

AUG 31 1992

Dr. John W. Bartlett, Director
Office of Civilian Radioactive
Waste Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Dr. Bartlett:

SUBJECT: TRANSMITTAL OF THE 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-92-275, 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 Nuclear Regulatory Commission staff prepares Quarterly Progress Reports in order to provide the Commission with an assessment of progress being made on key aspects of the NRC and the DOE pre-licensing consultation program. This report covers the period from April 1992 through June 1992. I have summarized below two areas of concern from the enclosed report that I would like to bring to your attention.

First, the staff identified in a May 26, 1992, letter to DOE some concerns regarding the completeness and timeliness of DOE submittals. In this letter the staff noted the need for DOE to transmit only those study plans that are complete and have been approved by DOE's Office of Civilian Radioactive Waste Management (OCRWM). Another concern, noted in the letter that affects the staff's ability to provide efficient and timely pre-licensing consultation, was DOE's "Exploratory Studies Facility Alternatives Study" (ESFAS). Although this study was conducted, in part, in response to concerns presented in the staff's Site Characterization Analysis, when it was provided to the staff, there was no identification of what aspects of the ESFAS responded to the staff's concerns. The staff also raised a concern in the May 26, 1992, letter with DOE's lack of substantial Site Characterization Plan (SCP) progress reports, which was originally documented in my June 25, 1990, letter to you. To date, the staff does not believe that DOE has been responsive to this letter. However, the staff is currently reviewing the latest SCP progress report that was submitted on June 4, 1992, to determine if it is responsive.

Second, during the February and April 1992 NRC/DOE Quality Assurance (QA) meetings, the staff discussed its concerns with DOE's proposal not to submit the QA program for the Management and Operating (M&O) contractor to NRC for review and acceptance. DOE then reiterated its position in a June 29, 1992, letter to the staff. While the NRC staff agrees with OCRWM that NRC acceptance of the OCRWM QA program establishes that the NRC staff has a certain level of confidence in the OCRWM QA program, the staff believes NRC review and acceptance of the M&O program is needed because of the present scope and expected future scope and program of the M&O. By letter dated July 28, 1992, the staff informed DOE of its position and also of the fact that it had started to review the M&O QA

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Dr. John W. Bartlett

Program Description. In addition, the staff informed DOE that before the M&O is allowed to conduct quality-affecting site activity work, it needed to evaluate the acceptance of the effectiveness of M&O implementation of its QA program either through a qualification audit of the M&O QA program or the review and evaluation of a sufficient quantity of M&O quality-affecting activities.

If you have any questions, please feel free to contact me at (301) 504-3352, or Joe Holonich, of my staff, at (301) 504-3387.

Sincerely,

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

Enclosure: As stated

- cc: R. Loux, State of Nevada
- T. J. Hickey, Nevada Legislative Committee
- C. Gertz, DOE/NV
- S. Bradhurst, Nye County, NV
- M. Baughman, Lincoln County, NV
- D. Bechtel, Clark County, NV
- D. Weigel, GAO
- P. Niedzielski-Eichner, Nye County, NV
- B. Mettam, Inyo County, CA
- V. Poe, Mineral County, NV
- F. Sperry, White Pine County, NV
- R. Williams, Lander County, NV
- P. Goicoechea, Eureka County, NV
- L. Vaughan II, Esmeralda County, NV
- C. Shank, Churchill County, NV

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JHolonich, HLPD	On-Site Reps	KKalman, HLPD	RJohnson, HLPD

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Date:08/18/92	:08/27/92	:08/18/92	:08/18/92	:08/18/92	:08/28/92	:08/31/92

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POLICY ISSUE
(Information)

August 6, 1992

SECY-92-275

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 through June 1992) on the pre-licensing phase of the
U.S. Department of Energy's (DOE's) civilian high-level
radioactive waste (HLW) management program.

Background: In the Quarterly Progress Report on the pre-licensing phase
of DOE's program, the Nuclear Regulatory Commission staff
discusses the key aspects of the NRC/DOE pre-licensing
consultation program that deserve Commission attention.
The previous Quarterly Progress Report, SECY-92-167,
discussed activities that occurred from January through
March 1992.

Executive Summary: The most significant activities during this period were
related to the following areas: (1) DOE Implementation of
Scheduled and Systematic Consultations; and (2) Early
Implementation of a Quality Assurance (QA) Program.

