materials decay and become less harmful." ☆

DOE Issues Environmental Field Activity Plan for Soils and Reclamation Feasibility Plan

In keeping with the policy of DOE to conduct its operations in an environmentally safe and sound manner, the Yucca Mountain Project Office has established an environmental program to be implemented during site characterization. This program is described in a document entitled the "Environmental Program Overview" (see OCRWM Bulletin, December 1988). Among the planning documents described in this overview are a Reclamation Feasibility Plan (RFP) and the Environmental Field Activity Plans (EFAPs). As discussed more fully below, the RFP addresses the technical data needs for reclamation, and the EFAP for Soils outlines technical investigations to support reclamation activities and a soil survey.

Reclamation Feasibility Plan

The RFP provides (1) a description of the field work to take place during site characterization, (2) a rationale for the studies proposed, (3) field techniques and methods, (4) equipment and materials required, and (5) quality assurance requirements. The RFP studies are intended to:

- Identify existing disturbed sites in the Yucca Mountain study area;
- Provide data on plant succession at abandoned disturbed sites;
- Provide information on the chemical composition of mined spoils and its potential as a growth medium;
- Determine and test methods of salvaging and stockpiling topsoils to ensure viability of topsoil for reclamation of disturbed areas; and
- Provide quantitative data concerning the success of various reclamation techniques implemented on reclamation trial plots and mined spoils.

Environmental Field Activity Plans

EFAPs have been prepared for various environmental disciplines presenting descriptions of their respective field studies to be conducted during site characterization. Additional EFAPs will be prepared if necessary and existing EFAPs updated in response to additional requirements identified for the Yucca Mountain Project environmental program.

The purpose of the Soils EFAP is to describe the soils studies that will be conducted at the Yucca Mountain site. These soils studies are needed to support the reclamation planning necessary to fulfill regulatory and programmatic requirements. The studies are intended to (1) provide a basic inventory of the soil resource in terms of location and extent of different soils present in the study area, and (2) provide soils data to support any reclamation of areas disturbed by site characterization activities. ☆

Transportation Legislative Data Base Online

The Transportation Legislative Database (TLDB) is an online information service containing detailed information on legislation and regulations regarding the transportation of radioactive materials in the United States. The TLDB contains concise summaries of Federal and State statutes, regulations, and pending legislation concerning the transportation of radioactive materials. The entries are compiled by experienced transportation counsel and indexed according to principal transportation topics.

A personal computer, equipped with a communications modem and terminal emulation software, can be used to query the TLDB directly. Operating instructions and passwords are available on request.

Other TLDB information products that are available at no charge are:

- Legal Developments Reports - Quarterly and annual reports with concise explanations of important legal developments concerning radioactive materials transportation.
- Responses to specific information requests - Customized database searches and printouts.

TLDB issue categories are routing, shipment notification, emergency response, physical protection, driver-operator training, inspection and enforcement, insurance liability, cask design and testing, overweight trucks, transportation operations, regulations, fees, and materials licensing. For more information on the TLDB call Christopher Kouts at (202) 586-9761 ☆

Selected Event Calendar

May 23-25	Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White (301) 492-7288.
June 10-14	American Nuclear Society Annual Meeting, Nashville, TN. Contact Donald B. Trauger, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6254, (615) 576-6730.
July 15-18	Institute of Nuclear Materials Management, Los Angeles, CA. Contact Barbara Scott, (708) 480-9573.

DOE/Nuclear Regulatory Commission Technical Exchanges*

May 30	Regulatory Strategy (Tentative)
June 12-13	Significant Faults—Setback Distance including Technical Assessment Review
June 19	Design Control
July 18-19	Performance Assessment Integration into Site Characterization
July 31	Interactions Meeting
Aug. 15-16	Unsaturated Zone Testing
Sept. 11	Prioritization of Surface-Based Testing
Sept. 12	Exploratory Shaft Facility Alternatives Study

The following meetings are scheduled for October-December 1990, but the dates are to be determined.

Scenario Development and Construction of a Complementary Cumulative Distribution Function

Natural Resources

Radionuclide Retardation Testing and Modeling

** Most DOE/NRC Technical Exchange Meetings will be held at NRC Headquarters, White Flint, MD. For further information concerning these meetings, contact Linda Desell, U.S. Department of Energy, OCRWM, Office of Systems Integration and Regulations, RW-331, 1000 Independence Avenue, S.W., Washington DC 20585, (202) 586-1462.*

For details on DOE/NRC meetings call (1/800) 368-2235 for a recorded message. In the Washington, DC, area call 479-0487.

A telephone recording service has been established for the announcement of upcoming meetings related to the waste management program of the NRC. The number is (1/800) 368-5642, ext. 20436. Washington, DC, area residents should call 492-0436.

For information on meetings and events occuring between issues of the *OCRWM Bulletin* use OCRWM INFOLINK II, an electronic bulletin board that can be accessed through a standard computer communications capability on (615) 482-6982. The *OCRWM Bulletin* is available through INFOLINK II. ☆

New Publications and Documents

"MRS Systems Study, Task F: Transportation Impacts of Monitored Retrievable Storage Facility," BMI/OTSP-07, Brentlinger, L.A., S. Gupta, A.M. Plummer, L.A. Smith, and S. Tzemos, Office of Transportation Systems and Planning, Battelle, Columbus, OH, May 1989.

This report documents the differences in transportation costs and radiological dose under alternative scenarios pertaining to a nuclear waste management system with and without a monitored retrievable storage (MRS) facility, including the effects of various MRS packaging functions and locations.

"Supplement to MRS Systems Study, Task F: Transportation Impacts of a Monitored Retrievable Storage Facility," BMI/OSTP-07S, Office of Transportation Systems and Planning, Battelle, Columbus, OH, January 1990.

This supplement provides an analysis of the operational considerations of an MRS facility and is based on the report BMI/OTSP-07 cited above.

Copies of these publications are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. ☆

DOE/RW-286P

OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

June 1990

OCRWM Director Announces New Management Plan

As a result of management reviews conducted since his appointment as Director of OCRWM, Dr. John W. Bartlett has determined that changes and improvements are needed in the Civilian Radioactive Waste Management Program to more effectively manage the program initiatives announced by Secretary of Energy James D. Watkins last year. To do this, the development of a Management Systems Improvement Plan has been initiated to review and restructure the management systems necessary to implement the Secretary's restructured program presented in the "Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program" (see *OCRWM Bulletin*, November/December 1989).

Areas needing improvement include content and integration of program documents and their use in support of management activities and in support of the DOE Quality Assurance (QA) system. Under the QA program, OCRWM and OCRWM contractor personnel performing quality-affecting work must be certified as being professionally qualified to do their assigned jobs and that QA requirements and procedures are established and acceptable for the work to be done. As part of determining whether programs and program participants are qualified under QA, QA audits are required.

Dr. Bartlett has notified the OCRWM staff that he is postponing QA qualification audits of Headquarters and the Yucca Mountain Project Office until he is satisfied that requisite management systems required to perform and integrate OCRWM activities consistent with program requirements is in place and functioning. However, the ongoing collection of data by Yucca Mountain Project support organizations will not be affected by the audit delay since the QA plans for these organizations have already been approved by DOE for implementation.

The Management Systems Improvement Planning effort will review the content, integration, and utilization of program and project documents and establish the action plan to revise them to reflect the new and reallocated responsibilities within OCRWM including implementation of program and QA requirements.

OCRWM has committed to the NRC that new site investigation work will not begin at the Yucca Mountain investigation site until the program meets the necessary QA Program requirements. Since the State of Nevada has refused to grant the necessary environmental permits for surface-disturbing investigation work, it is unlikely that OCRWM would be permitted to begin new site investigation work before the end of the year.

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Nuclear Waste Negotiator Nominated by President

On June 4, 1990, the President announced his intention to nominate David H. Leroy to be Nuclear Waste Negotiator. Currently Mr. Leroy serves as an Attorney with Leroy Law Offices in Boise, ID. Prior to this, he served as Lieutenant Governor of Idaho, 1983-1987; and Idaho Attorney General, 1979-1983. Mr. Leroy was graduated from the University of Idaho (B.S., 1969; J.D., 1971) and New York University School of Law (M.L., 1972).

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Bartlett Meets with Radiation Control Program Directors

On May 6, 1990, Dr. John W. Bartlett, Director of OCRWM, attended the 22nd Annual Meeting of the Conference of Radiation Control Program Directors in Salt Lake City, UT. At this meeting, he discussed the Secretary of Energy's review and redirection of the OCRWM program, as well as the major goals and actions that he, as new Director of OCRWM, will pursue (see *OCRWM Bulletin*, April/May 1990). In his remarks, special emphasis was placed on transportation issues. These are excerpted below:

"I know that the development of a transportation system to support our waste-management operations is one of the central concerns of your organization. For the past three years, commercial spent fuel shipments have averaged approximately 24 U.S. shipments per year. In 1998, we project approximately a 4-fold increase, to about 100 commercial spent fuel shipments to move about 400 metric tons of spent fuel. The shipment rate could increase to up to 1,000 per year during full operation of a repository. In light of this projected increase in rail and truck transport, I would like to discuss our plan for assuring safety in these operations.

"It is our plan that the transportation system will have shipping capability to support waste acceptance at an MRS facility by 1998. We will integrate transportation considerations with the needs of the waste-management system. Interaction between the Department, utilities, and other interested parties, such as yourselves, will be helpful in determining the sites to be served; the quantities, types, and characteristics of spent fuel to be delivered; delivery dates; and the transportation equipment and interfacing hardware and software to be used.

"We will be undertaking a variety of activities in our continuing commitment to transportation safety. For example, we are conducting an assessment of the transportation infrastructure near reactor sites, for both rail and highway modes of transport. The DOE is looking carefully at its emergency response capabilities, including our ability to respond at fixed locations as well as reviewing other supplemental actions the Department could take to respond to a transportation incident. OCRWM will take a proactive approach to emergency preparedness by providing additional resources and assistance before and during shipments.

"We will be undertaking a variety of activities to ensure that spent fuel and high-level radioactive waste will be transported safely. To ensure that the transportation system is ready to support waste-management operations, we are developing the casks and ancillary equipment needed for transporting spent fuel in accordance with applicable Federal regulations. The designs of the casks will be certified by the NRC, and we are, therefore, working with the NRC to address cask certification issues. In addition, we are developing plans for transportation support facilities and for the operation of the transportation system. The Department will also continue to work closely with interested parties to address the issues involved in developing the transportation system, such as the designation of preferred routes and training for emergency response.

"Before the Department begins transporting waste, we will provide technical assistance and funds to States and Indian Tribes for training of public safety officials in local governments through whose jurisdictions the waste may be transported. We plan to start providing such assistance after the potential transportation routes have been identified, within three to five years of the time waste shipments will begin. This timing is based on the need to determine the site of the MRS facility and its effect on routing options; the potential for changes in available highways and rail lines; and the need to schedule training programs for personnel who will be directly involved with emergency response, inspection, and enforcement. Our transportation institutional program, which is in preparation, is aimed at the identification and resolution of institutional issues with the participation of all affected parties.

"We solicit your expert advice to help us correctly identify and resolve institutional issues. Your knowledge of the issues and sensitivities within your areas of jurisdiction will be invaluable in enabling us to forge a regional and national transportation strategy that best serves the needs of all affected parties."☆

DOE Petitions the Nuclear Regulatory Commision for a Rulemaking to Establish Accident Dose Criteria for a Geologic Repository for High-Level Radioactive Waste

DOE will be the licensee of the Nuclear Regulatory Commission (NRC) for a geologic repository developed in accordance with the Nuclear Waste Policy Act, as amended. As such, it will be subject to the requirements in Title 10 of the Code of Federal Regulations Part 60 (10 CFR Part 60). This regulation requires that the Safety Analysis Report for a repository include a description and analysis that considers "the adequacy of structures, systems and components provided for the prevention of accidents and mitigation of the consequences of accidents, including those caused by natural phenomena." However, the regulation does not provide numerical dose criteria for use in identifying the need for engineered safety features and for determining their adequacy.

