

3/90 QPR TO DOE/BARTLETT

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MAY 17 1990

Dr. John W. Bartlett, Director
Office of Civilian Radioactive Waste Management
U.S. Department of Energy, RW-1
Washington, D.C. 20585

Dear Dr. Bartlett:

SUBJECT: TRANSMITTAL OF THE NRC STAFF QUARTERLY PROGRESS REPORT ON THE
PRE-LICENSING PHASE OF THE CIVILIAN HIGH-LEVEL RADIOACTIVE WASTE
MANAGEMENT PROGRAM

Enclosed for your information is a copy of SECY-90-032A, the "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." The Commission requested that the staff prepare Quarterly Progress Reports in order to provide it with an assessment of progress being made on action items covering key aspects of the the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) pre-licensing consultation program. This report covers the period from January 1990 through March 1990.

There are three specific concerns that I note for your attention. First, the NRC staff is concerned that there may be some misunderstanding in regard to the September 1990 milestone in DOE's "Draft Project Decision Schedule Revision 1." As noted in its April 9, 1990, comments to DOE on the draft schedule, the staff is concerned that Milestone 19c, to "Accept OCRWM [Office of Civilian Radioactive Waste Management] QA [Quality Assurance] Program," could be mistakenly interpreted as the point when NRC will lift the QA objection noted in its July 1989 Site Characterization Analysis. Until DOE demonstrates its ability to implement its QA program, the SCA objection cannot be lifted.

The second concern is in regard to the volume of greater-than-Class-C (GTCC) waste that will be placed in the geologic repository. During Mr. Leo Duffy's December 20, 1989, briefing to the Commission, the Chairman requested that DOE transmit to the staff available information on GTCC waste. Although your staff has agreed to an interaction on this subject during the next few months, I am concerned that my staff has not received the requested information. This information should be made available to my staff before the interaction.

The third concern is in regard to the absence of an OCRWM approved, fully developed and implemented QA program for the glass producers at the West Valley Demonstration Project and the Defense Waste Processing Facility at Savannah River. Without an accepted QA program in place, OCRWM may be unable to ensure that the glass producers' activities that need to be conducted under the QA requirements of 10 CFR Part 60, Subpart G, are properly controlled.

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Please feel free to contact John J. Linehan, of my staff, if you have any questions. Mr. Linehan can be reached on (301) 492-3387 or FTS 492-3387.

Sincerely,

Original Signed By
Robert M. Bernero

Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

- cc: R. Loux, State of Nevada
- C. Gertz, DOE/NV
- S. Bradhurst, Nye County
- M. Baughman, Lincoln County
- D. Bechtel, Clark County
- D. Weigel, GAO

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~~See enclosure~~

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POLICY ISSUE

(Information)

SECY-90-032A

April 27, 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 Quarterly Progress Report
(January 1990 through March 1990) 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 that deserve Commission
attention. The previous Quarterly Progress Report,
SECY-90-032, discusses activities that occurred between
August and December 1989.

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

NOTE: TO BE MADE PUBLICLY AVAILABLE
IN 10 WORKING DAYS FROM THE
DATE OF THIS PAPER

Contact: Ken Kalman, NMSS
492-0428

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DOE Implementation of Scheduled and Systematic Consultations

- DOE provided the staff with its "Draft Project Decision Schedule Revision 1" on March 1, 1990. On April 9, 1990, the staff provided DOE with two major comments on the Draft, along with its other comments. The first was that the milestone given for accepting the QA program could be misinterpreted as the point when NRC will lift its QA objection. The second was that the Project Decision Schedule (PDS) should indicate milestones for design and development of the Licensing Support System (LSS).
- The staff met with DOE on March 20, 1990, to discuss and schedule interactions through the rest of Fiscal Year (FY) 1990. Emphasis was placed on those interactions having to do with site characterization activities. There was also an agreement to schedule a management meeting to review specific DOE concerns or suggestions regarding the potential rulemakings identified in SECY-88-285, "Regulatory Strategy and Schedules for the High-Level Waste Repository Program."

