QUARTERLY PROGRESS REPORT TO CONGRESS
U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
2nd and 3rd Quarters FY 2008

Introduction

In testimony on July 19, 2006, the Director of the Department of Energy's (DOE) Office of Civilian Radioactive Waste Management (OCRWM) committed to provide quarterly progress reports to the House Energy and Air Quality Subcommittee. This is the seventh quarterly report to Congress. The purpose of this report is to:

- Review major accomplishments of the last 2 quarters
- Identify key ongoing activities
- Highlight significant challenges

Major Accomplishments

License Application - On June 3, DOE submitted an approximately 8,600-page license application to the Nuclear Regulatory Commission (NRC) seeking authorization to construct the Yucca Mountain repository. The filing of the license application is one of the most significant milestones accomplished to date in the United States' effort to develop and operate a deep geologic repository that safely and permanently isolates the Nation's spent nuclear fuel and high-level radioactive waste from people and the environment. Currently, there are some 58,000 tons of commercial spent nuclear fuel in need of a permanent disposal site. The spent nuclear fuel and high-level radioactive waste is being stored at 121 temporary locations in 39 States across the Nation.

The license application, based on thousands of technical documents, contains scientific and engineering information that has been compiled, integrated, and analyzed over the past 25 years. The 17-volume application represents a national science and technology effort by more than 2,000 scientists and engineers, representing not only DOE and its contractors, but also eight national laboratories, the U.S. Geological Survey, and many universities.

The NRC decision on whether to accept and docket the application is expected within 90 days of the filing.

New Reactor Contracts – To allow the licensing of new nuclear plants, OCRWM has informed utilities interested in constructing new reactors that DOE is prepared to discuss a revision to the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (Standard Contract) to cover new plants. The Department has developed an amendment to the Standard Contract which we believe adequately protects the interests of the taxpayer and the contract holder. The Nuclear Waste Policy Act of 1982 requires that utilities have such a disposal contract with DOE, or be engaged in good faith negotiations with DOE for such a contract, before the Nuclear Regulatory Commission may issue a license for a new commercial reactor. Numerous utilities have recently indicated that they desire to enter into contracts with DOE for the new nuclear power plants they intend to construct. Execution of disposal contracts with the utilities is an essential step in the development of new reactors that are needed to meet our Nation's growing demands for electricity.

National Environmental Policy Act Documents - OCRWM completed final National Environmental Policy Act (NEPA) documents that had been issued in draft for public comment on October 5, 2007. The *Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (Repository SEIS), evaluates the potential environmental impacts of constructing, operating, monitoring and eventually closing a geologic repository at Yucca Mountain for the disposal of spent nuclear fuel and high-level radioactive waste. This document supplements the *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (Yucca Mountain FEIS) prepared in 2002. The *Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada – Nevada Rail Transportation Corridor* (Nevada Rail Corridor SEIS) analyzes the potential impacts of constructing and operating a railroad to connect the Yucca Mountain repository site to an existing rail line near Wabuska, Nevada (in the Mina rail corridor). It also updates relevant information regarding other rail corridors previously analyzed in the Yucca Mountain FEIS (Carlin, Jean, and Valley Modified) to identify any significant new circumstances or information relevant to environmental concerns. The *Final Environmental Impact Statement for a Rail Alignment for the Construction and Operation of a Railroad in Nevada to a Geologic Repository at Yucca Mountain, Nye County, Nevada* (Rail Alignment EIS) analyzes the potential impacts of railroad construction and operation along common segments within the Caliente and Mina rail corridors for the purpose of determining an alignment for the construction and operation of a railroad for shipments of spent nuclear fuel, high-level radioactive waste, and materials from an existing rail line in Nevada to a geologic repository at Yucca Mountain. The Notice of Availability of these NEPA documents was published on July 11, 2008.

Transportation, Aging, and Disposal Canister Contract - DOE awarded contracts to Areva Federal Services and NAC International for the design, licensing, and demonstration of the Transportation, Aging, and Disposal (TAD) canister system. The TAD canister will be the primary means for packaging spent nuclear fuel for transportation to and disposal in the repository at Yucca Mountain. The TAD canister concept was adopted by the Department as the primary means of receiving spent nuclear fuel at Yucca Mountain. It will minimize the need for repetitive handling of spent nuclear fuel by using the same canister from the time fuel leaves a nuclear power plant until its emplacement in a waste disposal package at Yucca Mountain. The license application submitted to NRC on June 3 incorporates the TAD concept.

