



## POLICY ISSUE

(Information)

SECY-90-032

January 29, 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 (DOE'S) CIVILIAN HIGH-LEVEL  
RADIOACTIVE WASTE MANAGEMENT PROGRAM

Purpose:

To provide the Commission with a Progress Report  
(August 1989 through December 1989) on the pre-licensing  
phase of 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 items that cover key aspects of the  
pre-licensing consultation program between NRC and DOE.  
These items focus on key issues which deserve Commission  
attention.

Executive  
Summary:

The most significant activities during this period  
pertained to three areas of the pre-licensing consultation  
program: 1) DOE Implementation of Scheduled and Systematic  
Consultations; 2) Early Implementation of a Quality Assurance  
(QA) Program; and 3) Early Resolution of State and Tribal  
Concerns.

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DOE Implementation of Scheduled and Systematic Consultations

- °In its November 29, 1989, "Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program," DOE stated that the planned date for submitting a license application for a repository to NRC would be delayed from 1995 to 2001. The earliest date for repository operation would be slipped from 2003 to 2010.
- °The staff met with DOE on November 8, 1989, to schedule technical interactions; however, DOE has stated that it cannot support more than one interaction per month due to budget constraints. Although the NRC staff agreed to hold one interaction per month, it is concerned that the interactions scheduled do not cover all of the technical areas in the program and may impair the ability to resolve technical issues in a timely manner. This could result in situations similar to those encountered in the Exploratory Shaft Facility (ESF) design process that resulted in DOE having to prepare an additional justification document, the Design Acceptability Analysis (DAA). DOE has agreed to meet with the staff in March 1990 to further discuss the need for further interactions on its restructured program.
- °On December 13, 1989, the staff met with representatives from DOE's Office of Civilian Radioactive Waste Management (OCRWM), to discuss payment of the "one-time" fee into the Nuclear Waste Fund for spent nuclear fuel (SNF) generated before passage of the Nuclear Waste Policy Act (NWPA). This issue arises because a number of utilities elected to defer payment and there is concern by DOE that some of those utilities may not be able to make the payment when it is due. A potential shortfall in funds and the question of responsibility for spent fuel in the case of a utility's inability to meet its contractual obligation for payment are potential issues that may have to be considered in preparing the final review of the Waste Confidence Decision.

Early Implementation of a Quality Assurance (QA) Program

- °In its November 1989, "Report to Congress," DOE identified September 1990 as the date when it expected to get NRC acceptance of its overall QA program. Based on its review of the information in the report and that presented at the December 13, 1989, NRC-DOE bi-monthly QA meeting,

the staff believes that it and DOE need to meet and ensure that all of the events necessary to meet this September 1990, date have been fully considered.

The staff is concerned that DOE may soon start activities at the glass producers, the West Valley Demonstration Project (WVDP) and the Defense Waste Processing Facility, (DWPF) at Savannah River, that are important to safety and waste isolation without sufficiently developed and implemented QA programs for the producers. The staff has discussed this with DOE at the bi-monthly QA meetings and DOE has agreed to address this concern at the upcoming February meeting.

#### Early Resolution of State and Tribal Concerns

Following the June 28, 1989, passage of AB-222 which prohibits the storage of high-level waste in Nevada, it is the State's opinion that it has given notice to Congress of its disapproval of the Yucca Mountain site, as permitted under the NWPA. Further, the State of Nevada's opinion is that, as a result of Congress' failure to respond, the site has been lawfully vetoed, and DOE should no longer consider it as a potential site for the repository. The State Attorney General's November 1, 1989, legal opinion found the Notice of Disapproval to be valid.

#### Discussion

##### 1. DOE Implementation of Scheduled and Systematic Consultations:

During this reporting period the staff has been working with DOE to establish and schedule systematic consultations. As noted in the previous Quarterly Progress Report, the staff and DOE had scheduled twelve technical interactions between August and December 1989. Through December 1989, ten interactions were held, and based on the results, were considered beneficial by both the staff and DOE. On November 8, 1989, the staff met with DOE to discuss and schedule future interactions between December 1989, and September 1990. At the meeting, DOE reported that, due to budget constraints, it was unable to support more than one interaction per month. In addition, to maximize its resource utilization, DOE was focusing these interactions in areas related to surface-based testing.

Although the staff agreed to hold one interaction per month it noted that it would be prudent to keep NRC staff involved at various review stages in all areas where DOE had ongoing work, including planning and design activities.