Early Implementation of a QA Program

- The staff, DOE, and the State of Nevada met on February 15, 1990, and March 21, 1990, to discuss QA. Discussions at both meetings focused on the September 1990 date identified by DOE as a milestone in its PDS for "NRC acceptance" of its QA program. The staff believed that at the February 15, 1990, meeting, it had reached agreement with DOE that September 1990 was the date by which the NRC staff could accept all of the DOE QA program plans for further implementation, and that it was not the date by which the staff would lift its QA objection in the Site Characterization Analysis (SCA) for the start of new site characterization activities. However, in a March 12, 1990, letter and at the March 21, 1990, meeting, DOE was interpreting the September 1990 milestone to mean that time by which the staff would resolve its SCA objection. Consequently, the staff is continuing to work with DOE to ensure that DOE understands NRC's position on the definition of the September 1990 milestone.

- There is a perception by some DOE contractor personnel and some observers, such as the National Research Council, that the NRC QA criteria are inappropriate for scientific investigations, particularly in the earth sciences area. As part of the ongoing NRC-DOE effort to ensure proper and adequate implementation of QA requirements, the NRC staff is planning a workshop with DOE and its contractors to identify and resolve specific concerns with the QA requirements and to highlight the flexibility allowed by them. The workshop is expected to be held this summer.

Early Resolution of State and Tribal Concerns

- The Department of Justice filed suit on behalf of DOE on January 25, 1990, in the U.S. District Court, Las Vegas, Nevada. The suit was filed in an effort to require the State's Division of Environmental Protection to act within 30 days on DOE's applications for the air and water permits that would allow DOE to proceed with its scientific investigations at Yucca Mountain. Nevada officials, claiming that the State had vetoed the repository in Nevada, had returned the unprocessed applications to DOE on December 26, 1989.

Discussion:

1. DOE Implementation of Scheduled and Systematic Consultations

On March 1, 1990, DOE provided the staff with its "Draft Project Decision Schedule Revision 1," for review and comment. Under the Nuclear Waste Policy Act (NWPA) of 1982, as amended, DOE is required to prepare a PDS that includes "...a sequence of deadlines for all Federal agencies required to take action, including an identification of the activities in which a delay in the start, or completion, of such activities will cause a delay in beginning repository operation." Any agency that cannot comply with a PDS deadline must submit to Congress a written report explaining the reason for the failure to comply.

This is the first Draft Revision since the original PDS was issued in March 1986. The Draft Revision reflects DOE's restructured repository program schedule as originally presented in the November 1989 "Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program." In a major departure from the 1986 PDS, which

required the agencies to report failure to comply with any future PDS deadline, the Draft Revision only requires reporting of failure to comply with those critical milestones that occur within three years of issuance of a PDS.

On April 9, 1990, the staff provided comments to DOE on the Draft Revision. The staff had two major comments. First, the staff was concerned that Milestone (19c), "Accept Office of Civilian Radioactive Waste Management (OCRWM) QA Program," could be mistakenly interpreted as the point when NRC will lift the QA objection noted in its SCA. The staff believes that NRC will be able to accept DOE's QA program plans for implementation by September 1990. But until DOE demonstrates its ability to implement its QA program, the SCA objection cannot be lifted. The staff expects, however, that by January 1991, DOE should be able to demonstrate acceptable implementation for those portions of the QA programs needed to begin surface-based testing. NRC's lifting of its QA objection for any part of the program will be contingent on DOE's further demonstration of QA program implementation. The staff's second major comment on the Draft Revision was that the PDS should indicate milestones related to the design and development schedule for the LSS.

During this reporting period, the staff continued its efforts to establish, schedule, and hold systematic consultations with DOE. NRC-DOE technical interactions took place at the rate of one per month during this reporting period, in accordance with the schedule agreed to during the November 8, 1989, NRC-DOE scheduling meeting. One of the more important interactions was a March 6, 1990, NRC-DOE technical exchange on DOE's evaluation of a geophysical test indication that there could be a fault near the site proposed in the Site Characterization Plan (SCP) for the exploratory shaft facility. This interaction established DOE's basis for possible resolution of a major NRC comment on DOE's SCP for the Yucca Mountain site. During this reporting period, there were no interactions between DOE and the U.S. Environmental Protection Agency (EPA) that addressed mixed waste issues.

