

MEMO BUCKLEY

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MEMORANDUM FOR: Eleni N. Davis  
Program Management, Policy Development  
and Analysis, NMSS

FROM: John T. Buckley  
Technical Review Branch  
Division of High-level Waste Management, NMSS

SUBJECT: RFPA TO CLOSE TASK ORDER 007 OF CONTRACT NRC-02-84-002  
(FIN D1004) AND DE-OBLIGATE EXCESS FUNDS FROM TASK  
ORDERS 001-008 AND OBLIGATE FUNDS TO TASK ORDER 009.

We request that Task Order 007 of Contract NRC-02-84-002 be closed and that excess funds from Task Orders 001-008 of same contract be de-obligated and directed to Task Order 009 (attached).

If you have any question about the contents of this memo, please contact me at X20513.

*151*  
John T. Buckley  
Technical Review Branch  
Division of High-Level Waste Management, NMSS

Attachment:  
As stated

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PDR WMRES EECENGI  
D-1004 DCD

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except PDR, LPDR, CWRA,  
& TLSS*

*D1004  
wm-11  
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APR 13 1988

MEMO BUCKLEY

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OFFICIAL CONCURRENCE AND DISTRIBUTION RECORD

MEMORANDUM FOR: Eleni N. Davis  
Program Management, Policy Development  
and Analysis, NMSS

FROM: John T. Buckley  
Technical review Branch  
Division of High-level Waste Management, NMSS

SUBJECT: RFPA TO CLOSE TASK ORDER 001-008 OF CONTRACT NRC-02-84-002  
(FIN D1004) AND DE-OBLIGATE EXCESS FUNDS FROM SAME TASK  
ORDERS AND OBLIGATE FUNDS TO TASK ORDER 009.

DATE:

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CONCURRENCES

ORGANIZATION/CONCUREE

INITIALS

DATE CONCURRED

HLTR/JBuckley  
HLTR/MNataraja

*JTB*  
~~*MN*~~  
~~*JB*~~

88/04/13  
88/04/13

Task Order No. 009

Under Contract No. NRC-02-84-002

A. BACKGROUND/OBJECTIVES

The DOE has responsibility for the siting, design, construction, operation and integration of a geologic repository for the disposal of high-level radioactive waste (HLW). The EPA is responsible for setting a standard for release of radionuclides to the accessible environment from a geologic repository. The NRC is responsible for ensuring that facilities for disposal of HLW are properly sited, designed, constructed, operated, and decommissioned such that the EPA limits will not be exceeded. This goal will be accomplished through preparation of regulations, regulatory guides and through licensing reviews at various steps in the geologic repository development.

The DOE submitted the Site Characterization Plan (SCP) for the Yucca Mountain Site in January 1988. After the Site Characterization Plan has been reviewed, the NRC will prepare a Site Characterization Analysis (SCA) along with additional reports on specific aspects of design and rock mechanics.

Specifically, this Task Order will request the Contractor to develop draft position papers in preparation for the review of the SCP.

B. WORK REQUIRED

In accordance with Section C of Article I of the contract, the Contractor shall review documents for underground testing and rock mechanics issues related to containment and isolation of radionuclides. The Contractor shall also assess the capabilities, limitations, and uncertainties of various tests and test methods proposed by the DOE during testing in underground facilities. General topics shall include but not be limited to principles of mining engineering, hydrogeology and rock mechanics.

The Contractor shall review and evaluate in situ testing plans, data, and the testing of coupled thermomechanical and hydrologic characteristics. The Contractor shall be required to review major areas of in situ testing, design, geotechnical engineering, and hydrogeologic aspects of Site Characterization Plan documents. The contractor shall then prepare position papers which will serve as a basis for the development of NRC technical positions.

**TASK 1: Preparation of Position Papers**

**SUBTASK 1**

Specifically, under this subtask the Contractor shall prepare a point paper for the NRC entitled "Level of Retrieval Demonstration Needed During Site Characterization." This paper should describe the level of

demonstration needed during site characterization to show that the design does not preclude retrieval. Criteria should be developed which describe the computer simulations, physical demonstrations, etc that will be acceptable levels of demonstration.

SUBTASK 2

Specifically, under this subtask the Contractor shall prepare a position paper entitled, "Appropriate Models/Tests/Assumptions for Predicting Ventilation Requirements During Retrieval."