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DOE Petitions the Nuclear Regulatory Commision for a Rulemaking to Establish Accident Dose Criteria for a Geologic Repository for High-Level Radioactive Waste

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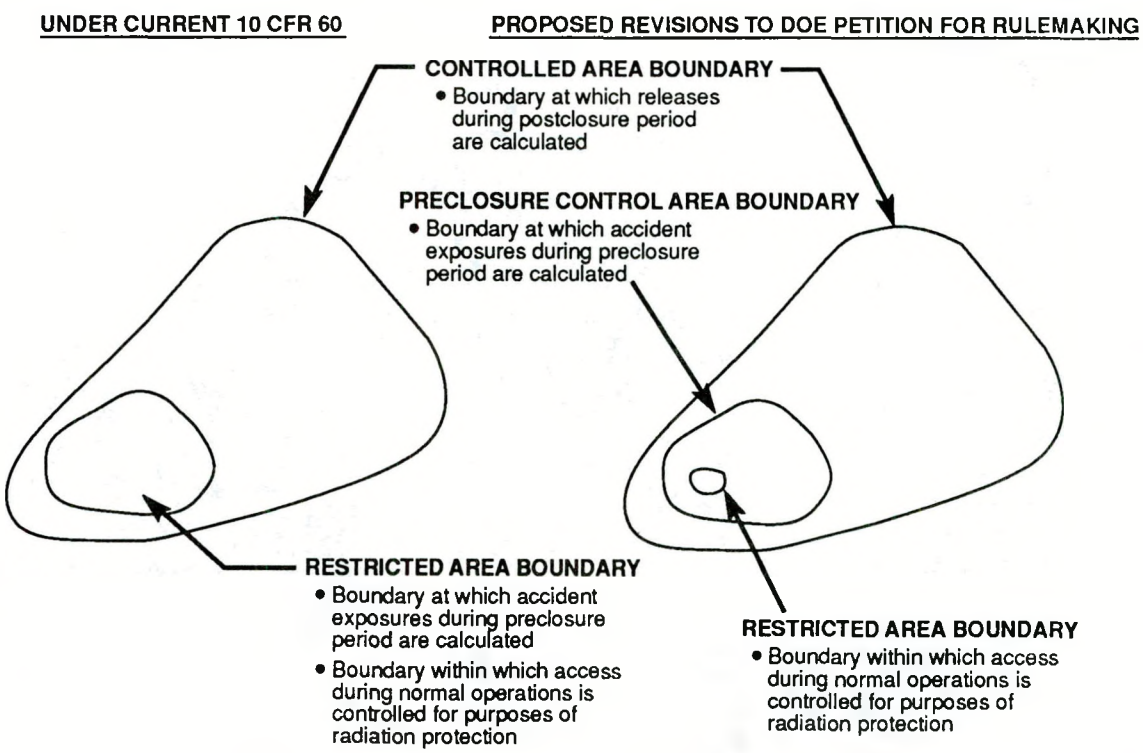
During the advanced conceptual design of the repository, DOE will explore design alternatives, ultimately arriving at firmly fixed and redefined design criteria and concepts, with further detail to be provided in later design efforts. The absence of accident dose criteria creates uncertainty about how the adequacy of structures, systems, and components will be determined by NRC during the licensing phase, and could result in major redirection of design efforts and possibly affect the schedule for development of a geologic repository.

For these reasons, on Apr. 19, 1990, DOE requested that the NRC amend 10 CFR Part 60 to include proposed quantitative accident dose criteria* and pertinent definitions to facilitate application of the criteria. In support of the proposed rulemaking, the petition notes that there exists a considerable body of knowledge and experience in the type of handling operations that will occur at a repository, and the proposed criteria are within the range of accident dose criteria established by the NRC for similar activities and would provide adequate protection of public health and safety.

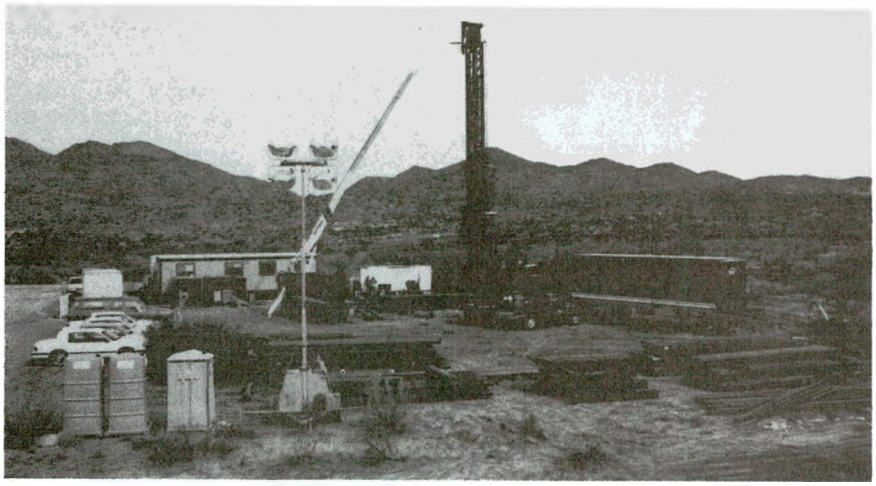
DOE has also proposed that the accident dose criteria be applied at the boundary of a newly defined preclosure control area. Regulations for nuclear facilities typically require that there be an area established over which control can be exercised in case of an accident. In case of a radiological accident, the area within which public access is to be controlled is desired to be large, since distance provides added protection independent of design features. In contrast, for practical purposes, the area controlled during normal operations is usually maintained as small as practicable. However, the restricted area defined in 10 CFR Part 60.2 is used for both purposes and results in an area that is unnecessarily large for application of normal access controls and radiological monitoring. To reduce this area to a more appropriate size, DOE is proposing to establish separate boundaries for the two controlled zones (i.e., accident and routine access control). By making this distinction, DOE will be in a better position to apply the controls needed to ensure a proper and practical level of radiation protection for routine operations. The figure below illustrates the differences between the boundaries which would be proposed and the current boundaries defined in the regulation. For further information, contact Corinne Macaluso at (202) 585-2837. ☆

* The accident dose criteria proposed by DOE are 5 rem effective dose equivalent with a limit of 50 rem on the committed dose equivalent to any organ. These criteria would apply to any individual at the boundary of a newly defined "preclosure control area" at any time until repository closure is completed. For further information on radiation, see *OCRWM Backgrounder* DOE/RW-0167, Revision 1, "Radiation and High-Level Nuclear Waste."



Comparison of Current and Proposed Boundaries

Report on Testing of Prototype Dry Drilling and Coring Equipment



Prototype drill site at Apache Leap, AZ, showing drill rig, dual-wall drill pipe, and trailers for spare parts, core logging, and offices.

Testing of prototype dry drilling and coring equipment is under way at Apache Leap, AZ, in order to determine if such equipment can be used in scientific investigations to determine if Yucca Mountain, NV, is a suitable site for a high-level nuclear waste repository. This equipment requires prototype testing because no one in the drilling industry has previously had the requirement for drilling and coring equipment to perform under the scientific constraints (at depths greater than 1,000 feet) to be applied in site characterization.

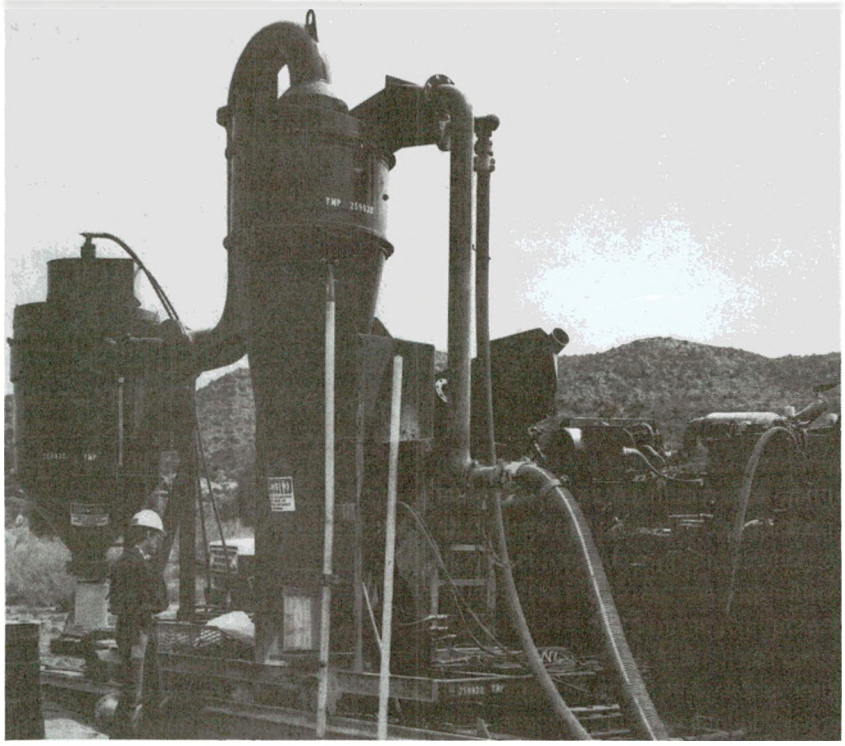
The overall objective of the current phase of the prototype drilling program is to determine if the prototype air drilling and coring equipment that has been specially designed and fabricated for the Yucca Mountain Project can obtain core from the depths required (almost 3,000 feet), and leave the borehole in such a condition that the logging and testing programs described in the Site Characterization Plan (SCP) can be successfully carried out. The prototype program will not be used to obtain site characterization data because it is not on the candidate repository block (see article "DOE Sues Nevada for Blocking Mandated Scientific Studies," *OCRWM Bulletin*, January 1990).

The Apache Leap drilling program is the third test of the prototype equipment. Changes have been made to the tools based on each of the previous tests. The primary objective of the current test is the determination of drilling, coring, and trip times along with bit life, so that a drilling schedule can be developed to determine the time required to complete the drilling requirements outlined in the SCP. The second objective is to compare the geophysical log quality from two different sizes of boreholes in order to determine the need for different size boreholes. A third, and continuing, objective is the establishment of efficient methods and procedures for the acquisition of samples while minimizing contamination and maximizing quality of the borehole.

In pursuit of these objectives, prototype drilling uses an open center roller core reaming bit attached to a dual wall pipe inside of which a coring system is lowered to obtain core samples. The drill pipe acts as a protective casing to protect the core rod from the formation, and to protect the formation from the high pressure air and cuttings produced by the coring operation. The sequence of prototype drilling generally involves the following steps: (see figures on page 5.)

- After the dual wall pipe reams down the core track from a previous core run and is left on the bottom to resume coring operations, the core rod is lowered in the hole inside the dual wall pipe.

(continued on page 5)



Close-up of the dust suppression and alternate sample collecting system. The dust collection cyclone is on the left, and the sampling cyclone is on the right.

Report on Testing of Prototype Dry Drilling and Coring Equipment

(continued from page 4)

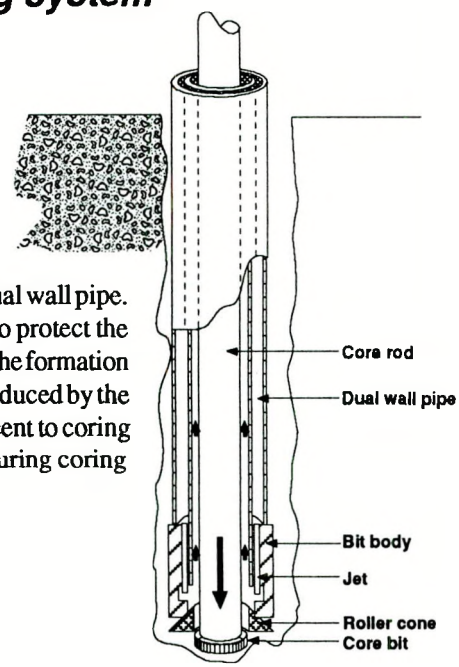
- Coring operations are begun, and the core rod is advanced 40 feet ahead of the dual wall pipe in 10 foot increments. At the end of each 10 foot cored interval the core is broken just above the core bit and retrieved by a wireline.

- The sequence is repeated each time the core track is advanced 10 feet. The core rod is left in the hole for the duration of the 40 foot core run. When this is completed, the coring equipment is pulled out of the hole in preparation for reaming down the core track with the dual wall pipe and the beginning of the next cycle.