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

Contact:
Ken Kalman, NMSS
504-2428

9/10/92

DOE Implementation of Scheduled and Systematic Consultations

- o On April 28-30, 1992, NRC staff met with representatives of the DOE, the State of Nevada, and affected units of local government in a technical exchange on scenarios and construction of a Complementary Cumulative Distribution Function (CCDF). On the basis of the discussions, both NRC and DOE staffs believe that about six of the scenario-related comments in the Site Characterization Analysis (SCA) could now be closed.
- o On June 2, 1992, NRC and DOE staffs met, in a public meeting, to discuss the open items concerning proposed revisions to the existing NRC/DOE procedural agreement. The State of Nevada and affected units of local governments were invited to attend but declined. The purpose of this meeting was to resolve language differences between the two agencies on four matters involving computer codes/models and data base management, acquisition of site samples, access of NRC's onsite representative to DOE and DOE contractor personnel and documents, and videotaping of geologic features. Both staffs eventually agreed on the proposed wording for each of the aforementioned topic areas except the acquisition of site samples which is presently under negotiation.
- o At DOE's request, the staff completed its review of a DOE contractor report, "Report of Early Site Suitability Evaluation of the Potential Repository Site at Yucca Mountain, Nevada" (ESSE). Based on its review, the staff believes the application of the 10 CFR Part 960 siting guidelines is inconsistent with the original intent as concurred upon by the Commission and that the 10 CFR Part 960 high-level findings in the area of tectonics, erosion and natural resources may be premature, based on the available dates, and inconsistent with the intent of the siting guidelines. The staff briefed the Advisory Committee on Nuclear Waste (ACNW) on the results of its review. After reviewing comments from the ACNW, the staff will transmit its comments to DOE.
- o Although the staff continues to review DOE documents as they are submitted, there are problems regarding the

completeness and timeliness of DOE submittals. The staff has raised this as an issue with DOE in a May 26, 1992, letter, and is presently working with DOE to address this problem.

- o The NRC onsite representatives continued to monitor DOE's site characterization activities including the excavation of a 1000-foot trench in Midway Valley, to assess whether faults exist in the area proposed for the surface facilities, and drilling with the LM-300 drill rig, which will provide detailed information on hydrologic properties of the unsaturated zone.

Early Implementation of a QA Program

By letter dated May 8, 1992, the NRC staff responded to a concern from the State of Nevada regarding NRC's lifting of Objection 2. Specifically, the State did not believe that the SCA objection should be lifted without the staff first accepting the Management and Operating (M & O) contractor QA program. In its response, the staff stated that it believes its decision to lift the Objection was correct because each of the participants which were in place when the SCA Objection was initiated, and currently involved in site characterization activities, have developed and are implementing QA programs which meet NRC requirements.

Discussion:

1. DOE Implementation of Scheduled and Systematic Consultations

During this reporting period, several interactions were conducted with DOE. On April 28-30, 1992, NRC staff met with representatives of the DOE and the State of Nevada in Albuquerque, New Mexico, in a technical exchange on scenarios and construction of a CCDF. Representatives from affected units of local governments also attended the technical exchange. Topics discussed included the definition of scenarios, the identification and screening of scenarios, the comments made by NRC staff on the treatment of scenarios in DOE's Site Characterization Plan (SCP) and the comments made by the NRC staff regarding revisions of the U.S. Environmental Protection Agency (EPA) HLW standard. On the basis of the discussions, both the NRC and DOE staffs believe that about six of the scenario-related comments from the SCA could now be closed. However, DOE must document the

information presented at the meeting and formally submit it to NRC. NRC will review the responses to see if DOE has acceptably addressed NRC's concerns. As a result of the technical exchange, DOE also requested an early meeting, which is scheduled for July 22, 1992, to discuss the NRC's proposed "three-bucket approach" for making the EPA standard more practicable.

On May 19, 1992, NRC and DOE conducted a technical interactions scheduling meeting at the NRC Headquarters. The purpose of the meeting was to establish a schedule of technical interactions between NRC and DOE staff for the second part of FY 1992. The topics of the scheduled technical interactions were: 1. DOE's progress in evaluating faulting; 2. Format and content of DOE Yucca Mountain study plans; 3. NRC's "Three-Bucket Approach" for implementation of 40 CFR Part 191; 4. DOE's approach to resolving volcanism-related study plan and site characterization concerns; 5. Center for Nuclear Waste Regulatory Analyses (CNWRA) application of systems engineering to the HLW program; 6. NRC's observation of DOE's Waste Isolation Pilot Project round table discussion; and 7. DOE's total system performance assessment results. A subsequent technical interactions scheduling meeting was scheduled for November 1992, to decide the topics for technical interactions during the first part of FY 1993. As part of its normal practice, the staff invited the State of Nevada and affected units of local governments. However, they did not attend.