Limiting the interactions to areas related to surface-based testing would not allow the staff to evaluate work in other critical areas, such as exploratory shaft design, where DOE and the staff agreed in July 1989, that interactions were needed to resolve the staff's Site Characterization Analysis (SCA) objection. The staff is concerned that the lack of early and ongoing interactions could result in situations similar to those encountered in the ESF design process that resulted in DOE having to prepare an additional justification document, the DAA. In addition, the staff is concerned that DOE will be performing evaluations to respond to the NWTRB's questions on the ESF without having interacted with NRC on related ESF issues identified in the SCA. DOE has agreed to meet with the staff in March 1990 to discuss the need for further interactions on its restructured program.

On November 29, 1989, DOE issued its "Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program." In the report, DOE announced a delay in the planned date for submitting a license application for a repository to NRC from 1995 to 2001, and a delay in the earliest date for repository operation from 2003 to 2010. These changes are part of a three-point plan for restructuring the high-level waste program that involves: (1) changes in the OCRWM management structure; (2) initiatives for gaining access to the Yucca Mountain site; and (3) initiatives for establishing a monitored retrievable storage facility to begin receiving waste in 1998. The details of the plan will be described in the revised Mission Plan for the high-level waste program, to be issued for review and comment by June 1990.

The focus of DOE's near-term scientific investigations of Yucca Mountain will be on surface-based testing to evaluate whether the site has features that would render it unsuitable as a potential repository site. Construction of the exploratory shafts, previously scheduled to have begun in November 1989, will be delayed until November 1992. DOE plans to use the delay to reevaluate shaft locations, construction methods, means of access to the repository horizon, need for additional exploratory drifts, and ESF design to resolve NRC and Nuclear Waste Technical Review Board (NWTRB) comments.

In the Report, DOE has stressed that the focus on surface-based testing does not mean that the importance of the underground testing program has diminished. The revised schedule allows for six years of in-situ testing. In addition, major site-specific activities related to design of the repository and of the waste package will be deferred, pending the results of the near-term studies of site suitability.

The staff will begin working with DOE to develop, in the near term, consistent, detailed schedules to support DOE's restructured program. As a result of this work, the staff anticipates that it and DOE will identify the events necessary to: 1) meet the September 1990 date for NRC's acceptance of the OCRWM QA program; 2) ensure adequate technical consultation; 3) support beginning surface-based testing in January 1991; and 4) support beginning construction of the exploratory shaft facility.

On December 13, 1989, the staff met with representatives from OCRWM, to discuss the payment of the "one-time" fee into the Nuclear Waste Fund for SNF generated before passage of the NWPA. This issue arises because, as permitted by DOE, a number of utilities elected to defer payment of the portion of the fee which covers SNF generated before the NWPA was enacted. There is concern by DOE that some of those utilities may not be able to make the payment when it is due. Continued funding of the HLW program was addressed in the 1984 Waste Confidence Decision and is being addressed in the ongoing five year review of that decision. A potential shortfall in funds and the question of responsibility for spent fuel in the case of a utility's inability to meet its contractual obligation for payment are potential issues that may have to be considered in preparing the final review of the Waste Confidence Decision.

## 2. Early Implementation of a QA Program:

### Repository QA Program

In its November 1989, report to Congress, DOE identified a date of September 1990, for NRC acceptance of its overall QA program. On December 13, 1989, the staff met with representatives from DOE and the State of Nevada to discuss the ramifications of the report upon the repository QA program and other items of mutual interest on QA. Based on its review of the information in the report and that

presented at the meeting, the staff believes that it and DOE need to meet and ensure that all of the events necessary to meet this September 1990 date have been fully considered. The staff has several areas of concern:

