96

DISTRIBUTION See Pocket for encl.
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Note for distibution list
See JWBradbury for enclosures

~~3000~~/JWB/84/10/04

- 1 -

OCT 10 1984

Maxwell B. Blanchard
Waste Management Project Office
U. S. Department of Energy
Nevada Operations Office
P.O. Box 14100
Las Vegas, NV 89114-4100

Dear Mr. Blanchard:

Consistent with the recently signed NRC-DOE Project-Specific Procedural Agreement, this is to request site-specific samples for one of our contractors (Oak Ridge National Laboratory) to be used in experiments studying radionuclide solubilities and selected retardation parameters. The samples requested are: 1) Topopah Spring tuff-5kg, 2) Calico Hills tuff-3kg, and 3) J-13 well water-10L.

The rock samples can be either from outcrops or drill core depending on availability. The size of these samples should be at least one centimeter in the smallest dimension. This material should be representative of the rock in the proposed repository and/or similar to the material that LANL has used in its sorption experiments. The J-13 water should be collected in a plastic bottle with a tight-fitting lid. By filling this bottle to the top, volatile loss from the groundwater sample can be minimized.

This request was originally made through our on-site representative, Paul Prestholt, in June and was accompanied by the documentation required by the then current draft of the Procedural Agreement. However, as was requested by Donald L. Vieth in his letter of August 23, 1984 to Paul Prestholt, the documentation requested by the final Procedural Agreement is enclosed. Specifically, I have enclosed 1) the completed sample request form, 2) the Letter Report from our contractor requesting the site-specific samples, 3) the Statement of Work and Work Plan for the contract and, 4) ORNL Quality Assurance documents applicable to the project.

Your expeditious handling of this request would be appreciated because there has already been considerable delay since our original request and experimental work cannot begin until our contractors have received the samples. If you need

WM Record File 102.2
WM Project 11
Docket No.
PDR ✓
LPDR ✓

Distribution:
ORNL/wlo encl

(Return to WM, 623-SS)

8501070194 841010
PDR WASTE
WM-11 PDR

OFC	:WMGT	:WMGT	:WMRP	:	:	:	:
NAME	:JWBradbury;mt	:RJStarmer	:SCoplan	:	:		
DATE	:84/10/	:84/10/	:84/10/	:	:	10/24/84	

H

4/51

more information please feel free to contact me (FTS-427-4728) or John W. Bradbury (FTS-427-4055) who is the NRC Project Manager for this contract.

Sincerely,

Seth Coplan
NTS Project Section Leader
Repository Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosures:
1. Sample request form
2. Letter Report L-290-3
3. Statement of Work
4. Work plan
5. ORNL Quarterly Assurance Program

cc: D. L. Vieth
P. T. Prestholt

OFC	:WMGT JWB	:WMGT RJS	:WMRP	:	:	:
NAME	:JWBradbury;mt	RJStarmer	:SCoplan	:	:	:
DATE	:84/10/10	:84/10/16	:84/10/10	:	:	:

Attachment 1

Encl. to ltr. to Blanchard from Coplan - 10/10/84

Date of Request: September 21 1984

Requester:
- Name: Seth M. Coplan
- Organization: U.S. Nuclear Regulatory Commission
- Address: Washington, D.C. 20555
- Telephone: FTS 427-4628

For:
- Contactor: Oak Ridge National Laboratory
- Contract Number: B0290
- Funding Source: U.S. Nuclear Regulatory Commission
- Expiration Date: N/A

Samples Requested

Rock Sample(s)

1) Type: Topopah Spring tuff*
   Form: Chunks, 1 cm in smallest dimension
   From: Outcrops or drill core
   Quantity: 5 kg

2) Type: Calico Hills tuff*
   Form: Chunks, 1cm in smallest dimension
   From: Outcrops or drill core
   Quantity: 3 kg

Water Sample

Well ID: J-13*
Quantity: 10L
Depth Interval Requested: N/A sample taken at well head