NRC staff met with representatives of DOE, the State of Nevada, and affected units of local government on May 27, 1992, to discuss a DOE annotated outline (AO) for a topical report on erosion at the Yucca Mountain site. During the meeting, NRC staff heard presentations from U.S. Geological Survey (USGS) and Los Alamos National Laboratory investigators responsible for site studies on erosion. As discussed later in this report, the State of Nevada has raised a concern with the staff's efforts on topical reports. A follow-up management meeting to discuss the role and scope of topical reports is planned.

On June 2, 1992, NRC and DOE staff met to discuss the open items concerning proposed revisions to the existing NRC/DOE procedural agreement to implement the pre-licensing phase of the NRC/DOE statutory responsibilities. This was the third meeting on this subject during the past year. The purpose of this

meeting was to resolve language differences between the two agencies on four matters involving computer codes/models and data base management, acquisition of site samples, access of NRC's onsite representatives to DOE and DOE contractor personnel and documents, and videotaping of geologic features. Both staffs eventually agreed on the proposed wording for each of the aforementioned topic areas except acquisition of site samples, which is presently under negotiation. The staff is presently working with DOE to finalize these words. The State of Nevada and affected units of local governments were invited to this interaction, but did not attend.

On June 3, 1992, the staff met with representatives of DOE, the State of Nevada, and Clark County, Nevada, to discuss items of mutual interest regarding DOE's license application AO initiative. The meeting was also attended by representatives of the Edison Electric Institute, the CNWRA, and several DOE contractors. The AO initiative was begun at the staff's suggestion as a method of testing the usefulness of Draft Regulatory Guide DG-3003, "Format and Content of the License Application for the High-Level Waste Repository" (FCRG).

DOE decided to expand the concept of the AO from what was proposed by the staff and use it to attempt to develop, through an iterative process, increasingly complete versions of the AO which will lead to a complete license application for a HLW repository. A similar effort was undertaken for the Monitored Retrievable Storage (MRS) license application.

During the meeting, DOE representatives made two presentations regarding the process for developing the AO and responded to several questions from the NRC staff and from the representatives of the State of Nevada. The questions centered on the relation of the AO to other programmatic documents, particularly those that were either statutorily required or that had been the subject of previous agreements related to issue resolution or performance allocation in the HLW program. These questions had been previously raised by the staff in a letter dated May 22, 1992. DOE asserted that the AO initiative did not negatively impact any of these existing documents. DOE stated that it would address these questions in the next AO submittal, which is scheduled for September 1992. The staff had previously raised similar concerns about the AO initiative at a

February 1992 management meeting with DOE, and it will continue to follow the AO initiative closely. The staff was encouraged by statements from DOE representatives regarding the acceptability and usefulness of the FCRG.

To date, the staff has reviewed the draft AO for the HLW repository and found it to be consistent with the FCRG. The NRC and CNWRA staff are still reviewing the AO for the MRS facility. This review is discussed further in Section 6 of this Quarterly Progress Report.

As noted in the last Quarterly Progress Report, on March 3, 1992, DOE transmitted the ESSE for review and comment. NRC staff completed its review of the ESSE and met with the ACNW on June 17, 1992, to discuss the results of the staff's review. This report is the result of an evaluation by DOE contractors to determine if there is evidence of features or conditions that could render the Yucca Mountain site unsuitable for further site characterization. Criteria for the evaluation are the site disqualifying and qualifying conditions stated in DOE's HLW regulations, 10 CFR Part 960.

Based on its review of the ESSE, the staff believes that the application of the 10 CFR Part 960 siting guidelines in the evaluation is inconsistent with its original intent as concurred upon by the Commission. For example, it appears that discussions in the ESSE imply that the engineered barrier system may be used to compensate for possible deficiencies in the site. In addition, the staff believes that the 10 CFR Part 960 high-level findings in the areas of tectonics, erosion, and natural resources presented in the ESSE may be premature, based on the available data, and inconsistent with the intent of the siting guidelines. Once the staff has completed its review of comments from the ACNW, it will transmit its comments to DOE.