- °While DOE has indicated that a decision has been made that the Yucca Mountain Project Office (YMPO) will report directly to OCRWM instead of the Nevada Operations Office, DOE noted that it was unable to discuss the make-up of the restructured organization for OCRWM and its impact on the existing QA program.
- °Some of the current contractors may be removed from the program and new contractors added. If this happens, new QA programs will have to be accepted by OCRWM and reviewed by the staff in a short time frame. Considering that the implementation of the present contractors' programs have not yet been accepted by DOE, and that these acceptance reviews have been ongoing for the past year, acceptance of any new contractors' programs by September 1990, may be difficult to achieve.
- °Milestones for specific activities and dates have not been completely identified. Without these intermediate steps being identified by DOE, the staff is not able to determine whether DOE has developed a strategy to support its September 1990, date or whether that date can be achieved.
- °The staff has not received the QA program description for YMPO nor has DOE HQ audited YMPO's implementation of its program. The schedules proposed by DOE for acceptance of the YMPO program have not accounted for the staff's review or unanticipated problems; therefore, it is not likely that DOE can achieve its schedule for acceptably implementing the YMPO QA program.
- °DOE has proposed to revise its Quality Assurance Requirements (QAR) document for OCRWM to consolidate the existing documents into one overall QAR document. However, to date, the staff has not received the proposed changes to the overall QAR document for OCRWM. The QAR is the highest-level QA document for OCRWM. Without it, OCRWM is unable to revise its own QA Program Description (QAPD). Therefore, the staff needs to receive and review this report in a timely manner, such that DOE can have an acceptable QAR on which to base its QAPD, which also must be reviewed by the staff.

The staff has not been able to determine the effectiveness of implementation of several contractors' QA programs because the recent DOE audits did not look at sufficient implementation of QA requirements. Accordingly, the staff cannot accept the QA programs unless effective implementation of QA requirements has been demonstrated. Acceptable implementation of the contractors' QA program is one of the major steps needed to meet the September 1990, date.

During observation audits of Sandia National Laboratory (September 11-15, 1989), Los Alamos National Laboratory (November 13-17 1989), U. S. Geological Survey (August 14-23, 1989), and REECo (September 25-29, 1989), the staff was not able to evaluate the qualifications of personnel working on the repository program. The auditors were not permitted to review the training records kept by DOE because of Privacy Act constraints. Therefore, documented objective evidence was not been presented for the DOE or NRC staffs to assure that personnel are qualified to work on the repository program. During the December 13, 1989, bi-monthly QA meeting, NRC and DOE discussed resolution of this issue. DOE has identified a number of actions it must take over the next six months to resolve this issue. This has also been an issue of Congressional concern as discussed in recent letters between Chairman Carr and Congressman Bilbray.

#### Waste Form Producers QA Program

Another area identified by the staff as a concern is the lack of a fully developed and implemented QA program for both DOE glass producers, the WVDP and the DWPF. The staff is concerned that DOE has not sufficiently developed and implemented the QA programs for the glass producers and submitted that information for NRC review. For example, the NRC staff transmitted comments to DOE on OGR/B-14, entitled "Quality Assurance Requirements for High-Level Waste Form Production," on February 7, 1989. DOE has not responded to these comments, to date. However, at the September 9, 1989, bi-monthly QA meeting, DOE indicated that the QA requirements for waste form production would be incorporated into the OCRWM QAR document. NRC comments would be addressed in a QAR revision, and OGR/B-14 would be superseded.

During the September 9, 1989, bi-monthly QA meeting, DOE

noted that the schedule for submitting the QAR revision to NRC for review was November 1, 1989. DOE also stated that milestones and schedules for the qualification of one of the glass producer programs would be provided. At the December 13, 1989, bi-monthly QA meeting, due to a lack of responsiveness from DOE, the staff proposed a set of milestones and schedules that could be used to accept the glass producers QA program. DOE is in the process of reviewing the staff's proposal and will provide comments no later than the next bi-monthly QA meeting scheduled for February 1990.

At present, the NRC staff has received neither the QAR revision nor the QAPDs for both the DWPF and the WVDP. Although the glass producers have been performing pre-production work under a QA program, the programs have neither been accepted by DOE OCRWM nor reviewed by the staff. Without having an accepted QA program in place, OCRWM may be unable to ensure that DWPF and WVDP activities that need to be conducted under a 10 CFR Part 60, Subpart G QA program are properly controlled.

### 3. Early Establishment of Repository Design Parameters:

As noted in the previous Quarterly Progress Report, the NRC staff's SCA documented significant performance assessment concerns in this area. Two technical exchanges on integrating performance assessment into site characterization and scenario development are planned for early 1990 and will provide a forum for discussing the staff's performance assessment concerns and DOE's action to resolve them. If any problems are identified in the technical exchanges, the staff will report them in future Quarterly Progress Reports.

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

The State of Nevada continues to oppose a HLW repository at Yucca Mountain. As part of its opposition, the Nevada Legislature has adopted certain joint resolutions which, in the view of the State, constitute an operative Notice of Disapproval under NWPA. (It has also enacted legislation, AB-222, approved July 6, 1989, declaring the storage of HLW in Nevada to be unlawful.)