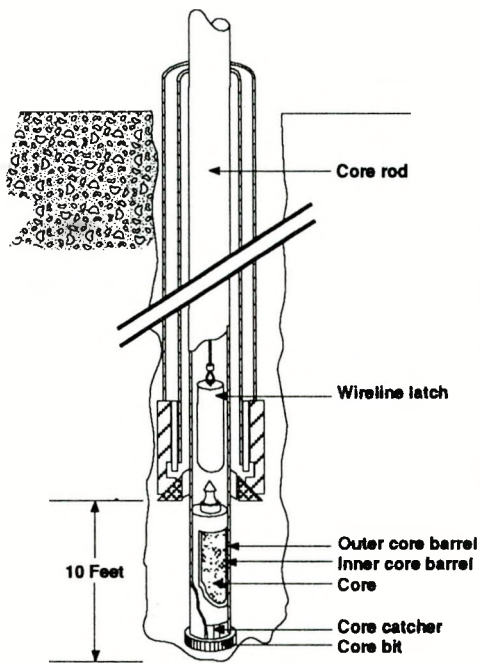
After completion of the drilling, the holes will be plugged and the locations reclaimed as soon as possible for return to the forest service who controls most of the area of interest as National forest land.

For further information on the drilling at Apache Leap, contact Stephan Brocoum at (202) 586-7346 or Uel Clanton at (702) 794-7943. ☆

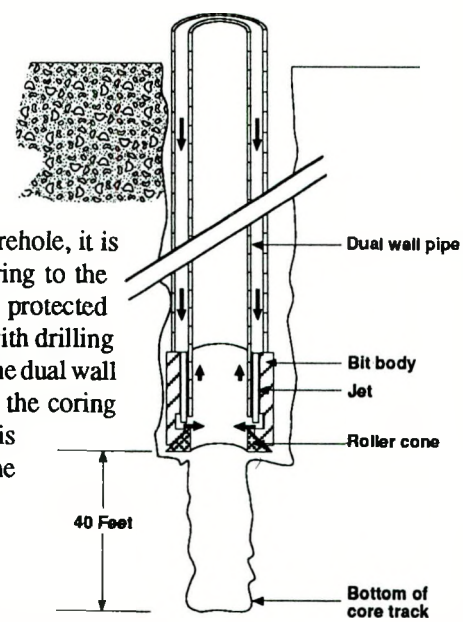
Dual wall drilling/coring system



The core rod is run in the hole inside the dual wall pipe. The drill pipe acts as a protective casing to protect the core rod from the formation and to protect the formation from the high pressure air and cuttings produced by the coring operation. Arrows inside and adjacent to coring assembly indicate direction of air flow during coring operations.



At the end of each 10 foot cored interval the core rod is picked up slightly and the core is broken by the core catcher just above the core bit. The catcher is a device which allows the core to enter the inner barrel but prevents it from backing out. A wireline latch is then run inside the core rod and the top of the inner barrel is "caught" with the wireline.



Once the coring assembly is out of the borehole, it is drilled/reamed with the dual wall drill string to the bottom of the core track. The formation is protected from contamination normally associated with drilling by circulating the cuttings up the center of the dual wall pipe. Contaminated formation caused by the coring operation is removed when the core track is reamed down. The bold arrows indicate the direction of air flow during reaming.

Annual Capacity Report for 1989 Will Not Be Published

DOE has informed all parties to the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste that the Department of Energy will not issue an Annual Capacity Report (ACR) for 1989.

During the preparation of the 1989 ACR, the Secretary of Energy directed an extensive review of the Civilian Radioactive Waste Management Program, including a thorough and comprehensive assessment of the program schedule to determine what is realistically achievable. On Nov. 29, 1989, the results of that review were published in a report to Congress (see *OCRWM Bulletin*, November/December, 1989).

The revised schedule shows a significant slip for the expected start of repository operations — from the year 2003 to approximately 2010. The report also details the initiation of a three-point action plan for moving the Program forward, including the restructuring of OCRWM, initiatives to gain access to the Yucca Mountain site, and an initiative for establishing monitored retrievable storage capability with a target for spent fuel acceptance in 1998.

In view of the above, DOE has determined that publishing the ACR prior to developing revised waste acceptance schedules would not be useful for planning purposes. DOE expects to resume publication of the ACR as soon as revised waste acceptance schedules have been developed.

For further information, contact Alan Brownstein at (202) 586-1652. ☆

Nuclear Waste Technical Review Board Announces Panel Changes

To facilitate its responsibilities under the Nuclear Waste Policy Act, as amended, the Nuclear Waste Technical Review Board (NWTRB) has made a change in panel assignments. The Container and Transportation Panel has been split into the Transportation Panel and the Engineered Barrier System Panel. A new panel, the Quality Assurance Panel, was created.

The NWTRB panels are now constituted as follows:

1. Engineered Barrier System
   Chairman: Dr. E. D. Verink*
   Members: Dr. D. L. Price
   Dr. D. L. Langmuir
   Ex Officio: Dr. D. U. Deere

2. Environment and Public Health
   Chairman: Dr. M. W. Carter
   Member: Dr. J. E. Cantlon
   Ad Hoc: Dr. D. W. North
   Ex Officio: Dr. D. U. Deere

3. Hydrogeology and Geochemistry
   Chairman: Dr. D. L. Langmuir
   Ad Hoc: Dr. C. R. Allen
   Ex Officio: Dr. D. U. Deere

4. Quality Assurance
   Chairman: Dr. J. E. Cantlon
   Members: Dr. C. R. Allen
   Dr. M. W. Carter
   Ad Hoc: Dr. D. L. Langmuir
   Ex Officio: Dr. D. U. Deere

5. Risk and Performance Analysis
   Chairman: Dr. D. W. North*
   Ad Hoc: Dr. J. E. Cantlon
   Dr. D. L. Price
   Dr. E. D. Verink
   Ex Officio: Dr. D. U. Deere

6. Structural Geology and Geoengineering
   Chairman: Dr. C. R. Allen
   Member: Dr. D. U. Deere

7. Transportation
   Chairman: Dr. D. L. Price*
   Members: Dr. M. W. Carter
   Dr. E. D. Verink
   Ex Officio: Dr. D. U. Deere

For further information, contact Paula Alford, Director of External Affairs, Nuclear Waste Technical Review Board, 1111 18th Street, N.W., Suite 801, Washington, DC 20036, (202) 254-4792. ☆

* Reappointments in progress

OCRWM Director Announces New Management Plan

(continued from page 1)

Therefore, postponing the audits and getting the management of the program back on track will not affect major program milestones and, in fact, should enhance the program's ability to effectively carry out the Congressional mandate for developing a safe and environmentally acceptable U.S. disposal system for spent fuel and high-level nuclear waste.

The Management Systems Improvement Plan is expected to be established by mid-June and will be implemented thereafter. ☆

Selected Event Calendar

June 28-29 Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White (301) 492-7288.

Jul. 15-18 Institute of Nuclear Materials Management Annual Meeting, Los Angeles, CA. Contact Barbara Scott, INMM, 60 Revere Drive, Suite 500, Northbrook, IL 60062, (708) 480-9573.

Jul. 18 Nuclear Regulatory Commission/Department of Energy Meeting with Babcock & Wilcox on the BR-100 Cask, One White Flint North, 11555 Rockville Pike, Rockville, MD, Room 6-B-11, 8:30-11:30 a.m. Contact Earl Easton (301) 492-0462.

Jul. 23-26 Nuclear Waste Technical Review Board: Structural Geology and Geoengineering Panel, Westin Peachtree Plaza Hotel, Atlanta, GA. Contact Paula Alford, Director, External Affairs, 1111 18th Street, N.W., Suite 801, Washington, DC 20036, (202) 254-4792.

Jul. 30-31 Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White (301) 492-7288.

Aug. 5-10 National Conference of State Legislatures Annual Meeting, Nashville, TN. Contact T. Dwight Connor (303) 623-7800.

Oct. 3-5 Spectrum '90, Nuclear and Hazardous Waste Management International Topical Meeting, Knoxville, TN. Contact Earl McDaniel at (615) 574-0439 or Karl Notz (615) 574-6632.

DOE/Nuclear Regulatory Commission Technical Exchanges*

Jul. 18-19 Performance Assessment Integration into Site Characterization

Aug. 15-16 Unsaturated Zone Testing

Sept. 11 Prioritization Surface Based Testing

Sept. 12 Exploratory Shaft Facility Alternative Study

Oct.-Dec. Scenario Development and Construction of a Complementary Cumulative Distribution Function (CCDF)

Oct.-Dec. Natural Resources

Oct.-Dec. Radionuclide Retardation Testing and Modeling

** Most DOE/NRC Technical Exchange Meetings will be held at NRC Headquarters, White Flint, MD. For further information concerning these meetings, contact Linda Desell, U.S. Department of Energy, OCRWM, Office of Systems Integration and Regulations, RW-331, 1000 Independence Avenue, S.W., Washington DC 20585, (202) 586-1462.*

For details on DOE/NRC meetings call (1/800) 368-2235 for a recorded message. In the Washington, DC, area call 479-0487.

A telephone recording service has been established for the announcement of upcoming meetings related to the waste management program of the NRC. The number is (1/800) 368-5642, ext. 20436. Washington, DC, area residents should call 492-0436.

For information on meetings and events occuring between issues of the *OCRWM Bulletin* use OCRWM INFOLINK II, an electronic bulletin board that can be accessed through a standard computer communications capability on (615) 482-6982. The *OCRWM Bulletin* is available through INFOLINK II.

New Publications and Documents

Newly Issued OCRWM Backgrounders

The OCRWM Cask Systems Development Program is designing a variety of casks to safely transport radioactive waste from the generator sites to a geologic repository or a monitored retrievable storage facility. Five contracts have been awarded—three to develop rail/barge casks and two for legal-weight truck casks. As of December 1989, all five cask contractors had submitted preliminary designs to OCRWM. This series of *Backgrounders* describes these designs. For further information or copies of the *Backgrounders*, write to Information Services Division, Office of Civilian Radioactive Waste Management, U.S. Department of Energy, Mail Stop RW-43, Washington, DC 20585.

"Cask Systems Development: Titan Truck Cask," DOE/RW-0255

"Cask Systems Development: NuPac 140-B Rail/Barge Cask," DOE/RW-0256

"Cask Systems Development: BR-100 Rail/Barge Cask," DOE/RW-0257

"Cask Systems Development: GA-4 & GA-9 Truck Cask," DOE/RW-0258

"Cask Systems Development: NAC-CTC Rail/Barge Cask," DOE/RW-0259 ☆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OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

July/August 1990

DOE Announces Proposed Reorganization of the Office of Civilian Radioactive Waste Management

Dr. John W. Bartlett, Director of OCRWM, has announced and implemented a proposed reorganization of the OCRWM program that is "designed to provide clear lines of responsibility, authority and accountability of the program and its contractors." Dr. Bartlett stated that the reorganization "focuses on more effective implementation of the major elements of the Nuclear Waste Policy Act of 1982, as amended, and provides a clear separation of the Headquarters' policy and guidance role and the field implementation role."

The reorganized OCRWM, as shown in the figure on page 2, moves away from a matrix organization which has existed over the past two years. Representative key functions of the components are described below. The proposed organization and staffing assignments will be formalized upon completion of required administrative actions.

- *Office of Geologic Disposal* (Carl Gertz)

- Program and regulatory requirements implementation
- Geologic disposal program management
- Technical and institutional interface with the State of Nevada, political subdivisions, and other cognizant organizations
- Technical interface with the Nuclear Waste Technical Review Board, Nuclear Regulatory Commission, Advisory Committee on Nuclear Waste, National Academy of Science, and the Environmental Protection Agency
- Management and Operating and other contract technical management
- Yucca Mountain project management
- Quality management

- *Office of Storage and Transportation* (Vacant)

- Management and Operating and other contract technical management
- Program and regulatory requirements implementation
- Monitored Retrievable Storage, transportation and cask development project management
- Technical and institutional interface with States, political subdivisions, and other cognizant organizations
- System logistics development
- Waste generator technical interface
- Waste acceptance system development
- Utility contract management
- Fee verification
- Quality management

- *Office of Systems and Compliance* (Dwight Shelor)

- Nuclear Regulatory Commission interface
- Regulatory requirements development and compliance oversight
- Alternate licensing strategy development
- Systems engineering requirements development and compliance oversight
- Program configuration management
- Interface with Nuclear Waste Technical Review Board
- Quality management

- *Office of Contractor Business Management* (Franklin Peters, Deputy Director, OCRWM [Acting])

- Management and Operating contract and other contract business management
- Consolidation plan implementation

(continued on page 2)

In This Issue . . .

