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UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

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WM Record File 102 WM Project 11 Docket No. PDR LPDR

Reply to: 1050 East Flamingo Road Las Vegas, Nevada 89119

Distribution: JTG, KEB, JOB, MRK, Linehan, CFR, Justus, Kennedy, Stabkin, NSH, SBilhard, Coplon, sac

MEMORANDUM

DATE: June 17, 1986

FOR: Robert E. Browning, Director Division of Waste Management

FROM: Paul T. Prestholt, Sr. OR - NNWSI PTP

SUBJECT: NNWSI Site Report period May 10, 1986 through June 17, 1986

I. QUALITY ASSURANCE

A. Enclosed is the latest (dated May 13, 1986) NNWSI QA audit schedule. Division QA personnel should consider attending, as observers, the LANL audit (July 14), the SNL audit (September 8), and the SAIC/T&MSS audit (October 6) as a minimum.

The Fennix and Scisson audit being performed this week (June 16) is abbreviated because all exploratory shaft design activities have been transferred to the F&S Tulsa, Oklahoma facility, and work has not started yet. The only work presently

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being accomplished by F&S at this time is in support of the USGS (geologic mapping in the vicinity of Yucca Mountain). I am covering this audit.

B. Since my last report the last stop work order against REECO has been signed and is presently in force. Additionally, stop work orders against the three National Laboratories (SNL, LANL, and LLNL) have been signed by Don Vieth. As I understand it, these stop work orders were issued to allow the affected participants to complete the assignment of QA levels. Only that technical work that would result in serious loss of time and effort if stopped has been allowed to continue. Administrative work and the writing of the SCP continues.

\* C. Dale Hedges and I have scheduled an Appendix 7 trip to LLNL on June 25. Jim Blalock, WMPO QA manager will accompany us.

D. NOTE: Because of the stop work orders there is very little technical work being performed within the project. This will continue for the foreseeable future. The technical staff should maintain contact with their counterparts in the NNWSI project to keep up with on-going work.

## II. GEOLOGY-GEOPHYSICS

There was a review of SCP Chapters 1 and 3 (geology - hydrology) during the week of May 26. There was criticism of Chapter 1 - geology by the reviewers, not so much on what was in the Chapter but on what wasn't included. Excluded were data on the trench 14 studies, faulting studies in Crater and Jackass flats and correlations of data on formation temperatures, as measured in bore holes, hydrologic heads, hydrochemistry, and analysis of seismic compressional wave residuals. The authors are presently addressing the comments by the review team. A total rewrite was not considered necessary.

I had requested an invitation to attend this review but was turned down. The reason given was that DOE Hq. did not want the NRC present during the reviews of SCP Chapters.

### III. OGR-NNWSI FUEL CONSOLIDATION STUDY

The objectives of the fuel consolidation study are:

- Estimate relative costs of spent fuel disposal options with and without consolidation;
- Qualitatively assess "other" operational factors such as off-site health effects and secondary waste generation.

Included in the enclosed handouts is the analysis of the desirability of consolidating fuel assemblies for shipment including the assumptions on which the study was based, cost factors, factors other than cost, a description of consolidation equipment and disposal containers, design criteria, underground and surface facility characteristics and equipment and a cost summary.

The conclusions arrived at by Sandia are:

- Measured in terms of number of disposal containers required, the penalty for not consolidating is only 10%;
- For repositories designed around a 1-stage waste handling building (WHB), spent fuel disposal without consolidation saves \$400 + million;
- Estimates of construction time indicate that the NWA 1998 start-up schedule can be met with a 1-stage WHB designed for disposal without consolidation;
- Other operational factors favor disposal without consolidation.

#### IV. GEOCHEMISTRY

##### A. EQ 3/6 update.

Don Emerson, LLNL, presented an update on EQ 3/6 code development. Included in Dr. Emerson's discussion were the following:

- A history of code development (brief);
- Current funding arrangements for code development and maintenance;
- A statement of capabilities of EQ-3 and EQ-6;
- The NNWSI WBS statement;
- 10 CFR 60 (Post-closure) performance objectives addressed by EQ 3/6
- A statement of issues addressed by EQ 3/6 application;
- QA level assignments for EQ 3/6 subtask;
- EQ 3/6 NNWSI network;
- Individuals working on the EQ 3/6 subtask;
- Technical accomplishments.