On May 26, 1992, NRC staff responded to a DOE letter concerning the status of study plans undergoing review by NRC. In its letter, the staff noted concerns related to the need for DOE to transmit only those study plans that are complete and have been approved by DOE's Office of Civilian Radioactive Waste Management (OCRWM). At the same time, the staff also expressed a concern that the semi-annual progress reports have not addressed NRC SCA and study plan concerns and do not include up-to-

date information on the status of study plans, studies, and efforts toward resolution of SCA concerns, or changes to the site characterization program.

The staff requested, in its earlier review on the first progress report, that the reports include significant site characterization results and references to where the details of these results were in the report, or cite the references which include the details of these results. Further, the staff stated that progress reports should include the status of study plans under development, and requested that DOE address progress toward closure of NRC SCA and study plan concerns. To date, the staff does not believe that DOE has been responsive to its request and is working with DOE to address this concern.

By letter dated June 4, 1992, the staff received the progress report due in December 1991. The staff began its review of this report, but has not yet determined if DOE has been responsive to the concerns raised by the staff. The staff will report on the result of its review in the next Quarterly Progress Report.

The NRC onsite representatives continue to monitor DOE's site characterization activities including the excavation of a 1000-foot trench located in Midway Valley, which is the proposed site of the surface facilities for the Yucca Mountain HLW repository. Work began on the trench on May 27, 1992, and it is now approximately one-half complete. The trench will be used to assess whether faults exist in the area proposed for the surface facilities. After completion of the trench and trench mapping by Yucca Mountain project investigators, a DOE/NRC/State of Nevada/affected units of local government technical exchange is planned for September 16-17, 1992, to examine and discuss the results of work in the trench.

Also on May 27, 1992, drilling with the LM-300 drill rig began at the Yucca Mountain site. The current drill hole is planned for approximately 1600 feet in depth and will penetrate the saturated zone. The LM-300 applies dry drilling technology to obtain core and cuttings without disturbing the in situ conditions of the site. The hole is being drilled to provide detailed information on hydrologic properties of the unsaturated

zone. Although eight to nine holes of this type are proposed, only three are planned at this time. Other drilling at the site included shallow holes (approximately 200 feet) for the purpose of characterizing infiltration rates at the site. These activities are also being followed by the NRC onsite representatives.

There were no specific interactions between DOE and the EPA on issues concerning high-level radioactive mixed waste and the Resource Conservation and Recovery Act during this reporting period.

2. Early Implementation of a QA Program

The previous Quarterly Progress Report noted that the State of Nevada had a concern regarding the NRC's lifting of SCA Objection 2. Specifically, the State did not believe that the SCA objection should be lifted without the staff first accepting the M & O contractor QA program. The State's concern was that the staff had not reviewed and accepted the DOE M & O contractor's program, and that there was insufficient implementation of participant QA programs to determine if the programs were effective. The M & O contractor is responsible for the overall management and integration of the OCRWM program.

By letter dated May 8, 1992, the NRC staff responded to the State of Nevada concerns. In this response, the staff stated, that it believes that the decision to lift the Objection was correct. This is because each of the participants which were in place when the SCA Objection was initiated, and currently involved in site characterization activities, have developed and are implementing QA programs which meet NRC requirements. The staff further noted that during the July 7, 1988, QA meeting, the staff and DOE had agreed that DOE would request NRC's acceptance for all DOE and DOE contractor programs. This request would not be made until DOE had first accepted the QA Program Description (QAPD), conducted an implementation audit, and accepted the program itself. Although the M & O contractor was not involved in the program at that time, the staff upheld in the May 8, 1992, letter that, due to the significance of the M & O program, the same basic process and steps would still need to be applied. Therefore, the staff's present position is that DOE should submit the M & O QAPD for staff review, evaluation and acceptance.

The staff raised this concern to DOE at the February and April 1992, NRC/DOE QA meetings. In response, DOE provided a rationale for not submitting the M & O QAPD and QA program for NRC acceptance in a letter dated June 29, 1992, which is also being reviewed by the NRC staff. The M & O QAPD was transmitted to the NRC staff for information on April 22, 1992, and is being reviewed. The staff intends to conduct the same level of review for the M & O QAPD as it has for the other participant QAPDs as well as ensuring that DOE demonstrates acceptable implementation of the M & O program.