NOTE TO READERS: The *OCRWM Bulletin* is available to users of INFOLINK II about one week before publication. To be placed on the mailing list, to make any address corrections, or to request multiple copies of the *OCRWM Bulletin*, please contact Judy Hockenberry, MA-234-2, DOE, Germantown Building, Washington, DC 20545, (301) 353-3118.

Published by the U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM)
For further information about the national program or for copies of new OCRWM publications and documents listed in the *OCRWM Bulletin* contact the U.S. Department of Energy, OCRWM, Office of External Relations and Policy, Mail Stop RW-40, 1000 Independence Avenue, SW, Washington, DC 20585, (202) 586-5722. The *OCRWM Information Services Directory* is available to provide sources of program information.

DOE Announces Proposed Reorganization of the Office of Civilian Radioactive Waste Management

(continued from page 1)

- Liaison with DOE procurement office
- Quality management

• *Office of Program and Resources Management* (Samuel Rousso)

- Information resources management
- Waste Management System cost model development
- Document control and records management
- Licensing support system development
- Budget formulation, execution and management
- Nuclear Waste Fund investments
- Program and project management requirements development and compliance oversight
- Administrative support
- Human resources acquisition and development
- General Accounting Office and Inspector General liaison
- Quality management

• *Office of External Relations* (Jerome Saltzman)

- Program communication
- Technical and institutional integration
- Program relations
- Educational institution program development
- Quality management

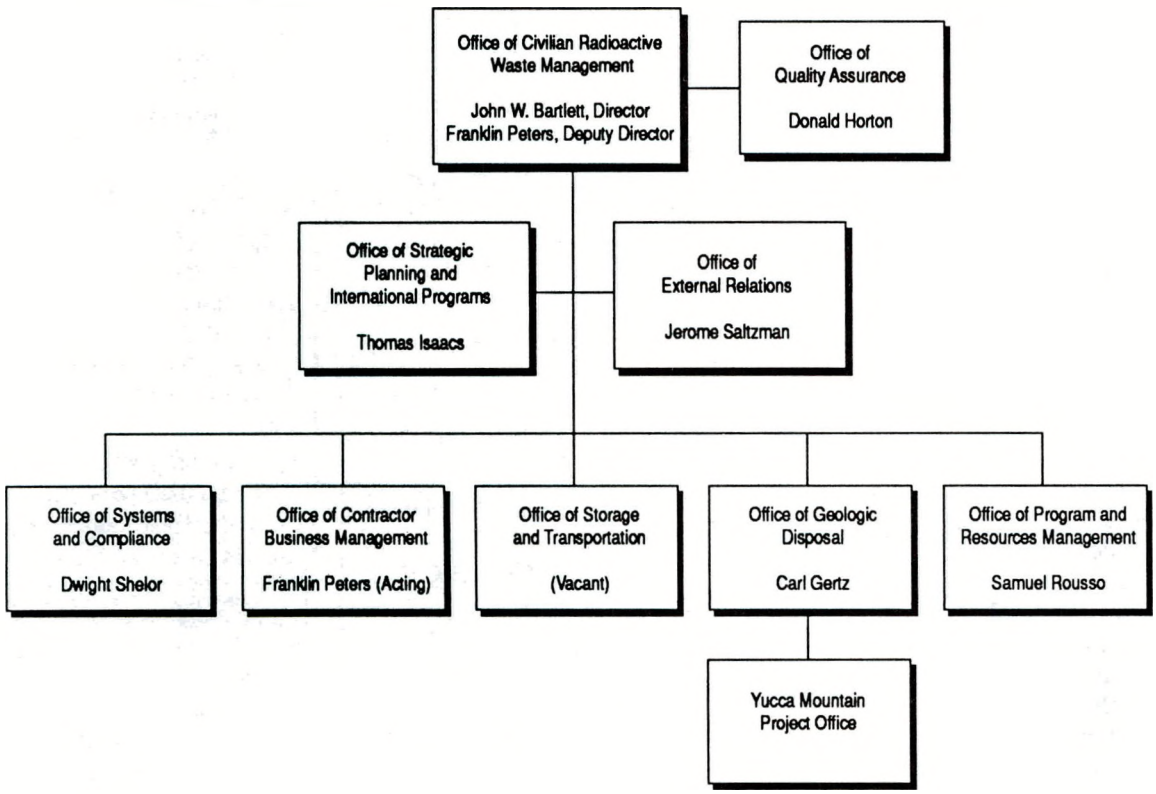
• *Office of Strategic Planning and International Programs* (Thomas Isaacs)

- Mission, strategic, and contingency planning
- Perceived risk management and communication program development
- International program development
- Nuclear Waste Negotiator interface
- Quality management

• *Office of Quality Assurance* (Donald Horton)

- Nuclear Regulatory Commission interface
- Quality assurance requirements development and compliance oversight
- Quality assurance audits and surveillances
- Allegations management program implementation
- Quality management ☆

(Proposed) Reorganization
Office of Civilian Radioactive Waste Management



DOE Receives National Research Council Report on "Rethinking High-Level Radioactive Waste Disposal"

DOE believes that the National Research Council's Board on Radioactive Waste Management has made an important contribution to progress in managing and disposing of high-level radioactive waste in the United States by issuing their report on "Rethinking High-Level Radioactive Waste Disposal."

The National Research Council is the operating arm of the National Academy of Sciences and the National Academy of Engineering. The Council report reflects the proceedings of a colloquium held in July 1988 which was sponsored by the Council's Board on Radioactive Waste Management. The Board invited representatives from key Government agencies, the academic community, and foreign programs to join them.

The Board's conclusions are explicit or implicit throughout this document, as are many of the actions it would recommend. These recommendations are summarized below:

"1. Congress should reconsider the rigid, inflexible schedule embodied in the Nuclear Waste Policy Act and the 1987 amendments. It may be appropriate to delay the licensing application or even the scheduled opening of the repository, until more of the uncertainties can be resolved. The Secretary of Energy's recent announcement of a more realistic schedule, with the repository opening in 2010 rather than 2003, is a welcome step.

"2. The Environmental Protection Agency (EPA), during its revision of the remanded 40 CFR Part 191, should reconsider the detailed performance standards to be met by the repository, to determine how they affect the level of health risks that will be considered acceptable. In addition, EPA should reexamine the use of quantitative probabilistic release criteria in the standard and examine what will constitute a reasonable level of assurance (i.e., by what combination of methods and strategies can DOE demonstrate that those standards will be met?). All other countries use only a dose requirement. In setting regulatory standards and licensing requirements, the EPA should consider using only dose requirements.

"3. The U.S. Nuclear Regulatory Commission (USNRC), likewise, should reconsider the detailed licensing requirements for the repository. For example:

- What level of statistical or modeling evidence is really necessary, obtainable, or even feasible?
- To what extent is it necessary to prescribe engineering design, rather than allowing alternatives that accomplish the same goal?
- What can be done to accommodate design changes necessitated by surprises during construction?
- What new strategies (e.g., engineered features like copper containers) might be allowed or even encouraged as events dictate?

"4. The Department of Energy, for its part, should continue and also expand its current efforts to become a responsive player in these regulatory issues. The following activities should be included:

- publicly negotiated prelicensing agreements with the USNRC on how to deal with the high levels of uncertainty arising from numerical predictions of repository performance;
- publicly negotiated prelicensing agreements with the USNRC on improved strategies for performance assessment;
- active negotiations with EPA and the USNRC on the real goals and precise definitions of their standards and requirements;
- an extramural grant program, in cooperation with the National Science Foundation, for the development of improved modeling methodology, in combination with training programs and public education efforts;
- expanded use of expert scientists from outside the program to review and critique detailed aspects and to provide additional professional judgment;
- greatly expanded risk communication efforts, aimed at reaching appropriate and achievable goals acceptable to the U.S. public;
- meaningful dialogue with State and local governments, Indian tribes, environmental public interest groups, and other interested organizations.

"5. The Department of Energy should make greater use of conservative engineering design instead of unproven engineering design based on scientific principles.

"6. The Department of Energy should participate more actively in international studies and forums, such as those sponsored by the International Atomic Energy Agency, the Nuclear Energy Agency, and the Commission of European Communities, and should subject its plans and procedures to international scientific review, as Sweden, Switzerland, and the United Kingdom have already done.

"7. Although geologic disposal has been the national policy for many years, and the Board believes it to be feasible, contingency planning for other sites and options (for example Subseabed Disposal of spent fuel and high-level radioactive waste) should be pursued. The Nation, the Congress, the federal government, utilities, and the nuclear industry should recognize the importance of contingency planning

(continued on page 6)

OCRWM Director Speaks Before Institute of Nuclear Materials Management

On July 16, 1990, Dr. John W. Bartlett addressed the 31st Annual Meeting of the Institute of Nuclear Materials Management (INMM) in Los Angeles, CA. At this meeting, he discussed the Secretary of Energy's review and redirection of the OCRWM program, as well as the major goals and actions that he, as Director of OCRWM, will pursue (see OCRWM Bulletin, April/May 1990). In his remarks, special emphasis was placed on the general role of technical societies in the program and the special role that INMM could play. These are excerpted below:

"Sometimes concern may be expressed that there are too many technical societies involved in the program. We do not agree with this view. We believe that every technical society that has a legitimate interest in the subject can make a contribution to the successful management of radioactive wastes. Even if there is some overlap in activity among the professional societies, such should produce no adverse effects. We can use all hands possible to effect a reasonable and timely resolution of the waste management problem....With regard to working together, let me discuss briefly some technical areas of common interest....

"Just as surely as we want to prevent the unauthorized diversion of special nuclear material, we want to prevent the release of radionuclides to the environment. We have no means of assuring ourselves, quantitatively that neither has happened. Thus, we must rely on mathematical modeling and probability assessments to achieve the required levels of assurance...

"The demonstration that a geologic repository will be able to meet these limits (Environmental Protection Agency minimum performance limits for the release of radionuclides from a geologic repository) with any reasonable measure of assurance depends on the knowledge of the repository system design, and characteristics of the geologic media and the site where it is located. Obviously, a vast amount of quality technical data will have to be collected regarding mechanisms through which radionuclides might be solubilized while in the repository and regarding the mechanism of transport through the geologic medium....This data will have to analyzed mathematically to establish the probability that unacceptable quantities of radionuclides will be released from the repository...

"It seems clear to me that the significant capability of many members of the Institute in the field of statistics and mathematical modeling could prove invaluable to the OCRWM program in its difficult task of predicting the extent of radionuclide retention in a geologic repository. I would encourage the Institute to consider how the capabilities of its membership could be brought to bear on this problem..." ☆

Nuclear Waste Technical Review Board (NWTRB) Items of Interest

NWTRB Transportation Panel Focuses on Transportation Issues at First Public Hearing

Amargosa Valley in Nye County, Nevada, will be the location of the NWTRB Transportation Panel's first public hearing on issues pertaining to the transportation of spent fuel and high-level nuclear waste. The hearing is scheduled to take place on Friday, Aug. 17, 1990, from 12:00 noon until 9:00 p.m. at the Multipurpose Building. Those wishing to participate in the hearing may do so by (1) preparing written testimony in advance of the hearing and presenting it to the Panel, (2) speaking briefly before the Panel on a walk-in, first-come, first-served basis after signing up at the Amargosa Valley Multipurpose Building, (702) 372-5459, the day of the hearing beginning at 12:00 noon, or (3) submitting a written statement for the record by Nov. 30, 1990.

As part of its study of nuclear waste transportation safety issues, the Transportation Panel intends to hold several public hearings over the next two years in various locations around the country. Locations will be selected in regions that may see significant waste transport activity once a nuclear waste disposal program becomes operational.

The NWTRB invites interested persons to present their concerns to the Transportation Panel at the August 17 public hearing. To accommodate those wishing to speak, a time limit based on the number of requests received will be placed on all presentations. A transcript of the hearing will be made.

For further information contact Ms. Paula N. Alford, Director, External Affairs, Nuclear Waste Technical Review Board, 1100 Wilson Boulevard, Suite 910, Arlington, VA 22209; (703) 235-4473.