Time Frame

Dates samples needed:	As soon as possible
Time required to complete testing/analysis:	Ongoing
Time required to publish results:	Quarterly and Annual Reports
Format:	NUREG/CR documents, open referred literature
Objectives of tests to be performed:	See Work Plan (attached)
Test Method:	See Work Plan (attached)
Use/Need for Test Data/Information in Geologic Repository Program:	See Work Plan (attached)

*See Letter Report L-290-6

102.2

Preparation, Packaging, Transportation Requested

Preparation procedure: Chunks (fresh) broken from outcrop or drill core representative of rock in repository and/or sample used by LANL in sorption experiments. Documentation characterizing the samples is desirable.

Packaging procedure: Rocks in cardboard box; J-13 well water sample in plastic bottle filled to the cap to minimize volatile loss.

Transportation procedure: Through the mail.

Sample to be shipped to:

Name: Dr. A.D. Kelmers
Organization: Oak Ridge National Laboratory
Address: Chemical Technology Division
Oak Ridge National Laboratory
P.O. Box X
Oak Ridge, TN 37380
Telephone: FTS 624-6870

Attachment 2

L-290-6
05/22/84

LETTER REPORT

TITLE: Request for Tuff and Groundwater Materials from Yucca Mountain

AUTHOR: A. D. Kelmers

PROJECT TITLE: Laboratory Evaluation of DOE Radionuclide Solubility Data and Selected Retardation Parameters, Experimental Strategies, Laboratory Techniques, and Procedures

PROJECT MANAGER: S. K. Whatley

ACTIVITY NUMBERS: ORNL #41 37 54 92 6 (FIN No. B0290)
NRC #50 19 03 1

In order to expand the work on this project to include evaluation of the radionuclide sorption and solubility information being developed by LANL for the NNWSI candidate site in tuff at Yucca Mountain, we will need representative samples of both tuff and groundwater materials. Experiments to evaluate radionuclide sorption or apparent concentration limit values must be conducted in the presence of representative rock material and groundwater. Because the mineralogy of the tuff beds at Yucca Mountain is so complex, it seems unlikely that site-relevant data could be obtained by utilizing generic samples of minerals similar to those reported to be present at Yucca Mountain, or by using poorly characterized tuff from the general Nye County area of Nevada. Therefore, we feel it is essential to obtain characterized tuff samples from the Yucca Mountain site. All the sorption experiments reported by LANL have employed well water from well J-13. It is always better to run experiments in actual groundwater rather than to prepare synthetic solutions; therefore, we also will need a sample of this water.

We plan to conduct sorption isotherm/apparent concentration limit experiments which may be relevant to both the engineered barrier facility and the site host rocks. It is our understanding that the Topopah Spring member (in the unsaturated zone) is now the leading candidate repository horizon. We would need an appreciable quantity of Topopah Spring tuff for the engineered barrier facility tests, since we plan to generate groundwater which may be representative of the intruding water in the unsaturated zone by refluxing distilled water with Topopah Spring tuff as well as run sorption isotherms with Topopah Spring tuff. Tests representative of radionuclide behavior in the far field (presumably the saturated zone) would require use of a representative altered tuff and well water J-13. LANL has done considerable work with Calico Hills tuff, so that might be a good tuff flow for us to use. For this far-field work, then, we would need Calico Hills tuff and J-13 well water.

We would like to request the following quantities of materials from Yucca Mountain:

Topopah Spring tuff - 5 kg
Calico Hills tuff - 3 kg
J-13 well water - 10 L.

It would be highly desirable to have as much documentation as possible transmitted with the materials. Mineralogic characterization of the tuff samples seems essential; if this is not transmitted with the samples, we will have to develop it ourselves. Values for physical properties such as surface area, porosity, etc., also would be desirable. Chemical analysis of the J-13 well water is essential; possibly this well water is consistent enough in composition that previous analytical data would be adequate.