Key Ongoing Activities

Request for Proposals for Management and Operating Contract – On May 13, 2008, DOE issued a Request for Proposals for a Management and Operating (M&O) contract. The competition reflects DOE's commitment to regularly compete its M&O contracts to ensure the greatest possible benefit to DOE, its mission, and the Nation. Key activities under this new M&O contract will include:

- Providing management expertise and support for the completion of repository design;
- Addressing questions or requests for additional information from NRC and supporting the Department's activities in the licensing process;
- Operating the Yucca Mountain site; and
- Providing construction management and integration support.

The current M&O contract was last competed in 2000, resulting in an award in March 2001 to Bechtel SAIC, LLC, a limited liability corporation formed by Bechtel Corporation and Science Applications International Corporation. The current contract runs through March 2009.

An assessment of the adequacy of the 1 mill per kilowatt/hour fee paid by nuclear utilities into the Nuclear Waste Fund accompanied the update to the TSLCC.

Total System Life Cycle Cost Estimate - On August 5, 2008, OCRWM provided to Congress and the public its updated Total System Life Cycle Cost (TSLCC) estimate which includes the cost to research, construct, and operate Yucca Mountain during a period of 150 years, from the beginning of the Program in 1983 through closure and decommissioning in 2133. The new cost estimate of $79.3 billion, when updated to 2007 dollars, comes to $96.2 billion, a 38 percent increase from the last published estimate in 2001 of $57.5 billion. This updated estimate takes into account a substantial increase in the amount of waste to be shipped and stored at the repository and more than $16 billion for inflation.

The new cost estimate reflects a 30 percent increase in the amount of commercial spent nuclear fuel to be disposed of in the repository, from a 2000 estimate of 83,800 metric tons heavy metal to a 2007 estimate of 109,300 metric tons heavy metal. This increased amount would extend the transportation period by 16 years and the emplacement period by 25 years. The increased amount of spent nuclear fuel is a result of existing and anticipated license renewals at operating nuclear power plants throughout the United States. Other factors contributing to the 2007 cost estimate include increases in raw material costs and a refinement of the repository design.

Fee Adequacy Assessment - An assessment of the adequacy of the 1 mill per kilowatt/hour fee paid by nuclear utilities into the Nuclear Waste Fund (NWF) accompanied the update to the TSLCC. An annual fee adequacy assessment is required by the NWPA. The fee adequacy assessment uses the most recent TSLCC in conjunction with a range of potential economic and civilian/defense cost share scenarios to assess whether the collection of the 1 mill per kilowatt/hour fee will provide sufficient revenues to offset the total life cycle costs of the Program. DOE has determined that the current fee remains adequate to cover the nuclear utility customers' portion of the total costs.

Interim Storage of Spent Nuclear Fuel from Decommissioned Reactors Site Report - DOE is preparing a report at the request of Congress on a plan to take custody of spent nuclear fuel currently stored at decommissioned reactor sites. OCRWM expects to provide this report to Congress later this year.

Second Repository Report - DOE is completing its evaluation and report on the need for a second repository. The NWPA requires such a report to be provided to the President and the Congress no later than January 2010. OCRWM expects to provide this report to the President and the Congress later this year.

Project Decision Schedule - The NWPA requires DOE to prepare and update, in cooperation with all affected Federal agencies, a Project Decision Schedule (PDS) that identifies the optimum way to attain operation of the repository. The PDS identifies the specific actions that affected Federal agencies, including DOE, must take in order to achieve the schedule presented in the PDS. The PDS, updated to reflect the current program milestones, is being developed in coordination with affected Federal agencies. OCRWM expects to issue a revised and updated PDS later this year.

Transportation Preparedness and Emergency Response Training - On July 23, 2007, OCRWM published a *Federal Register* notice presenting for public review and comment the Department's revised proposed policy for implementing Section 180(c) of the NWPA to provide support to States and tribes for transportation preparedness and emergency response training. The public comment period closed on January 23, 2008. DOE received more than 50 comment documents from States, State regional groups, tribal governments, affected units of government, and citizens. A supplement to the notice addressing grant funding allocations for tribes is under development.

Surface Transportation Board Certificate - DOE filed an application on March 17, 2008, with the Surface Transportation Board for a *Certificate of Public Convenience and Necessity* to construct and operate a rail line through Nevada to the repository. This certificate will be required if the new rail line to the repository is to provide common carrier rail service to communities in Nevada situated along the rail line. This shared use alternative is analyzed in the recently completed Nevada Rail Corridor SEIS and Rail Alignment EIS, and the Surface Transportation Board served as a cooperating agency in the development of those NEPA documents.

