



**POLICY ISSUE**  
**(Information)**

**SECY-90-032B**

**August 3, 1990**

**For:** The Commissioners

**From:** James M. Taylor  
Executive Director  
for Operations

**Subject:** QUARTERLY PROGRESS REPORT ON THE PRE-LICENSING PHASE OF  
THE U.S. DEPARTMENT OF ENERGY'S CIVILIAN HIGH-LEVEL  
RADIOACTIVE WASTE MANAGEMENT PROGRAM

**Purpose:** To provide the Commission with a Quarterly Progress Report  
(April 1990 through June 1990) on the pre-licensing phase  
of the U.S. Department of Energy's (DOE's) Civilian High-  
Level Radioactive Waste Management Program.

**Background:** In the Quarterly Progress Reports on the pre-licensing  
phase of DOE's Civilian High-Level Radioactive Waste  
Management Program, the U.S. Nuclear Regulatory Commission  
(NRC) staff discusses key aspects of the pre-licensing  
consultation program between NRC and DOE that deserve  
Commission attention. The previous Quarterly  
Progress Report, SECY-90-032A, discussed activities that  
occurred between January and March 1990.

**Executive Summary:** The most significant activity during this reporting period  
pertained to DOE Implementation of Scheduled and Systematic  
Consultations. Mainly because of problems related to DOE's  
readiness to participate in particular meetings or  
technical exchanges, only two of the seven NRC-DOE formal  
interactions scheduled for this reporting period took place.

**NOTE:** TO BE MADE PUBLICLY AVAILABLE  
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Discussion:

1. DOE Implementation of Scheduled and Systematic Consultations

Although the staff has continued to establish, schedule, and hold formal technical interactions with DOE to resolve issues raised in the staff's Site Characterization Analysis (SCA), little progress has been made in resolving issues, other than the two staff SCA objections (QA and the Exploratory Shaft Facility design and design process).

Because of problems mainly related to DOE's readiness to participate in particular meetings or technical exchanges, only two of the seven NRC-DOE formal interactions scheduled for this reporting period at the March 20, 1990, NRC-DOE scheduling meeting actually took place. The problems that prevented some of the scheduled interactions from being held will be discussed at a forthcoming NRC-DOE management meeting. The staff believes that this discussion will help identify ways to more effectively use future interactions to facilitate the pre-license application consultation process for the early identification and resolution of potential licensing issues.

In addition to the formal interactions, informal one-on-one scientific discussions among the NRC Office of Nuclear Regulatory Research (RES) staff, Center for Nuclear Waste Regulatory Analyses (CNWRA) staff, and DOE investigators continued during this reporting period under the auspices of the Office of Nuclear Material Safety and Safeguards (NMSS) On-Site Representatives, who also participated in the discussions. The third and fourth in a series of scientific interactions focusing on laboratory investigations of thermohydrologic phenomena were held at Los Alamos National Laboratory on May 21, 1990, and at Sandia National Laboratory (SNL) on May 22, 1990. NRC and DOE both considered the interactions worthwhile for facilitating timely, direct, and open communication between NRC researchers and DOE investigators. Similar interactions in other scientific areas are being planned.

An informal information exchange in the area of performance assessment was also held at SNL on June 25 and 26, 1990 under the auspices of the NMSS On-Site Representatives. This information exchange is further discussed in this report under Early Establishment of Repository Design Parameters.

During this reporting period, DOE and EPA did not conduct any interactions that addressed issues about high-level radioactive mixed waste and the Resource Conservation and Recovery Act.

## 2. Early Implementation of a QA Program

The staff has noted some progress by DOE in program implementation. During the past several months, DOE has performed audits and surveillances that have verified that DOE contractors have improved in the development and implementation of the QA programs. However, DOE has cancelled both of the scheduled audits of the QA programs at DOE's Office of Civilian Radioactive Waste Management (OCRWM) and the Yucca Mountain Project Office (YMPO) and has not rescheduled them. Confidence in DOE's overall repository QA program is dependent upon the demonstration of successfully implemented QA programs at OCRWM and YMPO because these organizations represent the highest level of QA implementation and are responsible for the qualification of the DOE contractor's QA programs.

As discussed in the previous Quarterly Progress Report, the staff continued to express the need for a workshop among NRC, DOE, and DOE contractors to address frequently expressed concerns, whether real or perceived, about implementation of QA in the repository program. On May 22, 1990, the NRC staff held a meeting with DOE and the State of Nevada to begin to address a QA workshop. Although other attendees at the meeting discussed significant issues regarding QA implementation, DOE did not agree that such issues existed at the present time. However, both DOE and the industry representatives agreed that NRC's regulations and guidance are not an impediment to the successful implementation of a QA program. While DOE indicated it was unaware of the concerns related to QA, and did not necessarily agree with issues raised by other parties, it did agree to evaluate the concerns and to hold a workshop. The NRC staff will be invited to participate in the workshop. The staff will report on the results of the workshop in a future Quarterly Progress Report.