The ventilation system for the proposed repository at NNWSI must be designed by the DOE to meet the requirements of 10 CFR Part 60.133(2)(g). These requirements are (1) The ventilation system shall be designed to control the transport of radioactive particulates and gases within and releases from the underground facility in accordance with the performance objectives of 10 CFR Part 60.111(a); (2) The ventilation system shall be designed to assure continued function during normal operations and under accident conditions; and (3) The ventilation system shall be designed to separate the ventilation of excavation and waste emplacement areas.

The most recent conceptual design information on the underground ventilation system for the proposed repository at NNWSI can be found in

the Conceptual Design Report submitted with the CD-SCP. EI has already reviewed a document entitled "Subsurface Design Concepts for the NNWSI." This information as presented by Parsons Brinkerhoff contains conceptual design information for both the horizontal and vertical waste emplacement alternatives. In addition, this document contains a description of the ventilation system requirements and airflow directions for the repository.

This paper should focus on identifying the acceptable models and codes for analyses of the ventilation requirements during retrieval. Furthermore, this paper should develop the criteria necessary to review DOE's ventilation system design. The Contractor is required to prepare a detailed outline, to be discussed with the NRC prior to preparation of the paper.

### SUBTASK 3

Specifically, under this subtask the contractor shall produce a position paper titled, "The role of Geostatistics During Site Characterization." Background preparation for the development of this paper should include the review chapter 8 of the Yucca Mountain SCP. At a minimum the following topics should be addressed:

1. What role should geostatistics have in the development of the site characterization test plan for NNWSI?

- When should geostatistics be applied?
- How much data is required before geostatistics can be applied?
- What criteria should be used to determine which variables should be analyzed using geostatistics?
- How should the confidence intervals be determined for each variable?
- What should be the role of "professional judgement" or soft data in geostatistics analyses?

2. How should differing assumptions be handled by geostatistics experts?

- What should be the criteria for using linear geostatistics techniques and non-linear techniques?
- How can/should QA be applied to geostatistical analyses and results?

It is understood that additional topics may be added to this list as work proceeds.

SUBTASK 4

The Contractor shall review the Conceptual Design Report (CDR) which was released with DOE's Consultation Draft-Site Characterization Plan. The Contractor should analyze the ventilation system design presented in the CDR and report on the findings of the analysis.

SUBTASK 5

The Contractor shall produce a position paper which addresses the construction specifications of the ESF. This paper should develop the review criteria necessary to review DOE's ESF design and construction plans for the Yucca Mountain site. Acceptable construction techniques and design specifications should be described and defended.

SUBTASK 6

The Contractor shall review the Conceptual Design Report submitted as reference to the Consultation Draft of the Site Characterization Plan. This document has been submitted to the Contractor under separate cover. The Contractor should prepare a report containing comments on the CDR as well as requirements for resolving any issues raised in the review. This subtask has been ongoing since January 1988, under Task Order 007 of this contract. Task Order 007 is now being terminated and funds will be de-obligated and redirected into Task Order 009.

C. REPORTING REQUIREMENTS

Monthly Progress Reports

The Contractor shall prepare document reviews to be submitted to the NRC on or before the due dates stated in Section F of this Task Order.

These reviews shall include the deliverables for each particular document assigned under Task Order No. 009. In addition to the document reviews, letter progress reports shall be due on the 20th day of each month. These reports shall outline the status of each unfinished subtask for which time was spent the preceding month. If there are several projects assigned to a task order, the progress report shall be detailed enough to reflect the status of each project. Monthly reports shall also contain a final copy of each draft letter report submitted during the reporting period. Each monthly report shall also include a breakdown of individual employee time and a cumulative cost summary for each subtask. The monthly report shall summarize the technical work performed during the previous month with results, conclusions, and recommendations, as well as the technical work planned for the next month.

The Contractor shall provide a written trip report for all meetings and workshops as required by Article I, Section F.3, of the basic contract.

D. MEETINGS

SUBTASKS 1-5

1. One position paper outline meeting will be held in Rockville, MD to discuss each of the proposed outlines. The meetings will be scheduled for one day each, at a time convenient to the Contractor and the NRC.