As part of its continuing effort to hold interactions with DOE in areas where work is ongoing, the staff met with DOE on March 20, 1990, to discuss and schedule interactions through the rest of FY90. Priority was given to those interactions dealing with site characterization activities.

There was also an agreement to schedule a management meeting to review specific DOE concerns or suggestions regarding the potential rulemakings identified in SECY-88-285. This was in response to DOE's December 20, 1989, Commission briefing and pursuant to the staff's February 26, 1990, letter to Mr. Leo Duffy, proposing to meet. A second interaction topic discussed in the December 20, 1989, Commission briefing was the volume of greater-than-class-C (GTCC) wastes. In response to the DOE briefing, the staff, by letter of February 16, 1990, requested that DOE transmit all available information on the projected sources, characterization, and volumes of GTCC waste and identified the need to hold an interaction on this subject. As of April 1990, DOE has not submitted the requested information.

This interaction would help the staff gain background for developing its rulemaking on GTCC waste. At the March 20, 1990, meeting, the DOE representatives present were not in a position to agree to a date for a meeting on GTCC waste, to discuss the volumes and types of wastes. However, they did commit to such a meeting in the next few months. As a result of the March 20, 1990, meeting DOE and the staff scheduled nine interactions through September 1990, in addition to the management meeting on SECY-88-285. It was agreed that the next scheduling meeting will be held July 31, 1990, to establish the interactions for FY91.

The subject of one-on-one scientific discussions between the Center for Nuclear Waste Regulatory Analyses (CNWRA) staff and DOE researchers, held under Appendix 7, On-site Representative Activities, of the NRC-DOE Procedural Agreement, was also discussed at the March 20, 1990, meeting. The first of these scientific interactions, focusing on investigation of thermohydrologic phenomena, were held at Lawrence Berkeley Laboratory on March 12, 1990, and Lawrence Livermore National Laboratories on April 3, 1990. NRC and DOE both considered the interactions worthwhile, and DOE agreed that similar interactions could be scheduled as needed.

2. Early Implementation of a QA Program

Repository QA Program

During this reporting period, the staff, DOE, and the State of Nevada held two meetings on QA. The first was on February 15, 1990, and the second on March 21, 1990. One topic that was discussed at both meetings was the September 1990 date identified by DOE as a milestone in its PDS. At

the February 15, 1990, meeting, the staff understood that it and DOE had reached agreement that September 1990 was the date by which the NRC staff could accept all of the DOE QA programs for further implementation. However, until DOE demonstrated its ability to implement its QA program plans, for all program areas, through development of study plans and technical procedures, the staff would not lift its SCA objection. As discussed earlier in this report, the staff's lifting of its QA objection for any part of the program is contingent upon DOE's further demonstration of QA program implementation.

Contrary to the staff's previous understanding of its agreement with DOE regarding the September 1990 "NRC acceptance" milestone, in a March 12, 1990, letter to NRC, DOE implied that the September 1990 milestone meant that point at which the staff would resolve its SCA objection. At the March 21, 1990, meeting, the staff reiterated the steps necessary for it to lift its SCA QA objection. In that meeting, the staff maintained that the September 1990 acceptance has a much narrower definition, and that additional confidence in the implementation of the DOE program will be needed before the objection can be resolved. The staff is continuing to work with DOE to ensure that DOE understands NRC's position on the definition of the September 1990 milestone.

Also discussed in the March 21, 1990, meeting was DOE's progress in resolving the Privacy Act issue. Privacy Act restrictions prevented QA auditors and observers from viewing the training records of personnel working on the repository program. Consequently, the auditors and observers were unable to independently evaluate the qualification of the repository personnel. As reported in the last Quarterly Progress Report, a Federal Register notice describing a new system for maintaining records for the high-level waste repository program was in the DOE concurrence process. This new record system will be accessible to NRC, DOE and the State of Nevada. At the March 21, 1990, meeting DOE stated that the Federal Register notice would be published on April 9, 1990, with a 60-day public comment period. However, subsequent internal problems have caused DOE to further delay publication of the notice by two more months. A system that allows DOE and NRC staff review of certain training and qualification records is being implemented in the interim. The staff, DOE, and the State of Nevada agreed to hold the next monthly QA meeting on April 27, 1990.