Packaging of Spent Fuel First Topic Examined by New NWTRB Panel

The recently formed Engineered Barrier System Panel of the NWTRB will hold its first meeting on Aug. 28-29, 1990, at the Pleasonton Hilton, Pleasanton, CA. Members will be briefed by DOE staff on work in progress to study and develop ways to package for permanent disposal the Nation's commercial spent fuel.

(continued on page 5)

DOE Selects TRW Environmental Safety Systems for Negotiations Leading to Award of OCRWM Management and Operating Contract

DOE will begin negotiations with TRW Environmental Safety Systems, Inc. (TRW), leading to a possible contract for systems engineering, development, and management of the Nuclear Waste Management System for OCRWM. The purpose of the negotiations with TRW is to determine if a mutually satisfactory contractual agreement can be achieved.

The selection of TRW is consistent with the August 1989 order of the U.S. Claims Court which enjoined DOE from awarding this Management and Operating (M&O) contract, under the solicitation issued by DOE in February 1988, to anyone other than TRW. Bechtel Systems Management, Inc. (BSMI) was originally selected in December 1988. However, before the contract could be awarded to BSMI, TRW (one of the other bidders) challenged the procurement action in a lawsuit which resulted in the injunction.

DOE had previously filed a Notice of Appeal from the Claims Court decision. However, the delays and uncertainties inherent in pursuing an appeal have led DOE to conclude that it should seek to advance the OCRWM program, if possible, by undertaking negotiations under the solicitation consistent with the directive of the Claims Court. ☆

Nuclear Waste Technical Review Board Items of Interest

(continued from page 4)

On Tuesday, Aug. 28, 1990, presentations will focus on DOE's strategy for development of packaging for spent nuclear fuel and high-level waste, including alternative packaging approaches and DOE's plans to implement the strategy. In the afternoon, representatives from the Lawrence Livermore National Laboratory and the Savannah River Laboratory will present information on important topics in developing waste packaging for defense high-level waste. Topics will include an overview of characterization and qualification activities for the high-level waste produced by the Defense Waste Processing Facility and West Valley Demonstration Plant, and glass dissolution studies in saturated and unsaturated environments.

On Wednesday, Aug. 29, 1990, DOE will brief the panel on current spent fuel studies, including information on the fuel's cladding, and the oxidation and dissolution of spent fuel. The afternoon session will focus on DOE's methods for gathering data on the characteristics of spent fuel. The public is welcome to attend.

Transcripts will be made available on loan beginning Sept. 18, 1990, on a first-come, first-served basis from the NWTRB. For further information, contact Paula N. Alford, Director, External Affairs, 1111 Wilson Boulevard, Suite 910, Arlington, VA 22209; (703) 235-4473.

NWTRB Relocates

Effective June 25, 1990, the Nuclear Waste Technical Review Board relocated to 1100 Wilson Boulevard, Suite 910, Arlington, VA 22209. Their new telephone number is (703) 235-4473, and their fax number is (703) 235-4495. Their new offices will include a library and reading room where information on high-level radioactive waste disposal issues will be compiled. ☆

State Agency Transportation Directory Available

The names and addresses of State agencies involved in the transportation of radioactive materials can be found in a directory recently published by the Conference of Radiation Control Program Directors (CRCPD) as part of their cooperative agreement with the OCRWM transportation program.

The *Directory of State Agencies Concerned with the Transportation of Radioactive Material* is organized by state and lists the name, title, and telephone number of the senior official of each responsible state agency and the person to contact for information on radioactive materials in that state. The directory describes each agency's responsibility for radioactive materials transportation and cites applicable statutes or other mandates. CRCPD plans to revise the directory annually. Copies are available at no charge from the the Conference of Radiation Control Program Directors, Inc., 71 Fountain Place, Frankfort, KY 40601; or telephone (502) 227-4543. ☆

DOE Receives National Research Council Report on "Rethinking High-Level Radioactive Waste Disposal"

(continued from page 3)

in the event that some issue should make it impossible to license a geologic repository."

The Secretary of Energy, Admiral Watkins, has directed Dr. John W. Bartlett, the recently named Director of the Office of Civilian Radioactive Waste Management, to conduct a comprehensive review of the Council's findings, and to ensure that all key parties inside and outside the Department of Energy are invited to play a meaningful role.

Copies of this report are available in limited supply from:

Board on Radioactive Waste Management
National Research Council
2101 Constitution Avenue, NW HA462
Washington, DC 20418 ☆

Selected Events Calendar

Aug. 17	Nuclear Waste Technical Review Board Transportation Panel, Public Hearings on Transportation Issues, Amargosa Valley Multi-Purpose Building, Amargosa Valley, NV. Contact Paula Alford, (703) 235-4473.
Aug. 28-29	Nuclear Waste Technical Review Board Engineered Barrier System Panel Meeting, Pleasanton Hilton, Pleasanton, CA. Contact Paula Alford, (703) 235-4473.
Aug. 29-31	Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White, (301) 492-7288.
Sept. 13	DOE/Nuclear Regulatory Commission Technical Exchange on Radionuclide Retardation Testing and Modeling. Los Alamos, NM. Contact Linda Desell, (202) 586-1462.
Sept. 27-28	Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White, (301) 492-7288.
Oct. 3-5	Spectrum '90, Nuclear and Hazardous Waste Management International Topical Meeting, Knoxville, TN. Contact Earl McDaniel at (615) 574-0439 or Karl Notz (615) 574-6632.
Oct. 15-16	Nuclear Waste Technical Review Board, Public Hearings on Environment and Public Health Issues, Environment and Public Health Panel, Peppermill Hotel, Reno, NV. Contact Paula Alford, (703) 235-4473.
Oct. 30-31	DOE/Nuclear Regulatory Commission Technical Exchange on Performance Assessment, Albuquerque, NM. Contact Linda Desell, (202) 586-1462.
Nov. 8	DOE/Nuclear Regulatory Commission Technical Exchange on Calico Hills Risk/Benefit Analysis, Denver, CO. Contact Linda Desell, (202) 586-1462.
Nov. 19	Nuclear Waste Technical Review Board Transportation Panel, Public Hearings on Transportation Issues, Peppermill Hotel, Reno, NV. Contact Paula Alford, (703) 235-4473.

For details on DOE/NRC meetings call (1/800) 368-2235 for a recorded message. In the Washington, DC, area call 479-0487.

A telephone recording service has been established for the announcement of upcoming meetings related to the waste management program of the NRC. The number is (1/800) 368-5642, ext. 20436. Washington, DC, area residents should call 492-0436.

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New Publications and Documents

Newly Issued or Reissued OCRWM Backgrounders

"Major Federal Regulations Which Affect the Civilian Radioactive Waste Management Program," DOE/RW-0273P.

"The Status of the Nuclear Waste Fund," DOE/RW-0274P.

"Performance Assessment Under the Geologic Repository Program," DOE/RW-0275P.

"Addressing Concerns About Water Through Repository Siting and Design," DOE/RW-0279P.

"Shipments of Spent Nuclear Fuel in Support of Nuclear Waste Policy Act Research and Development Programs," DOE/RW-0280P.

"Quality Assurance for Nuclear Waste Repositories," DOE/RW-0281P.

"Activities During the Site Characterization Phase of the Geologic Repository Program," DOE/RW-0282P.

"Characteristics and Inventories of Nuclear Waste," DOE/RW-0283P.

"Radiation and High-Level Nuclear Waste," DOE/RW-0284P.

"The Multiple Barrier System of Geologic Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste," DOE/RW-0285P. ☆

DOE/RW-0288P

OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

September 1990

OCRWM Issues Management Systems Improvement Strategy

A new management approach to be used for achieving the Congressional mandate for developing a disposal system for spent nuclear fuel and high-level nuclear waste has been issued by Dr. John W. Bartlett, Director of OCRWM. This 20-page document, "Management Systems Improvement Strategy," documents the strategy that has been designed to communicate clearly to interested parties and to all who are involved in applying the strategy to program operations, the basic principles that underlie the management of the OCRWM program.

The strategy is also intended to assist in implementing the three initiatives announced by Energy Secretary James D. Watkins in November 1989*: developing options for ensuring the timely acceptance of spent fuel at the Monitored Retrievable Storage facility; initiating comprehensive scientific investigations of Yucca Mountain in Nevada to determine whether or not it is suitable for development of a repository; and establishing an improved management structure and procedures.

GENERAL GUIDING PRINCIPLES

In developing the strategy, special emphasis was placed on the following general guiding principles:

- Focus program activities on accomplishing the mission.
- Maintain standards of excellence as a fundamental policy.
- Establish and maintain accountability for control of cost, schedule, and performance.
- Ensure that all quality assurance requirements are met.
- Establish and implement strict environmental, safety, and health compliance.
- Assign equal importance to institutional and technical activities.
- Coordinate technical, institutional, and management activities.

INITIATIVES AND TASKS IN THE IMPROVEMENT OF MANAGEMENT SYSTEMS

To move aggressively in the implementation of this strategy, a number of initiatives, described below, have been identified; and work on some of these initiatives has already started.

Functional analysis of the physical system

Conduct a comprehensive analysis to identify all the functions that must be performed by the physical system and each of its elements to accomplish their respective parts of the mission.

The functional analysis will be conducted in several levels of increasing detail. The results of the functional analysis will be documented. Any changes that may later be necessary will be accomplished through the proper change control procedures.

Preparation of physical system requirements documents

After completion of the functional analysis of the overall physical system and its elements, update requirements documents will be baselined and subject to configuration control. These documents are critically important to the application of systems engineering to achieve the OCRWM mission.

* "Report to Congress on the Reassessment of the Civilian Radioactive Waste Management Program," DOE/RW-0427, November 1989.

(Continued on page 2)

In This Issue . . .

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For further information about the national program or for copies of new OCRWM publications and documents listed in the *OCRWM Bulletin* contact the U.S. Department of Energy, OCRWM, Office of External Relations, Mail Stop RW-40, 1000 Independence Avenue, S.W., Washington, DC 20585, (202) 586-5722. The *OCRWM Information Services Directory* is available to provide sources of program information.

OCRWM Issues Management Systems Improvement Strategy

(Continued from page 1)

Development of strategies and plans for the physical system elements

Formulate strategies to develop each of the four primary physical system elements: accepting, transporting, storing, and disposing waste. The plans will identify specifically the major activities that will be undertaken and the time phased sequence of these activities. They will also identify the major resource requirements and present general guidelines regarding their sources. In effect, these documents will represent the mission statements for each physical system element and the top level strategy for accomplishing the mission of the element.

Preparation of a revised, product oriented work-breakdown structure

The work-breakdown structure is based on the physical system products that satisfy the functional requirements. It is a graphic representation that completely defines all work by relating elements of the work to each other and to the end product. A dictionary that lists and defines each element in the work-breakdown structure will also be prepared.

Completion of an element in the work-breakdown structure can be verified independent of the person responsible for its completion, and can provide a basis for establishing integrated cost, schedule, and technical baselines.

Analysis of programmatic functions

Conduct a functional analysis to identify all programmatic functions and subfunctions, and the dependencies among them. This will ensure that functions have not been overlooked and interfaces have been identified.

Development of plans for the primary programmatic functions

Determine what processes must be developed in order to perform each primary programmatic function, and develop policies and guidelines to direct, in principle, how all subfunctions will be performed throughout the program.

Development of a document hierarchy

To establish precedence for all programmatic functions, the program documents will be related to one another in a hierarchy that will be accompanied by a description of the role, purpose, and functional relationship of each document and an outline specifying the scope and content of each document.

Development of integrated technical, cost, and schedule baselines

The baselines are a reference set of data, analyses, designs, requirements, and plans that are strictly controlled in order to ensure that all program participants are using the same information in the development of the waste management system and that any changes are carefully evaluated and approved by a change control board before being implemented.

Establishment of a uniform process for decision making

A process will be established to take advantage of new and powerful tools in decision-analysis methods to improve decision making across the program.

Reassessment of the roles and interfaces of national laboratories, contractors, and other program participants

This reassessment will include the potential for consolidating existing contracts and opportunities for further improvements in the management of contract resources. It will also evaluate the changes that may be needed if current negotiations result in the award of a contract for management and operating services (See *OCRWM Bulletin*, July/August 1990).