During this reporting period, NRC and CNWRA QA and technical staff observed OCRWM audits of the USGS, the Yucca Mountain Site Characterization Project Office, Science Applications International Corporation/Technical and Management Support Services, Raytheon Services Nevada, and observed an internal M & O readiness review of QA program controls. NRC QA staff also made an onsite visit to review QA verification of current drilling activities at Yucca Mountain. No findings were identified that would preclude DOE from continuing with surface-based site characterization or other quality-affecting activities.

3. Performance Assessment

The Quarterly Progress Report for the period October through December 1991 noted that the staff had identified several concerns with DOE's Waste Acceptance Process (WAP). In subsequent discussions with DOE, it became apparent that DOE was somewhat uncertain about the intent of the regulations and what actions the NRC staff thought were needed to satisfy the regulations.

Consequently, by letter dated May 19, 1992, the staff provided an overview of the regulatory requirements pertinent to waste package design and performance, identified some activities that DOE should consider before finalizing the design of the waste form, and requested that DOE provide the NRC staff with an updated version of the WAP and WAP baseline documents and implementation schedule. DOE has reviewed the contents of the letter and indicated that it was in the process of responding to the NRC letter.

On June 16-17, 1992, NRC staff attended an open meeting sponsored by a panel of EPA's Science Advisory Board. DOE and its contractors also attended. NRC staff presented an overview of work, done under the iterative performance assessment program, to assess carbon-14 releases, including mechanistic models for source term, transport, and geochemical effects. Considerable controversy exists among EPA, DOE, Electric Power Research Institute (EPRI), the State of Nevada, and other parties as to whether the current EPA limits on releases of gaseous radionuclides, including carbon-14, are more stringent than necessary to protect public health and safety adequately.

EPA reviewed existing information for a repository in the unsaturated zone, examining the potential for gaseous release of carbon-14 and its consequences. EPA also recommended that the potential for gaseous release of iodine-129 be considered by the panel. DOE and the EPRI presentations attempted to demonstrate that release of a large fraction of the carbon-14 inventory to the environment would have inconsequential health effects, and would be costly to reduce to lower levels. The State of Nevada representative questioned whether supposedly worst case models used in some of the carbon-14 dose calculations were truly conservative. He also questioned the need for a permanent solution to the waste problem at this time.

4. Early Resolution of State and Tribal Concerns

The last Quarterly Progress Report noted that NRC staff had been invited to a May 14, 1992, meeting in Las Vegas, Nevada, of the State, Local, and Indian Tribe Working Group. The staff met the local representatives and explained its regulatory role in the area of HLW repository, shipping casks and MRS facility licensing.

Representatives from DOE and its contractors discussed the ESSE report, focusing on transportation, socioeconomics, and health physics. The State of Nevada, the ten affected units of local government, as well as representatives of the Moapa Band of Paiutes and Western Band of Duckwater Shoshone Indians constitute the membership of the Working Group.

The NRC staff has also contacted Senator Thomas Hickey, Chairman of the Nevada Legislative Commission's Committee on HLW. Senator Hickey, who has expressed a

desire to meet with NRC staff, to discuss issues, has been assured that the staff is available to meet, at his convenience. Any future meetings will be noted in this section of the Quarterly Progress Report.

DOE has continued to make progress on its site characterization work at Yucca Mountain. On May 14, 1992, the Nevada Division of Environmental Protection issued the modified Underground Injection Control permit authorizing DOE to inject water and various tracers, including gas, into 53 wells located at the Yucca Mountain site. This permit became effective on May 27, 1992.

Mr. Robert R. Loux of the Nevada Nuclear Waste Projects Office wrote letters, dated June 16, 1992, to the Chairman and to the Deputy Director of the NRC's Division of High-Level Waste Management, continuing a dialogue that began at the February 6, 1992, NRC/DOE Management Meeting on Pre-licensing Consultation. Mr. Loux was concerned that the staff may have "retrenched" from the agreements reached on issue closure at the February 6, 1992, meeting by holding a technical exchange with DOE on May 27, 1992, to discuss the format and content of the AO of a proposed DOE topical report on erosion before a statement of scope, purpose, and limit of review on topical reports was prepared by the staff. Mr. Loux also perceived inconsistencies in the "interpretations" of the "agreement reached at the February 6, 1992," by various members of the staff and the Commission.