The handout is enclosed.

##### B. Natural Isotope Chemistry.

A. E. Norris, LANL, gave a presentation on the Natural Isotope Chemistry subtask, WBS 1.2.3.4.1.2.A. The

objectives of this study are:

- Determine distributions of naturally occurring radionuclides at Yucca Mountain to characterize:
  1. Infiltration of precipitation;
  2. Velocity of water movement in the vadose zone;
  3. Retardation of radionuclides relative to water velocity.

The handouts are enclosed.

V. VISITS and MEETINGS

A. Mr. John Davis, Director, Office of NMSS, was in Las Vegas on May 15, 1986, to address the members of the State Commission on Radioactive Waste. Mr. Davis' remarks were well received and comments by the State and public were positive.

Mr. Davis' remarks have been circulated to the staff so I will not repeat them here.

Mr. Ben Rusche also addressed the Commission. Mr. Rusche left the meeting immediately after finishing his remarks and was strongly criticized for doing so. In not staying for the public comment portion of the meeting it was perceived, by the public, that Mr. Rusche didn't care about the concerns of the people of the State.

The Commission stated to Mr. Davis that they (the Commission) would interact with the NRC to a much greater extent in the future.

- B. On May 28, 1986, Mr. Bill Olmstead, ELD, spoke to the Nevada Legislature's Committee on High-Level Radioactive Waste, chaired by senator Thomas J. Hickey. Mr. Olmstead was scheduled to discuss the role of Quality Assurance in licensing, particularly before the ASLB. However, during his presentation, Mr. Olmstead was asked questions about transportation and cask safety and certification. I was asked to describe the NRC's day to day role in observing DOE's Q.A. activities.

The meeting was more informal than the Commission meeting and the questions to the individuals making presentations by the committee members covered more topics and, in general, were more informed. The committee also indicated that the members would have more interactions with the NRC in the future.

A copy of the agenda is enclosed.

- C. John Linehan, acting chief WMRP and King Stablein, WMRP, were in Las Vegas for a management meeting with Don Vieth, Director, NNWSI. The minutes of this meeting and the attendance list can be obtained from King.

Dr. Vieth stressed that he favors as many interactions and discussions with the NRC staff as the SCP schedule allows. It was stated, however, that all future formal interactions between the NNWSI Project and the NRC will be coordinated with DOE Hq. It was further indicated that there may be future restrictions on Appendix 7 meetings.

- D. Dale Hedges and I are scheduled for an Appendix 7 meeting at LLNL on June 25, 1986. The topic of discussion will naturally be QA.

VI. MISCELLANEOUS

- A. During the May TPO-Project Manager meeting, Mr. Ernest E. Hill, Hill Associates and Administrative Judge, ASLBP, gave a talk on the NRC licensing process. He stressed activities during a hearing before the Atomic Safety Licensing Board. He further stressed that the procedures he presented were valid only for the pre-TMI period.

Mr. Hill's presentation is a part of Dr. Vieth's continuing effort to understand the licensing process he and his staff will participate in if Yucca Mountain is picked as the repository site.

Mr. Hill's presentation was very informative. However, he did warn that the proceedings before the ASLB convened to hear the case of a High-Level repository may well be very different from that of a pre-TMI hearing.

Mr. Hill's handouts are enclosed.

- B. Enclosed is the NNWSI Project Information-Data Catalog dated April 9, 1986. This document was prepared by SNL to comply with the site Specific Agreement between the DOE and the NRC.
- C. Enclosed is a copy of the agenda for the Legislature's Committee Meeting scheduled for June 24. I will be unable to attend. Also enclosed are the minutes of the committee meeting held on March 10 and 11. I was unaware of this meeting but would not have been able to attend in any case.
- D. Enclosed is a letter from Richard Bryan, Governor of Nevada, to Mr. Thomas Clark, Manager, Nevada Operations

Office concerning the shipment of spent nuclear fuel from NTS (E-MAD) to the Idaho National Engineering Laboratory. Governor Bryan sets forth a number of provisions that he asks DOE to comply with.