Another major area of staff concern regarding the repository QA program is the criticism regarding QA practices. There is a perception by some DOE contractor personnel and some observers, such as the National Research Council, that NRC QA requirements are hardware-oriented and inappropriate for scientific investigations, particularly in the earth sciences area. The staff believes that the NRC regulations on QA for the repository have sufficient flexibility to enable scientists to maintain their freedom to be creative and to address the unexpected in the laboratory or field, while at the same time providing the documentation needed for licensing.

On an ongoing basis, the NRC staff has been interacting with DOE and has commented on areas where DOE requirements appear to be in excess of those required by NRC regulations and guidance. In addition to the bi-monthly NRC-DOE meetings to discuss the status of QA program implementation, the staff expects to hold a workshop with DOE and its contractors, this summer, to identify and resolve specific concerns with the QA requirements and to highlight the flexibility allowed by them. The staff plans to discuss specific examples where QA practices have been implemented by geoscientists and geengineers.

Waste Form Producers QA Program

The staff remains concerned about the lack of a fully developed and implemented QA program for the DOE glass producers. The staff still has not received QA program documents to review for the West Valley Demonstration Project (WVDP) or the Defense Waste Production Facility (DWPF). The last Quarterly Progress Report noted that no later than February 1990, DOE would be submitting schedules and milestones regarding the development of QA programs for the waste glass producers. Due to the current reorganization at DOE, the planned date for submittal has been moved back to April 1990. As noted in the last Quarterly Progress Report, although the glass producers have been performing pre-production work under a QA program, the program has neither been accepted by DOE's OCRWM nor reviewed by the NRC staff. Without an accepted QA program in place, OCRWM may be unable to ensure that WVDP and DWPF activities that need to be conducted under 10 CFR Part 60, Subpart G, "QA Programs," are properly controlled.

3. Early Establishment of Repository Design Parameters

As noted in previous Quarterly Progress Reports, 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 later this year and will provide a forum for discussing the staff's performance assessment concerns and DOE's action to resolve them. Any problems identified in these technical exchanges will be noted in future Quarterly Progress Reports.

4. Early Resolution of State and Tribal Concerns

As discussed in the last Quarterly Progress Report, on December 27, 1989, the State of Nevada filed a suit in the Ninth Circuit seeking a declaratory judgment that its legislative actions with respect to the Yucca Mountain site constituted an effective "Notice of Disapproval" under NWPA. On December 26, 1989, the State, claiming to have adopted an effective veto under the NWPA, had returned DOE's applications for environmental permits without having processed them. The permits would allow DOE to proceed with the necessary scientific investigations at Yucca Mountain, in order to determine the site's suitability. Subsequently, the Department of Justice filed suit on behalf of DOE on January 25, 1990, in U.S. District Court, Las Vegas, Nevada. The suit was brought against the State of Nevada in an effort to require the State's Division of Environmental Protection to act within 30 days on DOE's applications for air and water permits.

It should also be noted that on February 2, 1990, a group of 21 electric utilities filed motions to intervene in the DOE suit against Nevada. The utilities contribute to the Nuclear Waste Fund, which was established by the 1982 Act, as a means to provide funding for construction of a high-level waste (HLW) repository. They allege that continued delays in DOE's commercial HLW repository program would increase their Waste Fund contributions and would also force them to build interim storage capacity at significant additional expense.

Nevada filed a motion on February 20, 1990, asking the U.S. District Court in Las Vegas to defer action on the DOE

lawsuit on the grounds that the NWPA gives the Courts of Appeals exclusive jurisdiction and further that the issues raised by DOE are the same as those presented in the suit it filed against DOE in the 9th Circuit on December 27, 1989. DOE claims, however, that the issues are not entirely the same, particularly in that only its complaint addresses Nevada's refusal to process the DOE application for environmental permits.

Representatives of Nevada participated in most of the technical exchanges and meetings between NRC and DOE during this quarter. There have been no significant interactions with Indian tribes to report during this quarter. Representatives of the Western Shoshone Nation and the National Congress of American Indians continue to receive notification of upcoming meetings, as well as Advisory Committee on Nuclear Waste meeting transcripts and letter reports relative to the program.