Development of personnel resources

To ensure a solid base of personnel resources, a strategy will be developed to qualify, raise standards of performance, and heighten professionalism for prospective employees. Means for establishing curricula leading to careers in the program will be explored with universities. Included in this initiative will be a training program that will begin by identifying, for existing personnel, any additional training needed to carry out the responsibilities assigned to them in the proposed new organization.

Establishment of total quality management

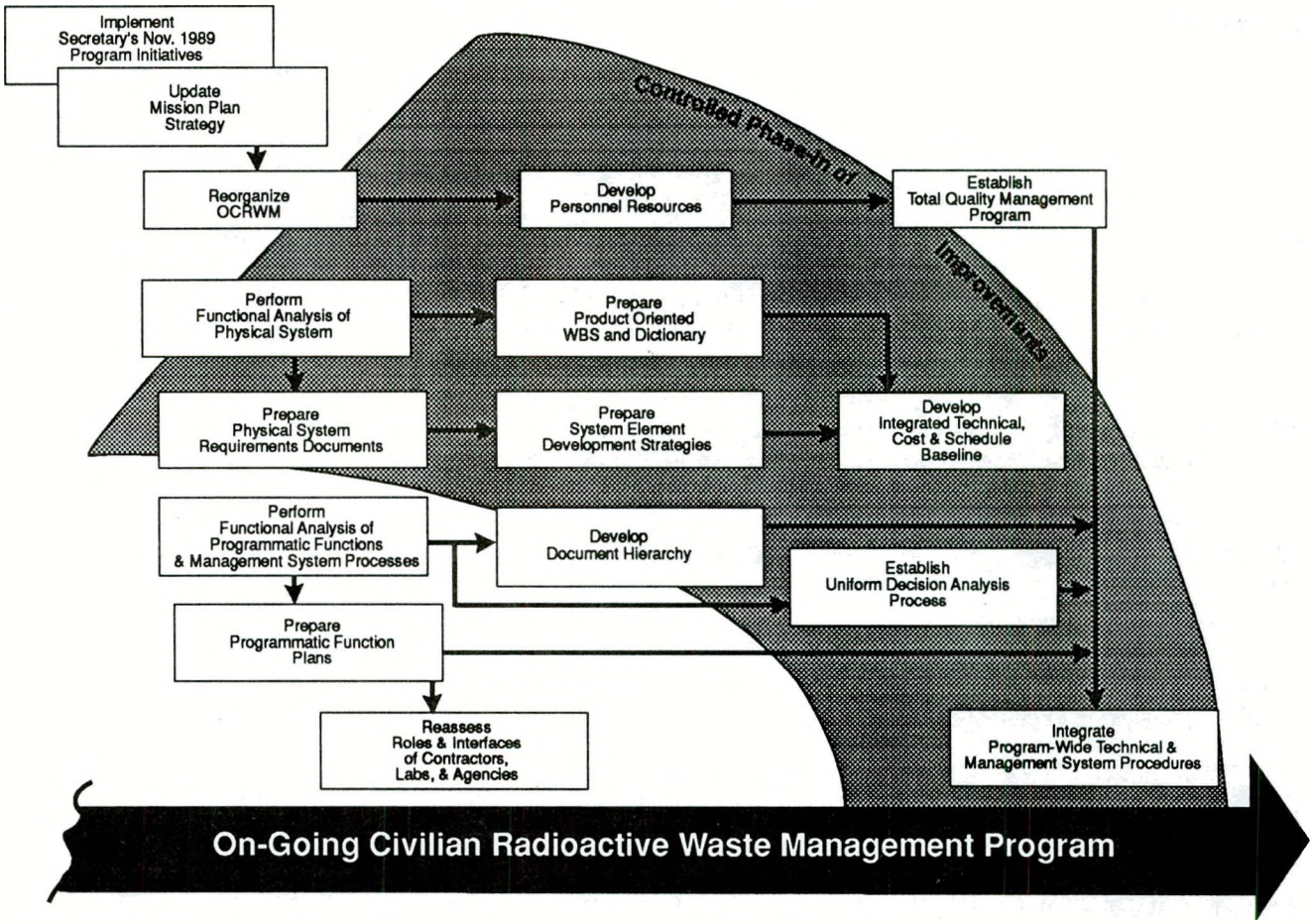
A program of total quality management will be initiated to focus OCRWM experience on enhancing the processes developed through this strategy and used in the program and its projects.

IMPLEMENTATION OF THE MANAGEMENT SYSTEMS IMPROVEMENT STRATEGY

As indicated in the accompanying figure, the results of the initiatives described above will be carefully phased into the mainstream of the program, using a formal change control process, allowing for transition, and conserving resources by building on the existing program. No component of the program will be removed until and unless a replacement is available. Existing processes will be used if they function satisfactorily. The Management Systems Improvement Strategy is expected to produce not only near-term improvements in the progress of the program but also to provide the framework that will ensure the successful accomplishment of the program's mission.

Copies of the Management Systems Improvement Strategy paper are available upon request by calling (202) 586-5722 or by writing to the U.S. Department of Energy, OCRWM (RW-33), ATTENTION: MSIS-August 1990, 1000 Independence Avenue, S.W., Washington, DC 20585. ☆

Overview
Management Systems Improvement Strategy
Implementation Actions



DOE Issues Notice of Proposed Rulemaking to Bring Nuclear Waste Fund Fee Computation Into Conformance with U.S. Court of Appeals Ruling

The Nuclear Waste Policy Act of 1982, as amended, provides a comprehensive framework for disposing of commercial spent nuclear fuel and high-level radioactive waste of domestic origin. Under this Act, DOE accepts and disposes of such waste from its owners or generators in return for the payment of fees based on the kilowatts of electricity generated and sold.

On March 17, 1989, the U.S. Court of Appeals for the District of Columbia ruled that the existing 1 mill per kilowatt hour fee for "net electricity generated" does not conform to the "generated and sold" provision specified in the Act, and required DOE to "implement some reasonable and fair method"...to account for losses in the transmission and distribution of electricity in addition to deductions for normal onsite nuclear service station loads, as well as to account for other electricity not sold.

The threshold issue involved in implementing the court ruling concerns the appropriate interpretation of the phrase "and sold." The problem is to define, for fee calculation purposes, the point (between the generation of electricity and its delivery to the retail customer) at which the nuclear electricity is sold. Neither DOE's contracts with the utilities, the Act, nor past Court decisions have addressed whether "and sold" refers to electricity sold at the point of first sale (which may be either to other utilities or a retail customer), or whether it refers only to electricity sold to retail customers, i.e. the ultimate consumer.

To interpret the term "and sold" to refer to first sales (whether or not the electricity is resold) would mean that the marketing arrangement of a particular utility would influence the amount of electricity subject to the fee. Such a result would not provide an equitable basis for the collection of the fee and might even result in utilities seeking to alter their marketing arrangements.

(Continued on page 5)

OCRWM Extends Cooperative Agreements with National Conference of State Legislatures and National Congress of American Indians

It is OCRWM's policy to enhance understanding of program goals and activities in order to promote and encourage constructive participation by interested parties in the planning and implementation of the civilian radioactive waste management program. OCRWM's information and outreach efforts are tailored to meet the specific needs of the various interest groups. As part of those efforts, OCRWM has recently renewed cooperative agreements with the National Conference of State Legislatures (NCSL) and the National Congress of American Indians (NCAI) as described below.

National Conference of State Legislatures

Under the cooperative agreement, NCSL plans to issue approximately four State Legislative Reports; two articles to be submitted for publication in either "State Legislatures,", "Conference Report," or "Leader's Letter;" and a bimonthly "High-Level Waste" newsletter.

Other activities include site visits; support to the Legislative Working Group on High-Level Waste and High-Level Waste/ Hazardous Materials Transportation Task Force; and technical assistance to legislators from the potential Monitored Retrievable Storage facility or repository host States or to other State and Federal agencies involved in the high-level waste program to provide background briefings and assist in understanding State Government issues.

National Congress of American Indians

The NCAI Fund project assists DOE in providing necessary information for tribal leaders in the implementation of the Nuclear Waste Policy Act, as amended, and provides tribal leaders periodic opportunities to be briefed on the nuclear waste management program and to express their views. NCAI, the membership association affiliate of the NCAI Fund, is a leading national Indian organization.

During the project year, the NCAI Fund project will provide technical assistance to address information needs of Tribes including the following:

- Develop periodic nuclear waste news reports for tribal governments to be included in the "Sentinel/Bulletin-NCAI News."
- The NCAI Fund project will monitor and review national nuclear waste draft legislation and regulations to assess the impact on Tribes, and will advise DOE on tribal interests and the manner in which such measures and rules could be drafted to protect tribal interests.
- The NCAI Fund project will consult with other Federal agencies to provide information to the Tribes in regard to high-level waste issues.

The NCAI Fund project will provide a forum for Tribes and DOE to meet and discuss areas of concern at NCAI national meetings, including the NCAI Mid-Year Conference, the Annual NCAI Convention, the NCAI Executive Council Annual Meeting, and two meetings between OCRWM and tribal representatives.

Transportation support activities are also part of the NCAI Fund project. These include:

- Technical assistance to address information needs regarding transportation of high-level radioactive waste.
- Coordination of efforts with NCSL and regional groups, and participation in DOE Transportation Coordination Group Meetings. ☆

OCRWM Director Speaks Before National Conference of State Legislatures

On Aug. 7, 1990, Dr. John W. Bartlett addressed the 1990 Annual Meeting of the National Conference of State Legislatures (NCSL) in Nashville, TN. At this meeting, he discussed the national program for safe disposal of high-level radioactive waste, the status of the scientific investigation of Yucca Mountain, NV, the transportation program, and new technology research. Also, in his remarks, he described the opportunity for a negotiated site and a partnership for science education as excerpted below:

"OPPORTUNITY FOR A NEGOTIATED SITE

"Many of you are aware that the 1987 Amendments Act provided a promising new approach to siting radioactive waste storage and disposal facilities. In this country and abroad, the crux of the problem has not been the development of safe technology — rather it has been the politically difficult decisions of where to locate such facilities and public acceptance of these decisions, once made.

"In 1987, with visionary leadership by Chairman Morris K. Udall of the House Interior and Insular Affairs Committee, Congress decided to try a new approach. Instead of the Federal Government picking a location based only on technological considerations, Congress decided to create a new Office of the Nuclear Waste Negotiator to find a State or Indian Tribe willing to host a storage or disposal facility at a technically qualified site on reasonable terms. That agreement would identify conditions under which the volunteer host would be willing to accept a facility. The Negotiator is empowered to offer incentives that would benefit the host State or Tribe. The package of benefits would be tailored to the requirements negotiated with the potential host. Example items might include: *(Continued on page 5)*

DOE Issues Notice of Proposed Rulemaking to Bring Nuclear Waste Fund Fee Computation Into Conformance with U.S. Court of Appeals Ruling

(Continued from page 3)

DOE believes that construing "and sold" to mean "sold to the ultimate consumer" is a reasonable and preferable interpretation of the statute, and is consistent with the court's requirement that computation of the fee account for losses in the transmission and distribution of electricity. Therefore, DOE proposes that interpretation as published in the Notice of Proposed Rulemaking (NOPR) in the Federal Register on Sept. 7, 1990, for public review and comment.

In order to determine the estimated amount of electricity generated and sold from a specific nuclear powerplant, it is necessary to calculate each plant owner's share of electricity sold based on: (1) electricity sold to ultimate consumers and (2) electricity sold for resale. In turn, these two components must then be adjusted to account for the amount of electricity lost or otherwise not sold. For this reason, the NOPR also contains a proposed calculation methodology to define energy losses on net electricity sold for resale that can be applied uniformly by each contract holder and relies exclusively on existing data historically supplied to the Federal Government.

The NOPR also states DOE's intention to provide credits on past overpayments once the rulemaking is finalized and to seek statutory authority from Congress to pay interest on these overpayments.

Copies of comments from various organizations on the implementation of the U.S. Court of Appeals ruling that preceded the publication of the NOPR are available for review at the DOE Reading Room, Forrestal Building, Room 1E-190, 1000 Independence Avenue, S.W., Washington, DC 20585.

OCRWM Director Speaks Before National Conference of State Legislature

(Continued from page 4)

- Host jurisdiction participation in the project including shared responsibilities for oversight.
- Federal grants and tax incentives.
- Local hire/local purchase agreements.
- Fee assessments or other economic incentives.