The shipments are being made, three as of this date. The shipments are being routed north from NTS so that no spent nuclear fuel will travel through the city of Las Vegas.

- E. The NNWSI project monthly report for April 1986, is enclosed.
  
- F. John Linehan obtained copies of the five law suits brought against DOE by the State of Nevada. Copies can be gotten from King Stablein.

PTP:nan

cc: with enclosures  
J. J. Linehan  
K. Stablein  
S. Bilhorn

cc: no enclosures  
D. L. Vieth  
F. R. Cook  
T. Verma  
J. Szymanski  
M. Glora  
D. M. Kunihero  
G. Cook  
J. P. Knight  
N. Still

Enclosures:

NNWSI Project Monthly Report for April 1986  
Meeting Notice and Agenda for NV Legislature's Committee on  
High-Level Radioactive Waste in NV, 5/28/86 & 6/24/86  
Letter dated May 20, 1986 to Thomas Clark from Richard H.  
Bryan, Governor of NV  
Minutes of 3/10 & 11/86 meeting of NV Legislature's Committee  
on High-Level Radioactive Waste in NV  
Agenda: 5/86 PM-TPD Meeting  
Handout: The Nuclear Regulatory Commission Licensing Process  
Info re: The Nuclear Regulatory Commission Licensing Hearing  
Process  
NNWSI Project Information - Data Catalog, 4/9/86  
NNWSI Project FY 1986 Audit Schedule  
Status Report: 4/23/86, NNWSI Fuel Consolidation Study  
Status Report: 4/23/86, OGR Fuel Consolidation Study  
Handout: Geochemical Modeling Code EQ3/6 1.2.3.8.L,  
Presentation to May PM-TPD Meeting of the NNWSI  
Handout: Natural Isotope Chemistry, WBS 1.2.3.4.1.2.A, TPD  
Presentation 5/21/86  
Handout: Isotope Personnel

STATE OF NEVADA  
LEGISLATIVE COUNSEL BUREAU

LEGISLATIVE BUILDING  
CAPITOL COMPLEX  
CARSON CITY, NEVADA 89710



DONALD A. RHODES, *Director*  
(702) 885-5627

*encl. to memo of 6/17/86,  
Rec'd 6/23/86 to Browning-  
Am. President*  
LEGISLATIVE COMMISSION (702) 885-5627  
LOUIS W. BERGEVIN, *Assemblyman, Chairman*  
Donald A. Rhodes, *Director, Secretary*  
INTERIM FINANCE COMMITTEE (702) 885-5640  
JAMES I. GIBSON, *Senator, Chairman*  
Daniel G. Miles, *Fiscal Analyst*  
Mark W. Stevens, *Fiscal Analyst*  
*Packet 10*

LINDA S. JESSEN, *Legislative Counsel* (702) 885-5627  
JOHN R. CROSSLEY, *Legislative Auditor* (702) 885-5622  
ROBERT E. ERICKSON, *Research Director* (702) 885-5637

MEETING NOTICE AND AGENDA

NEVADA LEGISLATURE'S COMMITTEE ON HIGH-LEVEL  
RADIOACTIVE WASTE IN NEVADA (S.B. 55)

Date and Time: Tuesday, June 24, 1986, at 9:00 a.m.

Place: Room 234, Legislative Building  
Carson City, Nevada

Agenda:

- I. Call to Order, Opening Remarks and Introductions  
Senator Thomas J. Hickey, Chairman.
- II. Approval of Minutes (May 28, 1986, meeting).
- III. Presentation on Grants Equal To Taxes as it Pertains to  
the State of Nevada and the Nuclear Waste Policy Act of  
1982 (PL 97-425).  
Joseph Strolin, Chief of Planning,  
Agency for Nuclear Projects.  
Representative, Consulting Firm of Mountain West.
- IV. Public Hearing.
- V. Work Session.
- VI. Adjournment.

**NOTE:** The committee work session is an open meeting, but the purpose is to give direction to staff concerning the final report and any recommendations for possible legislation. No public testimony will be received during this portion of the meeting.