## 3. Early Establishment of Repository Design Parameters

As noted in previous Quarterly Progress Reports, the NRC staff documented significant concerns in the SCA

that relate to performance assessment. By letter dated June 11, 1990, the NRC staff forwarded DOE a copy of the report, "Phase 1 Demonstration of the Nuclear Regulatory Commission's Capability to Conduct a Performance Assessment for a High-Level Waste (HLW) Repository." The contents of this report, along with DOE's performance assessment program, will be discussed at a forthcoming technical exchange.

On June 25 and 26, 1990, an information exchange in the area of performance assessment was conducted at SNL under the auspices of the NMSS On-Site Representatives, who also participated in the exchange. This information exchange facilitated one-on-one informal scientific discussions of NRC's and DOE's current activities in the performance assessment area and information gathering among CNWRA, NRC, and SNL staff. This interaction was the first technical consultation concerning performance assessment in the last six years. All the participants found the interaction to be valuable. However, the exchange also emphasized the need for formal discussions in the performance assessment area.

#### 4. Early Resolution of State and Tribal Concerns

Since the last Quarterly Progress Report, the staff became aware that Senators Bryan and Reid, of Nevada proposed S.2258, "The Independent Spent Nuclear Fuel Storage Act." This Act would amend the Nuclear Waste Policy Act (NWPA) to allow commercial nuclear utilities that have contracts with the Secretary of Energy under Section 302 of the NWPA to receive credits to offset the cost of storing spent fuel that the Secretary is unable to accept for storage on and after January 31, 1998. The Act has been referred to the Committee on Energy and Natural Resources.

The State of Nevada and local representatives continue to participate in the technical exchanges and meetings between the NRC and DOE, including meetings of the Licensing Support System Advisory Review Panel. Representatives of the State of Nevada participated in the formal technical exchanges and QA meetings between NRC and DOE during this quarter. In conjunction with the June 13 and 14, 1990, NRC-DOE technical exchange on

significant faults, geoscientists for the State of Nevada, who are investigating field evidence related to faulting and structural control of volcanism in the vicinity of Yucca Mountain, led a 2½-day field trip to present the results of their recent work. Their work includes studies of the following topics: a study of the northwesterly trending faults on the western border of the proposed repository site, the rates of faulting in the vicinity of the site, and the levels of hazard posed on the proposed repository by volcanism.

#### 5. Adoption of the Policy of Conservatism

As noted in previous Quarterly Progress Reports, the SCA identified the need for DOE to be sufficiently conservative in its approaches to treating uncertainty in its investigations and analyses. DOE is still developing its response to the concerns expressed in the SCA, and has stated that its response will not be provided before December 1990. During this reporting period, there were no new issues related to the need for conservatism deserving Commission attention.

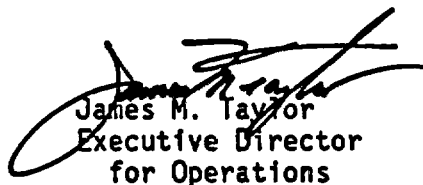
#### 6. Early Resolution of Issues

During this reporting period, RES completed its preparation of the draft "Format and Content Regulatory Guide (FCRG) for the License Application for the High-Level Waste Repository" for publication in the Federal Register. RES anticipates publication of the FCRG for public comment by the end of November 1990.

As part of its continuing effort to resolve issues, the staff is developing several Staff Positions. Staff Positions record the staff's interpretation of existing regulatory requirements. Staff Positions are different from Technical Positions (TPs) in that they offer interpretations of the regulations as opposed to TPs which provide guidance on acceptable methods for demonstrating compliance with the regulations. For example, one Staff Position currently under development addresses the clarification of the 300-to-1,000-year period for substantially complete containment of high-level wastes within the waste packages under 10 CFR 60.113(a)(1)(ii)(A).

Note:

Shortly after the end of this reporting period, DOE issued a press release announcing a reorganization of OCRWM, effective July 16, 1990. Although it is too early to determine the overall effects of the reorganization, the staff considers that DOE has made a positive step in appointing a permanent Quality Assurance (QA) Director who has a significant amount of QA experience with nuclear reactor technology. The staff will provide additional information on the OCRWM reorganization in the next Quarterly Progress Report.



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