The State's position is supported by a legal opinion of the State Attorney General, dated November 1, 1989 which concluded that the adoption of the joint resolution is a

valid Notice of Disapproval. In addition, on December 27, 1989, the State of Nevada brought an action in the 9th U. S. Circuit Court of Appeals. The suit seeks a declaration by the Court that the Nevada legislation constitutes a Notice of Disapproval and further seeks to enjoin DOE from conducting any further studies of the site. (Also, in response to the State of Nevada's continuing refusal to grant air quality permits essential to surface-based site characterization activities, DOE had announced, on November 28, 1989, its plan to sue the State of Nevada if the situation did not change.)

In addition to its legislation, Nevada's Governor wrote the Secretary of Energy on November 14, 1989, listing three elements which the State believes should disqualify the site as a potential HLW repository. These elements included: 1) the potential for future human intrusion; 2) the potential for tectonic activity, including faulting and volcanism during the waste isolation period; and 3) the groundwater travel assumptions by DOE. Nevada has previously raised these concerns to DOE through its comments on the Draft Environmental Assessment, Consultative Draft Site Characterization Plan, and the Site Characterization Plan.

As noted in the previous Quarterly Progress Report, the staff received a letter from the State of Nevada objecting to the staff's approach for accepting DOE's QA program, and to the staff's consultation with DOE, which it considered inconsistent with the separation of roles of the NRC and DOE, specified in NWPA. The staff sent a response to the State on September 28, 1989, stating that that its approach for reviewing DOE's QA programs was consistent with previous Commission and staff positions and did not represent a relaxation of the staff's review effort. The letter also stated that on several occasions, the Commission has taken the position that the staff must be involved early in understanding the DOE technical work, to ensure that regulatory concerns are appropriately considered. In addition, NRC's approach for conducting early consultations is consistent with its role under the NWPA and with the Commission's regulations allowing prospective applicants to informally confer with the staff before filing an application.

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

As noted in the last Quarterly Progress Report, the SCA

identified the issue of conservatism. DOE is presently addressing the concerns expressed in the SCA. During this reporting period, there were no conservatism issues deserving Commission attention.

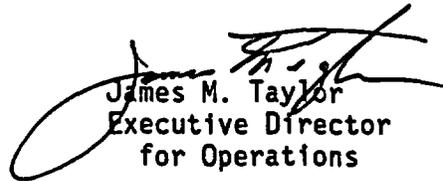
#### 6. Early Resolution of Issues:

On December 20, 1989, DOE briefed the Commission on the status of OCRWM's program. At that briefing, DOE expressed some concern with the staff's activities related to the development of rulemakings and technical positions. Particularly, DOE was concerned that some of the issues identified by the staff to be resolved by rulemakings may more appropriately be addressed in regulatory guides or through DOE topical reports. Also, DOE was concerned about the staff positions taken in some ongoing rulemakings and technical positions. As a solution to its concerns, DOE suggested that a more cooperative approach be used between the staff and DOE in the development of rulemakings and technical positions. In response to the briefing and a DOE letter commenting on the staff's regulatory strategy paper, SECY-88-285, "Regulatory Strategy and Schedules for the High-Level Waste Repository Program", the staff is evaluating DOE concerns to determine if any changes in its program are warranted. SECY-88-285 is scheduled to be updated in March 1990, and will consider the specific DOE concerns. In addition, the staff will be working with DOE to initiate more detailed planning interactions to ensure adequate technical consultations through open meetings during the staff's ongoing development of regulatory requirements and guidance.

In the last Quarterly Progress Report, the staff noted that it was developing a proposed rule to clarify the meaning of "anticipated processes and events and unanticipated processes and events" for repository design and licensing and that the staff expected to provide the proposed rule to the Commission in December 1989. However, since the last Report, comments received from the ACNW, as well as from DOE during its December 20, 1989, briefing to the Commission, have resulted in the staff reevaluating its approach to this rulemaking. Consequently, a task group has been formed to review this rulemaking and develop a new production schedule to be included in the March 1990 update.

During the December 20, 1989, DOE briefing to the Commission, DOE stated its intent to petition the

Commission for a rulemaking addressing the design basis accident (DBA) dose limit. The staff has already begun efforts to develop a proposed rule that will consider the concerns raised by DOE. Under the current schedule for this rulemaking, the proposed rule will be provided to the Commission by July 1990. However, this schedule will be reassessed as part of the March 1990 update of SECY-88-285.

  
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