5. Adoption of the Policy of Conservatism

As noted in previous Quarterly Progress Reports, the SCA identified the issue of conservatism. DOE is still developing its response to the concerns expressed in the SCA. During this reporting period, there were no conservatism issues deserving Commission attention.

6. Early Resolution of Issues

As noted previously in this report, during the December 20, 1989, briefing to the Commission on the status of the OCRWM program, DOE raised its concerns related to the management of GTCC. DOE noted that, based on its current calculations of the volume of GTCC waste, which is much greater than was previously estimated, disposal may be a significant problem that could require a second repository for its resolution. Although the staff had reviewed the most current information that DOE had published on GTCC waste (DOE/RW-0006, Rev. 5, Integrated Data Base for 1989: Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics), and had recognized that there are uncertainties associated with the volume estimates and characteristics of GTCC waste, it was unclear about the basis for DOE's revised estimates. In response to the briefing and a request from Chairman Carr, the staff, by letter dated February 16, 1990, has requested from DOE all information pertaining to the sources, characteristics, and volumes of GTCC waste. As of April 1990, none of this requested information has been submitted.

Subsequent to its receipt and review of the information, the staff will interact with DOE to develop an adequate technical basis for DOE's concerns, and, possibly, to resolve those concerns before taking any further staff action on its rulemaking on criteria for GTCC waste.

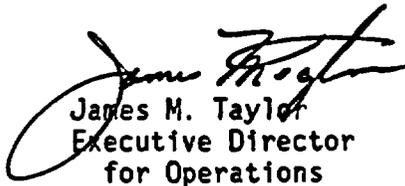
Previous Quarterly Progress Reports discussed staff efforts toward developing a proposed rule to clarify the meaning of "anticipated processes and events and unanticipated process and events" (APEs and UPEs). The staff has determined that the prudent approach to clarifying the meaning of APEs and UPEs would be to combine this action with the rulemaking conforming 10 CFR Part 60 to the EPA standard. The staff will be working with EPA as EPA rewrites its standard to address the issues that were to be covered in the APEs and UPEs rulemaking.

The staff noted in the last Quarterly Progress Report that it had begun work on a proposed rulemaking on "Design Basis Accident Dose Limit." The rulemaking approach was to make 10 CFR Part 60 the same as 10 CFR Part 72, in areas related to the mitigation of accident consequences, and the definition of items important to safety. The staff had completed its work in these two areas and was beginning to prepare a draft rule for Commission consideration. However, in its efforts to develop the rule, the staff identified an issue that could have major impact on the rulemaking approach. Because the surface facilities for the repository and for a monitored retrievable storage facility are similar, 10 CFR Part 60 and 10 CFR Part 72 should offer equivalent protection for these similar facilities. However, the staff found that the criteria in 10 CFR Part 72 were more detailed than those in 10 CFR Part 60. Consequently, the staff is systematically analyzing 10 CFR Part 60 and 10 CFR Part 72, and will consider whether any further changes to 10 CFR Part 60 should be recommended.

During this reporting period, the staff made substantial progress on the draft Format and Content Regulatory Guide (FCRG) for the License Application for the High-Level Waste Repository. The draft FCRG was sent to RES on February 23, 1990, for preparation for publication in the Federal Register. It is anticipated that the draft guide will be published for public comment by May 1990.

The staff has also undertaken, with the Office of the General Counsel (OGC), an effort to review and recommend revisions to the Topical Guidelines, for inclusion of

information in the LSS. Interim Topical Guidelines were included in the Federal Register, when the negotiated rule on the LSS was published, with the understanding that the staff and OGC would revisit them. In a January 12, 1990, memorandum responding to the August 1, 1989, staff requirements memorandum on SECY-89-186, entitled, "Considerations of Revisions to the Commission's Rules of Practice in Order to Further Streamline the High-Level Waste Licensing Process," the Executive Director for Operations and the General Counsel informed the Commission of their plan to review and revise the Topical Guidelines. The staff and OGC will provide a paper to the Commission on their recommendations in May 1990.


James M. Taylor
Executive Director
for Operations

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