"This is a radical departure from the siting process used to date. We are much encouraged by the possibility that an arrangement can be made that will benefit both parties. We need to emphasize here that proven technology is widely available for management of these wastes and that any facility sited by the Negotiator will come under all applicable safety and environmental regulations. I understand that such agreements have been used successfully to site domestic landfills, and that Canada and Sweden have also negotiated nuclear waste sites. I would just emphasize that each State or Tribe will decide of its own volition whether this is a possibility they wish to explore. No one will be twisting arms to convince anyone to negotiate. A decision to explore the matter carries no obligation whatsoever to conclude an agreement, and none will be made without the full and willing consent of both parties. The key to any successful contract is mutual benefit. The Negotiator's effort will be wholly predicated on this principle.

"A PARTNERSHIP FOR SCIENCE EDUCATION

"I would like to say a word about the vital role that education will play in the success or failure of radioactive waste programs. Because our program has a long time horizon, it will require the talents of several generations of scientists and engineers. To ensure that sufficient numbers of trained scientists and engineers are available to meet the Nation's requirements for safe management of radioactive waste, a number of activities are under way. Through a fellowship program, for instance, we support highly capable students in academic areas related to the management of spent fuel and high-level radioactive waste: earth sciences, engineering, materials science, transportation, chemistry, and radiation. Initiatives to increase scientific literacy include the development of specialized curricula for grades K through 12, teacher workshops, and cooperation with various civic, public, and international programs to develop information about waste management programs and activities.

"These programs are part of a broader effort sponsored by Secretary Watkins to promote science and mathematics education... Ultimately, the success of the waste management program will depend on forging innovative science education partnerships between the Federal Government, industry, academia, and the States. NCSL has provided strong encouragement and leadership to promote science education...we solicit your help for the challenging days ahead." ☆

Written Comments on Proposed Rulemaking

Written comments on the proposed rulemaking must be received on or before 4:30 p.m. on Oct. 9, 1990. For further information contact:

Alan B. Brownstein, Office of Civilian Radioactive Waste Management, (202) 586-4973, or

Carol M. Reuter, Office of Procurement Operations, (202) 586-8262, or

Robert Mussler, Esq., Office of General Counsel, (202) 586-6947.

All of the above contacts are located at the

New Publications and Documents

"Management Systems Improvement Strategy." A description of this paper begins on page 1 of this *OCRWM Bulletin*.

Copies of the paper are available upon request by calling (202) 586-5722 or by writing to U.S. Department of Energy, OCRWM (RW-43), ATTENTION: MSIS-August 1990, 1000 Independence Avenue, S.W., Washington, DC 20585.

Selected Events Calendar

Sept. 27-28	Advisory Committee on Nuclear Waste, Phillips Building, 7920 Norfolk Avenue, Bethesda, MD. Contact Barbara Jo White, (301) 492-7288.
Oct. 3-5	Spectrum '90, Nuclear and Hazardous Waste Management International Topical Meeting, Knoxville, TN. Contact Earl McDaniel at (615) 574-0439 or Karl Notz at (615) 574-6632.
Oct. 15-16	Nuclear Waste Technical Review Board, Public Hearings on Environment and Public Health Issues, Peppermill Hotel, Reno, NV. Contact Paula Alford, (703) 235-4473.
Nov. 19	Nuclear Waste Technical Review Board Transportation Panel, Public Hearings on Transportation Issues, Peppermill Hotel, Reno, NV. Contact Paula Alford (703) 235-4473.

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NOTE TO OCRWM BULLETIN READERS

DOE/OCRWM is providing free access to its computer database, INFOLINK II, for users to obtain current information on the waste repository program. For more information contact Mary Ann Ferguson, Information Services Division, DOE/OCRWM, 1000 Independence Avenue, S.W., Washington, DC 20585, (202) 586-4127.

OCRWM Bulletin

United States Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585

October/November 1990

OCRWM Director Testifies Before the Committee on Environment and Public Works, Subcommittee on Nuclear Regulation, United States Senate, October 2, 1990

On Oct. 2, 1990, Dr. John W. Bartlett, in his first appearance before Congress since his confirmation in April 1990 as Director of OCRWM, testified before the Subcommittee on Nuclear Regulation of the Senate Committee on Environment and Public Works. After providing some historical background on DOE's statutory mandate to develop and operate a system for disposing of high-level nuclear waste, Dr. Bartlett reviewed some actions that he has taken to implement Secretary Watkins' three-point action plan to achieve targeted goals and milestones.

Actions taken include issuance of a Management Systems Improvement Strategy (see *OCRWM Bulletin*, September 1990), conduct of Quality Assurance audits of OCRWM Headquarters and Project Office programs (see page 5 of this issue), and announcement of a proposed re-organization (see *OCRWM Bulletin, July/August 1990*). Also under way are development of new management control systems that will increase accountability and effectiveness of operation, and maintenance of dialogues with affected and interested parties. In that connection, OCRWM will be conducting workshops to have external parties participate in developing the basis for DOE decisions on focusing future program activities.

In his testimony, Dr. Bartlett also described future actions that the DOE will take, excerpted as follows:

"...In the future, we will continue to maintain and act on our posture of aggressive resolve to fulfill the OCRWM mission.

"We will continue to develop the tools, equipment, processes and procedures needed to conduct scientific investigations at Yucca Mountain and to analyze data acquired through these investigations. (See Figure 1).

"We will continue to collect and analyze data from laboratory activities as well as from ongoing field activities. We will continue to develop models of natural barriers, develop our performance assessment capabilities, and proceed with conceptual engineering designs. In addition, we will continue to prioritize the plans for these scientific activities and focus on near-term efforts on those investigations that examine potential unsuitable conditions at Yucca Mountain.

"We will also continue key efforts supporting the development of the Monitored Retrievable Storage (MRS) facility, such as design and engineering studies, including initiation and completion of the conceptual design; environmental, regulatory and licensing activities; and feasibility grants to States, Tribes and local entities, as authorized in the Amendments Act. (See Figure 2).

"We will continue key activities supporting transportation of high-level waste, including development of cask systems, transportation support systems, and institutional interactions. (See Figure 3).

"We will provide any support requested by Mr. David Leroy, the newly confirmed independent Nuclear Waste Negotiator, as he initiates his efforts to identify volunteer sites both for a MRS facility and for alternate repository sites.

"We will work to broaden our ongoing interactions with external groups such as the Nuclear Waste Technical Review Board, the National Academy of Sciences, and the Secretary's Energy Advisory Board, and extend their use as sounding

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OCRWM Director Testifies Before the Committee on Environment and Public Works, Subcommittee on Nuclear Regulation, United States Senate, October 2, 1990

(continued from page 1)

Figure 1. Representation of Key Scientific Investigation Activities in FY 1991

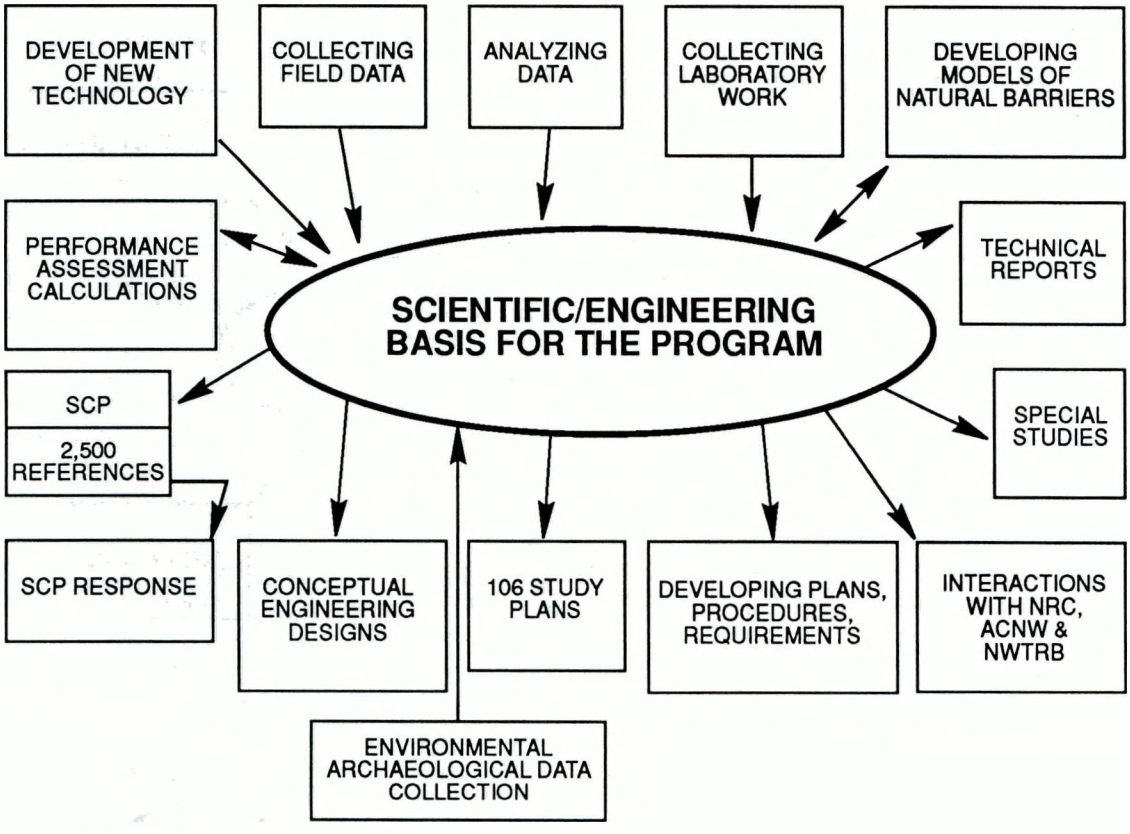
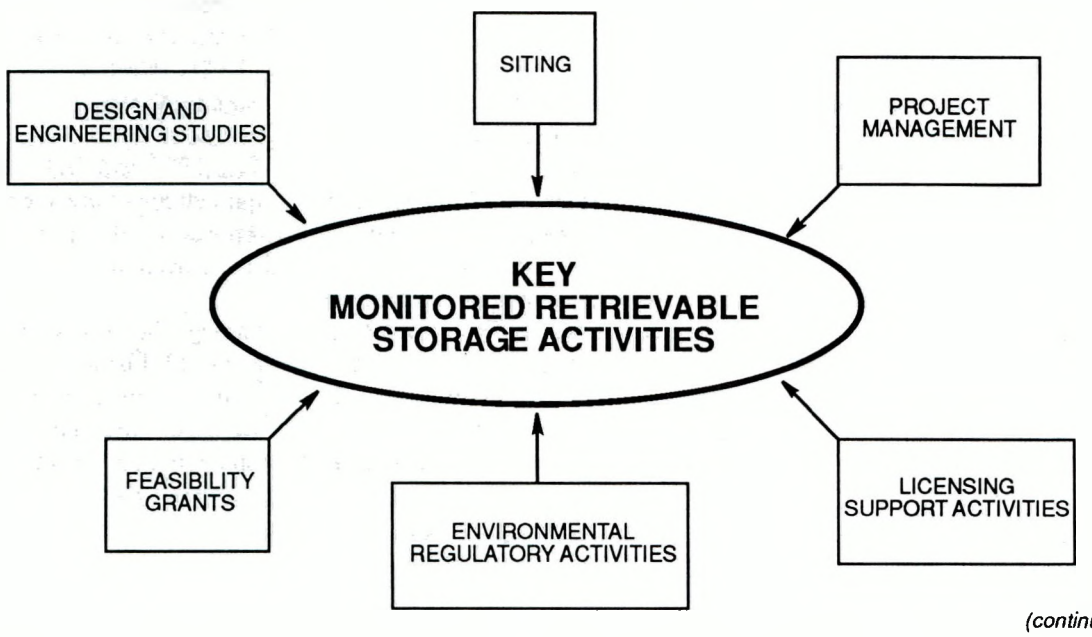


Figure 2. Representation of Key Activities for Monitored Retrievable Storage in FY 1991