THE STATE OF NEVADA  
EXECUTIVE CHAMBER

Carson City, Nevada 89710

RICHARD H. BRYAN  
Governor

TELEPHONE  
702-625-5670

May 20, 1986

Mr. Thomas Clark, Manager  
Nevada Operations Office  
U.S. Department of Energy  
P.O. Box 14100  
Las Vegas, NV 89114-4100

Dear ~~Mr. Clark~~ <sup>Tuska</sup> Clark:

The State of Nevada was recently notified that the U.S. Department of Energy intends to make six (6) shipments of non-classified spent nuclear fuel from the E-MAD facility at the Nevada Test Site to the Idaho National Engineering Laboratory.

The Courtesy communication provided by Max Tuska of EG&G Idaho, Inc. to John Vaden in the Nevada Division of Health has been useful as a preliminary indication of DOE's intent to conduct these shipments. However, the information contained in Mr. Ruska's notification is insufficient to assure the State that the health and safety of Nevada's citizens will be protected during all phases of the operation.

In order for the State to carry out its responsibilities, I am asking that DOE conduct its shipping in conformance with the following provisions:

- (1) Specific prenotification to the designated State representative at least two weeks in advance of the first shipment. Such prenotification should include:

- Specific dates, times, and routes for each shipment;
- Specific routes for each shipment, including what designations, if any, have been made for authorized stopping points within Nevada and/or any provisions for deviating from established routes.

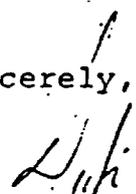
- Documentation that the routes selected conform to the requirements of 49 CFR 177.825 in that they "minimize radiological risk" and that the carrier has considered "available information on accident rates, transit time, population density and activities, time of the day and day of week during which transportation will occur";
  - Documentation that each shipping container to be used has been certified by the Nuclear Regulatory Commission (NRC) and meets all required safety criteria;
  - A statement that DOE will abide by all pertinent State and local transportation laws, regulations and ordinances (we understand that Clark County, the City of Las Vegas and the City of North Las Vegas have specific ordinances pertaining to hazardous materials transportation);
  - A statement clearly describing how and to what extent liability will be assigned in the event of an accident involving the release of radiation;
  - A description of the emergency response planning that has been done to assure adequate response capability in the event of an accident/incident, including a description of how federal, State and local emergency response functions have been integrated;
  - Details of each shipment including truck weights, documentation of vehicle and driver certifications for the conduct of such shipment, and other information necessary for State inspection personnel adequately assess vehicular safety considerations;
- (2) The Nevada Department of Transportation (NDOT) will review the proposed routing of these shipments and reserves the right to make recommendations which would enhance safety considerations.

- (3) That inspection and enforcement personnel will be allowed to inspect each shipment (a) at the point of origin; and (b) prior to the shipment's exiting of State boundaries.
- (4) DOE will obtain from the NDOT permits for the use of overweight trucks if shipments are to be made using vehicles which exceed normal weight specifications.
- (5) Nevada Highway Patrol personnel must escort each shipment from the boundary of the Nevada Test Site to the point where the shipment exits the State.
- (6) Shipments should be scheduled so that transit of heavily populated areas occurs only at times of the day when traffic along identified shipping routes is minimum.
- (7) The Nevada Division of Emergency Management and local emergency response authorities will be notified of each impending shipment no later than 24 hours before such shipment leaves the Nevada Test Site.
- (8) DOE must report any irregularity in the shipping operation to the designated State representative no later than 48 hours after the occurrence of such irregularity, regardless of whether or not the irregularity occurred in Nevada or elsewhere along the shipping route.
- (9) Following completion of the final shipment, DOE will provide the State with a report indicating whether or not each shipment went according to plan, describing any problems or unexpected occurrences, and formally advising the State that the shipping program has been terminated.
- (10) If changes occur in shipping schedules or other information pertinent to this notification, the designated State representative must be notified at least 48 hours in advance of any such changes, or as soon as possible in the event of

Thomas Clark  
Page Four

Thank you for your attention to these matters. I cannot overemphasize the importance the State of Nevada places upon the safe implementation of these spent fuel shipments, a goal we doubtless share with your staff at DOE.