SUBTASK 2

- |                          |                |
|--------------------------|----------------|
| 1. Draft Report Outline  | June 1988      |
| 2. Draft Report Meetings | August 1988    |
| 3. Final Draft Report    | September 1988 |

SUBTASK 3

- |                         |                |
|-------------------------|----------------|
| 1. Draft Report Outline | June 1988      |
| 2. Draft Report         | August 1988    |
| 3. Final Draft Report   | September 1988 |

SUBTASK 4

- |                         |                |
|-------------------------|----------------|
| 1. Draft Report Outline | July 1988      |
| 2. Draft Report         | September 1988 |
| 3. Final Draft Report   | October 1988   |

SUBTASK 5

- |                         |                |
|-------------------------|----------------|
| 1. Draft Report Outline | July 1988      |
| 2. Draft Report         | September 1988 |
| 3. Final Draft Report   | October 1988   |

SUBTASK 6

- |                           |           |
|---------------------------|-----------|
| 1. Review CDR             | May 1988  |
| 2. Prepare Draft comments | June 1988 |
| 3. Final Comments Report  | July 1988 |

2. A one-day draft report meeting will be held in Rockville, MD to discuss each draft report. These meetings will take place when the Contractor has expended approximately 50% of the allotted time for each subtask. The meeting dates will be set at a time mutually agreeable to the Contractor and the NRC.

SUBTASK 6

A one-day meeting will be scheduled at NRC Headquarters in Rockville, MD to discuss comments generated during the review of CDR. The meeting will be scheduled a time mutually convenient to the NRC and Contractor.

E. NRC FURNISHED MATERIALS

The NRC shall furnish the documents to be reviewed under each subtask of this Statement of Work. The Contractor should identify those documents which require NRC procurement.

F. SCHEDULE

MILESTONE

SUBTASK 1

DUE DATES

1. Draft Report Outline	June 1988
2. Draft Report Meeting	August 1988
3. Final Draft Report	September 1988

6. ESTIMATED LEVEL OF EFFORT

<u>Task</u>	<u>Subtask</u>	<u>Estimated Staff Days</u>
1	1	40
1	2	40
1	3	60
1	4	40
1	5	30
1	6	40
Secretarial		20
Administrative		10

Total estimated staff days for Task Order 009 is 280 SD.

**COST ESTIMATE**  
**TENTATIVE WORK ASSIGNMENT NO. 009**  
**CONTRACT NO. NRC-02-84-002**

**TASK 1**

<u>1. DIRECT LABOR COST</u>	<u>ESTIMATED HOURS</u>	<u>RATE</u>	<u>ESTIMATED COST</u>
1. Principal in Charge	80	\$40/hr	\$3200
2. Quality Assurance	—	\$25/hr	—
3. Project Manager	880	\$30/hr	\$26,400
4. Project Engineer	640	\$22/hr	\$14,080
5. Mining Engineer	—	\$19/hr	—
6. Geologist	—	\$10.25/hr	—
7. Technical Editor	40	\$8/hr	\$320
8. Technical Typist	120	\$8/hr	<u>\$960</u>
	<b>TOTAL ESTIMATED COST</b>		<b>\$44,960</b>
<b>2. Salary Related Costs:</b>	<b>\$44,960 X .39 =</b>		<b>\$17,530</b>
	<b>TOTAL ESTIMATE COST</b>		<b>\$62,490</b>
<b>3. Overhead 90.5%</b>	<b>\$62,490 x 1.905=</b>		<b>\$119,100</b>
<b>4. Consultant:</b>	<b>\$65 X 480 hrs.= \$31,200</b>		

5. Transportation:

Airfare R/T Chicago/Washington

Airfare R/T Tucson/Washington

\$400 x 2 men x 4 TRIPS(s) = \$3,200

\$600 x 1 men x 3 TRIPS(s) = \$1,800

Taxi: \$15 x 8 TRIP(s) = \$120

Taxi: \$15 x 3 TRIP(s) = \$45.00

6. Per Diem:

\$125 x 33 man days = \$4,125

7. Local Car Rental

\$40 x 22 days = \$880

8. Long Distance Communication: \$50/month x 5 months = \$250

9. Reproduction \$800

SUB TOTAL

\$42,420

TOTAL DIRECT COSTS

\$161,500

10. FEE at 8%: \$161,500 x 0.8 =

\$12,920

TOTAL COST AND FEE

\$174,400

SAY

\$175,000