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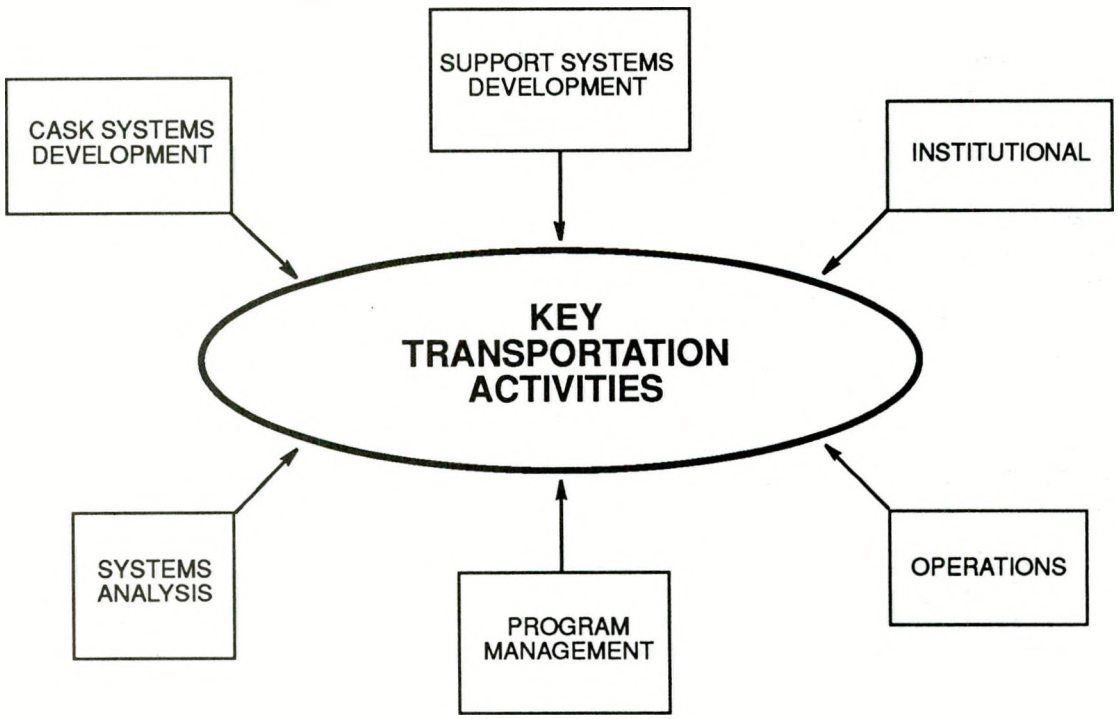
OCRWM Director Testifies Before the Committee on Environment and Public Works, Subcommittee on Nuclear Regulation, United States Senate, October 2, 1990

(continued from page 2)

Figure 3. Representation of Key Transportation Activities in FY 1991



boards, and for independent expert review and assessment of the Department's technical program. These independent program reviews provide important contributions to the Department's efforts to resolve the Nation's waste disposal issues as evidenced by the recent National Research Council's Board on Radioactive Waste Management report 'Rethinking High-Level Radioactive Waste Disposal.' The report offered many insightful and creative recommendations to improve the waste management program, many of which are in complete accord with initiatives already undertaken by Admiral Watkins in his recent restructure of the OCRWM program. A comprehensive review of the Board's findings is currently under way, and when fully evaluated, will be discussed with the Council, Congress and other interested parties.

"Building on our current efforts to increase the involvement of external parties in predecisional planning, we will expand the avenues, frequency and substance of dialogue with affected and interested parties (see page 4 of this issue). In this vein, and in keeping with the Secretary's strong commitment to expanding Departmental initiatives to increase scientific literacy in the country, we will continue to broaden our information and education efforts. These will include maintaining our OCRWM graduate fellowship program, participating in international workshops sponsored by the Nuclear Energy Agency of the Organization for Economic Cooperation and Development (OECD/NEA), designing teaching curricula to be used throughout the member nations of the OECD/NEA, and continuing our programs to provide information on high-level waste disposal to the public to facilitate communication.

"Through initiatives such as these just mentioned, I believe we can continue to build on the foundation we have established and show progress in our resolve to move forward aggressively to achieve our goals." ☆

Ninth Circuit Court of Appeals Rules in Favor of DOE in Suit Brought by the State of Nevada

In a petition before the U.S. Court of Appeals for the Ninth Circuit, the State of Nevada, and other petitioners, challenged the Secretary of Energy's decision to continue scientific investigation of Yucca Mountain, NV, as a potential site for the location of a national high-level radioactive waste repository, pursuant to the Nuclear Waste Policy Act of 1982, as amended (NWPA). Nevada asserted that Congress' selection of Yucca Mountain was not constitutional, and that actions by the Nevada State Legislature constituted a valid and effective "notice of disapproval" pursuant to the Nuclear Waste Policy Act (NWPA). Nevada finally contended that the Secretary must promulgate regulations that govern the timing of site disqualification decisions.

On Sept. 19, 1990, the Court issued a unanimous decision in favor of DOE that addressed all issues raised by Nevada. The Court held that Nevada's attempted legislative veto of the Secretary's site characterization activities is preempted by the NWPA, and that the decision to continue site characterization is not contrary to law.

Based on the Court's opinion, the Department of Justice, at DOE's request, is pressing forward with a suit, filed on Jan. 25, 1990, in the U.S. District Court, District of Nevada. That suit contends that Nevada has prevented DOE from carrying out necessary scientific investigations to determine the site's suitability for a nuclear waste repository by unlawfully refusing to act on DOE's environmental permit applications. DOE has filed for summary judgment in that case which had been stayed pending resolution of the case before the Ninth Circuit, and is seeking an order requiring the State of Nevada to issue the permits at issue within 30 days. These were resubmitted to the State of Nevada on Oct. 1, 1990.

On Sept. 28, 1990, the Nevada Attorney General announced the State's intent to petition the U.S Supreme Court for a writ of certiorari from the Ninth Circuit Court's decision. This appeal must be filed by Dec. 19, 1990. ☆

OCRWM to Hold Workshops on Waste Management Policies and Strategic Principles

In November 1989, the Secretary of Energy issued the "Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program." The report established a broad action plan for waste management, and stated that further details of the plan would be provided in a subsequent amended Mission Plan. The Mission Plan Amendment, currently under development, will be based on policies and strategic principles that will be used to guide program implementation. OCRWM is committed to the concept that effective participation by affected and involved parties in the development of these policies and strategic principles is essential to the success of the program.

OCRWM is completing a discussion draft of policies and strategic principles that, when adopted in final form, will help provide the foundation for the Mission Plan Amendment and program implementation. Previous plans for workshops with affected and involved parties to seek guidance on the draft document were deferred due to Federal budget uncertainties. The workshops have now been rescheduled for Dec. 4-5, 1990, in Salt Lake City and Jan. 15-16, 1991, in Washington, DC.

The Salt Lake City workshop is intended to focus primarily on strategic principles relating to ensuring public safety and protecting the environment. The Washington, DC, workshop will focus on strategic principles relating to stewardship of resources and effectiveness of operations. However, participants will be free to address other principles and issues at either workshop.

The workshops will be open to the public. In order to ensure full and free discussion, they will be moderated by a neutral facilitator experienced in guiding such public discussions. Participants will be asked to speak as individuals rather than as official representatives of specific organizations. Notes will be taken for use in further development of strategic principles for the program, but individual

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Public Land Withdrawal at Yucca Mountain, Nevada

On Sept. 25, 1990, the Bureau of Land Management of the Department of the Interior withdrew 4,255.50 acres of public land near Yucca Mountain, NV, from the mining and mineral leasing laws for a period of 12 years. The purpose of this withdrawal is to maintain the physical integrity of the subsurface environment to ensure that scientific studies for site characterization by DOE at Yucca Mountain are not invalidated or otherwise adversely impacted.

The area of the September 25 withdrawal is part of a larger area (about 51,632 acres) covered by a right-of-way reservation (ROWR) granted by the Bureau of Land Management on Jan. 6, 1988. The ROWR authorized the use by DOE of public lands for the range of site characterization activities that must be performed in order to technically establish the geologic and hydrologic conditions of the area. ☆

DOE Conducts Quality Assurance Audits of Civilian Radioactive Waste Program

Quality Assurance (QA) Qualification Audits took place at the OCRWM Washington Headquarters Office, Oct. 15-19, and at the Yucca Mountain Project Office in Las Vegas, Oct. 22-26.

OCRWM is required by the Nuclear Regulatory Commission (NRC) to have a fully qualified QA Program. This means that all DOE and DOE contractor personnel performing quality affecting work must be certified as being professionally qualified to do their assigned jobs and that QA requirements and procedures are established and acceptable for the work to be done.

The scope of the Qualification Audits included those management controls and associated procedures necessary for quality affecting work. Qualification and training records of DOE and DOE contractors were available to the auditors and effective implementation of the documented OCRWM QA Program is required before the QA Program can be "qualified" and regarded by NRC as acceptable for controlling activities associated with site characterization.

In addition to reviewing the qualifications of the personnel to perform the assigned tasks, the audit team looked at controls on all quality affecting activities, work task descriptions, document control and records management. Auditors focused on verifying implementation of controls on activities that are prerequisites to new site characterization work at Yucca Mountain planned to begin in January 1991; in particular, calcite and opaline silica vein deposit studies at Trench 14 and Midway Valley trenching studies in the Yucca Mountain area.

The audits were performed by OCRWM's Office of Quality Assurance and included observers from the NRC, the State of Nevada, and affected units of local government in Nevada.

To date, the NRC has accepted the QA programs of Sandia National Laboratories, and the Lawrence Livermore National Laboratory for implementation of new site characterization activities. Also, the QA programs of Fenix and Scission, Holmes & Narver, Reynolds Electric and Engineering Company, and the U.S. Geological Survey were conditionally accepted. OCRWM intends to satisfy these conditions prior to the start of the new site characterization activities. ☆

OCRWM to Hold Workshops on Waste Management Policies and Strategic Principles

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participants will not be quoted in written products prepared on the basis of conference discussions. This approach is being taken in order to encourage diverse parties to express their views at the workshops.

Dr. John W. Bartlett, Director of OCRWM, will be attending the conferences. For further information, contact Richard Blaney, U.S. Department of Energy, OCRWM, 1000 Independence Avenue, SW, Mail Stop RW-42, Washington, DC 20585, (202) 586-1252. ☆

Transportation Program Activities

Technical Advisory Team for Transportation is Established

DOE has established a goal to begin storage of spent fuel at a Monitored Retrievable Storage facility in 1998. As part of the effort to meet this goal, a complete transportation system will have to be designed and made ready for operation in 1998.

For that reason, the Director of OCRWM has established an independent team to help assure that OCRWM plans and activities directed at designing and delivering the transportation system are complete and have appropriately considered alternatives. The team's efforts will be directed at independent definition of technical, institutional, and operational elements required for the system. Their findings will be used to confirm the soundness of OCRWM's ongoing activities to help identify any additional activities that might be required.

The team will be led by Dr. Edward Bentz, who is recognized nationally and internationally for his expertise concerning transportation systems. Guidance for the transportation advisory team work activities will be provided by the Director of OCRWM, to whom the team will report periodically and informally. The Associate Director for Storage and Transportation will serve as the principal contact for working interactions between the team and OCRWM.

Transportation Coordination Group Meeting Scheduled

The next meeting of the Transportation Coordination Group will be held on December 4 and 5, 1990, in Albuquerque, NM, at the Doubletree Hotel, 201 Marquette, N.W., (505) 247-3344. The meeting will provide an update of the OCRWM Transportation Program, and will have separate sessions on transportation operations planning and the institutional program. For further information contact Dr. Beth Darrough at (202) 586-5616. ☆

Selected Events Calendar

December 4-5	Transportation Coordination Group, Doubletree Hotel, Albuquerque, NM. Contact Dr. Beth Darrough (202) 586-5616.

For details on DOE/NRC meetings call (1/800) 368-2235 for a recorded message. In the Washington, DC, area call 479-0487.

A telephone recording service has been established for the announcement of upcoming meetings related to the waste management program of the NRC. The number is (1/800) 368-5642, ext. 20436. Washington, DC, area residents should call 492-0436.

For information on meetings and events occurring between issues of the OCRWM Bulletin use OCRWM INFOLINK II, a computerized data base containing information about the OCRWM program. The OCRWM Bulletin is also available online through INFOLINK II.

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