Regarding Mr. Loux's first concern on the staff's interactions with DOE on the annotated outline for DOE's proposed topical report on erosion, the staff's purpose in holding the technical exchange was to provide comments to DOE on the general format and construction of a sample topical report. The staff's willingness to provide such guidance to DOE is within the bounds of pre-licensing consultation as discussed in both the February 6, 1992, NRC/DOE Management meeting and the May 27, 1992, NRC/DOE technical exchange.

Regarding the inconsistencies perceived by Mr. Loux, the staff does not believe that there is evidence of such inconsistencies. The agency position on issue closure, which is based on 10 CFR 60.18(1), remains as it was discussed in the February 6, 1992, NRC/DOE Management Meeting on Pre-licensing Consultation. This position

is that issue resolution at the staff level only means that there are no more questions or disagreements at that time. Equally important, the staff has the right and the responsibility to reopen an issue or request further information on any issue during the pre-licensing period, when warranted by new information or analyses. This position was reaffirmed by the Commissioners during a June 24, 1992, presentation to them by Dr. John Bartlett of DOE. The staff is presently preparing a response to Mr. Loux which addresses his concerns.

5. Rulemaking and Regulatory Guidance Development

On June 8, 1992, the Director of the Office of Nuclear Material Safety and Safeguards (NMSS) signed the Federal Register notice announcing the availability of NUREG-1451, the final Staff Technical Position (STP) on "Investigations to Identify Fault Displacement Hazards and Seismic Hazards at a Geologic Repository." This STP provides guidance on acceptable approaches for collecting fault and earthquake data to be used as input for the analysis of hazards, for both the preclosure and postclosure performance periods.

Also, during this reporting period, the staff completed work on the final draft STP on "Geologic Repository Operations Area Underground Facility Design-Thermal Loads" and transmitted it to the ACNW, for ACNW's review. The staff is scheduled to brief the ACNW in July 1992. This STP is intended to provide DOE with guidance on an acceptable methodology for compliance demonstration that includes predicting thermal and thermo-mechanical response of the host rock, surrounding strata, and groundwater system.

During this reporting period, the NRC staff prepared the draft text of a proposed rulemaking on "Design Basis Events for the Geologic Repository Operations Area," and briefed the ACNW on this proposed rulemaking on May 28, 1992. The ACNW's comments were favorable. The staff is currently preparing a public comment draft package for Commission approval. In support of this proposed rulemaking activity, the CNWRA conducted a study to document the sufficiency and adequacy of the existing preclosure repository operational criteria of 10 CFR Part 60. This study provided the technical basis for the rulemaking, and is expected to culminate in the publication of a NUREG report.

The CNWRA also completed the report, "High-Level Waste Repository Functional Analysis," (CNWRA 91-001, March 1992). This report identified HLW repository functions related to safety and isolation. This work is used in the Repository Operational Criteria and Repository Isolation Criteria work efforts to systematically analyze the adequacy and sufficiency of 10 CFR Part 60.

6. MRS

During this reporting period, the staff received copies of DOE's "Monitored Retrievable Storage Facility Annotated Outline Skeleton Text for the Preparation of a License Application," for comment. The AO is under review by the CNWRA, and staff comments are anticipated to be sent to DOE in July 1992. Several iterations per year of the AO could be expected, dependent on obtaining a host site and progress of the design for the MRS. As noted in Section 2 of this Quarterly Progress Report, on April 9, 1992, NRC staff observed DOE's readiness review of its M & O contractor. The review focused on the procedures required to begin quality-affecting design work. This relates to the MRS, as well as to other activities.

A number of groups have expressed interest in hosting an MRS site and have applied for, and received, \$100,000 Phase I grants, from DOE, to study the feasibility of hosting an MRS. On March 13, 1992, the Mescalero Apache Indian Tribal Council, Mescalero, New Mexico, completed Phase I and applied for \$200,000 for the first of a two part Phase II grant from DOE. This Phase II grant was awarded on April 20, 1992. The Mescalero Apache Indian Tribal Council will use this funding to continue its fact-finding studies and public information efforts.

The Fremont County, Wyoming, Citizens Advisory Group held a series of public meetings in April. On April 2, 1992, NRC staff participated in the first public meeting and discussed NRC's role in licensing an MRS. Two Indian Tribes in Oklahoma, the Chickasaw Indian Nation and The Sac and Fox Nation, have declined their Phase I grants from DOE.