Sincerely,

  
RICHARD H. BRYAN  
Governor

RHB/dkl

cc: Dr. Donald Vieth

STATE OF NEVADA  
LEGISLATIVE COUNSEL BUREAU

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TV BODY MORNING  
- TAFT LEGISLATIVE COMMISSION (702) 885-5627  
- SCHWELER LOUIS W. BERGEVIN, Assemblyman, Chairman  
Donald A. Rhodes, Director, Secretary  
- CLARK INTERIM FINANCE COMMITTEE (702) 885-5640  
- CUMMINGS JAMES I. GIBSON, Senator, Chairman  
- TRANSPARAN DANIEL G. MILES, Fiscal Analyst  
Mark W. Stevens, Fiscal Analyst

DID CLARK, SCHWELER, TAFT  
GET A COPY OF THIS?  
- HOW DID IT COME IN?  
- NO NV MAIL NEVADA LEGISLATURE'S COMMITTEE ON HIGH-LEVEL  
ROOM STAMP. RADIOACTIVE WASTE IN NEVADA (S.B. 55)

MEETING NOTICE AND AGENDA

Date and Time: Wednesday, May 28, 1986, at 9:30 a.m.

Place: Meeting Room A, Thomas & Mack Center  
University of Nevada, Las Vegas  
Las Vegas, Nevada

Agenda:

9:30 a.m. I. Call to Order and Opening Remarks  
Senator Thomas J. Hickey, Chairman.

II. Approval of Minutes  
(March 10 and 11, 1986 meeting).

III. Review of the High-Level Radioactive Waste  
Repository Licensing Requirements with Particular  
Emphasis on Quality Assurance.

William J. Olmstead, Director and Chief Counsel,  
Regulations Division,  
United States Nuclear Regulatory Commission

IV. Environmental Protection Agency's Revised  
Emission Standards: What They Mean and How  
They will be Implemented if Yucca Mountain is  
Selected as the Site for a High-Level  
Radioactive Waste Repository.

Sheldon Meyers, Director (Invited) CALL SBEELY  
Office of Radiation Programs  
United States Environmental Protection Agency

V. The United States Department of Energy's  
Repository Siting Program: An Industry  
Perspective.

Robert W. Bishop,  
Secretary and Counsel  
Northeast Utilities

(Invited)

CHECK WITH M.O.

CHECK WITH PAUL  
PRESIDENT

NEED PACKAGE FOR STAFF  
- NEWS ARTICLES  
- COPY OF MEMO TO  
DIRECTOR RE ADDITIONAL  
CUMMINGS  
- COPY OF RECENT LETTER

ACTION

CC: WELLS  
CC: DIXON  
CC: BARNER  
CC: ST FILE  
CC: SMITH/BENSON  
CC: VOLK/SAR  
WELLS/OPA

REC'D IN WMPO

5/16/86

REVISION BY DLW ON 5/25

Meeting Notice and Agenda  
Page 2

12:30 p.m.

L U N C H

2:00 p.m.

- VI. Presentation of a Report on the United States Department of Energy's Implementation of the Consultation Provisions of the Nuclear Waste Policy Act.

James L. Creighton, President  
Creighton & Creighton, Inc.

- VII. Transportation Planning Briefing for the Subcommittee on Transportation, chaired by Assemblyman James W. Schofield.

Joseph Strolin, Chief of Planning  
Russell di Bartolo, Planner/Research Analyst  
Nevada's Agency for Nuclear Projects

- VIII. Committee Discussion.

- IX. Adjournment.



**Department of Energy**

Nevada Operations Office

P. O. Box 14100

Las Vegas, NV 89114-4100

JUN 04 1986

William J. Purcell, Director, Office of Geologic Repositories, DOE/HQ (RW-20),  
FORS

NEVADA NUCLEAR WASTE STORAGE INVESTIGATIONS (NNWSI) PROJECT MONTHLY REPORT FOR  
APRIL 1986

Enclosed is the NNWSI Project Monthly Report for April 1986 covering the  
technical activities and status of the NNWSI Project.

WMPO:WRD-1359

Enclosure:  
NNWSI Project Monthly Report

  
Donald L. Vieth, Director  
Waste Management Project Office