Right-of Way Application – On March 4, 2008, DOE filed an application with the Bureau of Land Management for a 314 mile right-of-way across public lands for the construction and operation of a rail line from an existing rail line near Caliente, Nevada, to the repository at Yucca Mountain. The impacts associated with this right-of-way are analyzed in the recently completed Nevada Rail Corridor SEIS and Rail Alignment EIS, and the Bureau of Land Management served as a cooperating agency in the development of those NEPA documents.

National Transportation Plan - OCRWM continues to make progress in developing a National Transportation Plan. OCRWM has previously briefed key stakeholders, including State groups, Native American tribes, and industry organizations, on the content of the plan. Before finalizing the plan, it will be formally provided to the public for review and comment.

Significant Challenges

FY 2009 Budget Request - In April, the Director testified before the House and Senate Appropriations Subcommittees on Energy and Water Development presenting the President's FY 2009 budget request for OCRWM of $494.7 million. FY 2009 will be the first year of a multi-

year repository license application support process. Following an acceptance review by NRC, it is anticipated that NRC will docket the license application, thus beginning the formal licensing process that could last three to four years. In FY 2009, the objectives of the Program are to:

- Begin support of the repository license application before the NRC;
- Begin detailed design of the facilities required for receipt of spent nuclear fuel and high-level radioactive waste at the repository;
- Continue essential interactions with State, local, and Tribal governments needed to support national transportation planning;
- Complete efforts to finalize the contour mapping and layout of the rail line to support land acquisition planning and complete a right-of-way application for the Nevada rail line;
- Continue design and licensing work on the TAD canister system;
- Continue staffing and training the OCRWM organization so that it has the skills and culture needed to design, license, and manage the construction and operation of the Yucca Mountain Project with safety, quality, and cost effectiveness; and
- Continue planning and designing a compliant and well-integrated safeguards and security, safety, and emergency management program.

The President's FY 2009 budget request will provide the needed funds to support the license application to the NRC for a construction authorization of a geologic repository for disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain.

Funding Requirements and Access to the Nuclear Waste Fund - Due to technical scoring requirements, nuclear waste fees collected from utilities are counted as mandatory receipts in the budgetary process, while spending from the NWF is scored against discretionary funding caps for the Department, making it very difficult to provide the higher funding levels needed to design and construct the repository. In legislation the Administration submitted to the 109th Congress and submitted again to this Congress, the President proposes fixing this problem by reclassifying mandatory NWF receipts as discretionary, in an amount equal to appropriations from the NWF for authorized waste disposal activities. Funding for the Program would still have to be requested annually by the President and appropriated by the Congress from the NWF.

Sustained funding well above current and historic levels will be required if the repository is to be built. Funding at current levels in future years will not be adequate to support design and the necessary concurrent capital purchases for repository construction, transportation infrastructure, and transportation and disposal casks. The development of a credible schedule for the Program is highly dependent upon a steady and reliable funding stream.

The Department estimates that taxpayers' potential liability to utilities for the Department's delay will increase from approximately $7 billion to approximately $11 billion because the opening of the repository is further delayed from 2017 to 2020. The calculation of potential costs to taxpayers is complex and depends on a number of variables that change year to year. However, on average, the Department estimates that the Government's liability will increase by hundreds of millions of dollars annually.

Proposed Yucca Mountain Legislation - The Administration has proposed legislation to facilitate the construction and operation of the repository and supporting infrastructure. First, as discussed above, the most important factor in moving the Yucca Mountain Project forward is the ability of the Department to have access to the NWF to support the cash flows needed to implement the Project.

By making a technical budgetary scoring change, the proposed legislation would correct a structural budget problem that currently prevents use of the NWF as intended. Second, to meet NRC licensing requirements it will also be necessary for Congress to approve the permanent withdrawal of the lands needed for the operational area of the repository. The bill would withdraw permanently from public use approximately 147,000 acres of land in Nye County, Nevada. Third, to promote efficient management and disposal of the current and projected future inventories of commercial spent nuclear fuel located at reactors throughout the United States, the proposed legislation would eliminate the current statutory 70,000 metric ton cap on disposal capacity at Yucca Mountain and allow for maximum use of the mountain's true technical capacity. Finally, the proposed legislation includes a number of provisions that would address other matters that have the potential to cause delays in moving forward with the Yucca Mountain Project.

Yucca Mountain was approved by the Congress and the President as the site for the Nation's first permanent spent nuclear fuel and high-level radioactive waste geologic repository in 2002. This legislation will aid the Federal Government in carrying that decision forward, and will help the Government meet its legal obligation to dispose of those materials. The Administration has briefed members of the Congress on the benefits of passing the legislation and requested hearings on the proposed legislation.