On April 8, 1992, DOE published a notice announcing the extension of the application deadline for Phase I grants to June 30, 1992, and the extension of the application deadline for Phase II grants to September 30, 1992,

Since the last report, DOE has received four additional Phase I grant applications from the following groups: San Juan County, Utah; Ponca Tribe, Oklahoma; Caddo Tribe, Oklahoma; and Ft. McDermitt Paiute Shoshone, Nevada/Oregon. To date, DOE has awarded six Phase I grants of \$100,000 and one Phase II grant. Eleven Phase I grant applications are currently under review.

On June 25-26, 1992, the staff addressed the Legislative Working Group on MRS of the National Conference of State Legislators. The staff described the NRC's licensing role in reviewing MRS safety and environmental impacts.

7. Spent Fuel Storage and Transportation System Compatibility

There have been no significant design developments, in spent fuel storage and transportation system compatibility, since the October 1991, Commission Paper, "U.S. Department of Energy and Industry Progress in Developing Cask Designs to Achieve Compatibility for Dry Storage and Transportation Purposes" (SECY-91-313). However, the staff understands that the Sacramento Municipal Utility District is considering the selection of the Standardized NUHOMS-24P spent fuel storage design, as part of a DOE cooperative program to demonstrate the licensing of a dual-purpose storage/transport system for its Rancho Seco Independent Spent Fuel Storage Installation.

8. Transportation

There have been no significant developments in transportation during this reporting period.

9. Research

During this reporting period, there were three significant activities. From April 9-10, 1992, the Office of Nuclear Regulatory Research (RES), NMSS and CNWRA staffs met with the Swedish Nuclear Power Inspectorate staff, to discuss development of a technical paper on validation strategies for HLW performance assessment models. The validation approaches discussed were derived, in part, from the ongoing INTRAVAL Project, and its predecessors, INTRACOIN and HYDROCOIN. The objective of the technical paper is to develop and document guidance on validation of performance assessment models, for nuclear waste

repositories, from a regulatory perspective, for HLW licensees. A draft outline of the paper was developed at the meeting, technical issues of concern were identified, and a tentative schedule was discussed, calling for issuance of the final paper in June of 1993.

On May 6-7, 1992, a peer review was conducted by the CNWRA of the Thermohydrologics Research project being conducted at the CNWRA. The CNWRA staff presented both results of work to date and details of planned future experiments and analyses to five peers with expertise in thermohydrology and hydrogeology. The objective of the peer review was to assure that the methods and approach of the CNWRA staff were focused on the relevant questions in this area and that the project was proceeding in a direction likely to answer those questions.

The peer reviewers offered several suggestions, and although they raised some critical questions, particularly with regard to the scaling analyses underlying the experiments, they each concluded that the project was sound and anticipated good results.

On May 27-28, 1992, RES and NMSS staff met with CNWRA and the University of Arizona (UAZ) research investigators to discuss research programs, results and future opportunities in hydrology including the INTRAVAL Project activities and Apache Leap Tuff site studies. A major focus of the meeting was the technical coordination of hydrologic studies between the CNWRA and the UAZ. Numerical simulation studies being conducted by the CNWRA and the UAZ investigators on determining effective parameters and models for modeling unsaturated flow and transport through fractured rock were presented and discussed. Arrangements were made to have data sets on the laboratory fracture flow and characterization transferred to the CNWRA modelers from the UAZ projects. This meeting constituted the third formal technical coordination exchange meeting between NRC supported hydrology researchers at the CNWRA and the UAZ.

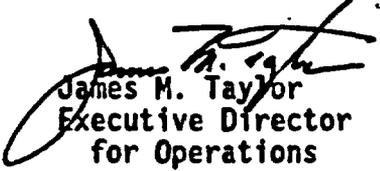
10. Nuclear Waste Negotiator

NRC staff continues to maintain a good working relationship with the Nuclear Waste Negotiator, and his staff. Mr. David Leroy, the Nuclear Waste Negotiator

and Mr. Charles Lempesis, the Chief of Staff for the Office of the Nuclear Waste Negotiator, met with NRC's Office of State Programs staff after their June 3, 1992, meeting with the Chairman. The status of the MRS grant program and NRC support for upcoming meetings were among the points discussed.

Coordination:

The Office of the General Counsel has reviewed this paper and has no legal objection.


James M. Taylor
Executive Director
for Operations

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