We would like to urge that acquisition of these materials be expedited, since experimental work on our project relative to the Yucca Mountain site cannot begin until the samples are in hand. If it seems appropriate, we would like to be present when the samples are obtained, either by field work or from existing stored material, since exact selection of geologic materials frequently involves an element of professional judgment. Interaction with NNWSI/LANL staff in selection of the most representative samples for our needs could be beneficial.

STATEMENT OF WORK

LABORATORY EVALUATION OF DOE RADIONUCLIDE SOLUBILITY DATA AND SELECTED RETARDATION PARAMETERS, EXPERIMENTAL STRATEGIES, LABORATORY TECHNIQUES AND PROCEDURES

FIN: B0290 B&R No.: 50-19-03-01

1.0 BACKGROUND

Radionuclide transport rates and cumulative releases to the accessible environment will be determined by (1) the rate of radionuclide release from waste packages, (2) the solubility of the released nuclides (i.e., their concentrations in groundwater), (3) the reactions of nuclides with groundwater/backfill/host rock, and (4) the rate and path of groundwater flow to the accessible environment. The performing organization shall assist the Nuclear Regulatory Commission (NRC) in examining the geochemical information (items 1, 2, and 3 above) being collected at candidate sites.*

Under this agreement the performing organization shall establish the reproducibility of the geochemical data being generated within the DOE program for site screening and site characterization by conducting selected routine laboratory and/or field measurements and tests. The performing organization shall determine the precision and accuracy of the specific techniques which are used by DOE so that the NRC can estimate the uncertainties in the data. This work will be used by NRC to determine the adequacy of the DOE laboratory strategies, procedures, and data so that NRC can make credible, quantitative estimates that can be used to provide reasonable assurance that the geochemical environment of a site will function as characterized.

2.0 WORK REQUIRED

The performing organization shall confirm and evaluate selected radionuclide solubilities and radionuclide migration/retardation data developed by DOE by testing duplicate samples (obtaining through agreement between NMSS management and DOE) analyzed by DOE at BWIP (Basalt), NTS (Tuff), Salt and crystalline rock sites. This work shall involve conducting selected routine laboratory analyses using:

1. DOE procedures and samples,

*"Site" is the equivalent to 10 CFR 60, "area." At present DOE is considering sites in basalt, tuff, salt, and "crystalline" rocks.

2. Conventional analytical methods and procedures and site-specific samples**, and/or
3. Alternative procedures identified by NRC research.

This work shall not involve the development of new analytical procedures.

In doing this work, the performing organization must document in reports to NRC the validity and reliability of selected DOE geochemical data, tests and methods of analysis and make recommendations with justification that can be used by the NRC as an aid in the identification of uncertainties inherent in specific analytical techniques and geochemical data.

The purpose of this work is to provide the NRC with a selected independent laboratory-oriented evaluation of DOE's past, present and proposed future geochemical research, data and analyses to assure that there is adequate information available for NRC to assess performance for licensing, and identify areas requiring additional attention in the DOE program and areas needing additional research by NRC.

In submitting a Form 189 for this project, the performing organization should review the SOW for "Technical Assistance In Geochemistry" because close coordination between these two projects must by maintained. Also, the performing organization should review Regulatory Guide 4.17, "Standard Format and Content of Site Characterization Reports for High-Level-Waste Geological Repositories.

2.1 Task 1 - Confirmation of Solubilities of Selected Solution Species in Basalt (BWIP), Tuff (NTS), Salt, and "Crystalline" Rocks

The NMSS Project Manager (PM) will provide the performing organization with available DOE solubility and supporting thermodynamic data, and an evaluation of this material based on information produced under FIN B0287, "Technical Assistance in Geochemistry."

Subtask 1.1 - Review Background Material and Develop Work Plans

The performing organization shall review material provided by the NMSS PM and obtained through efforts under FIN B0287 on the DOE waste package and geochemical investigations at each site and propose a work plan in the form of a technical letter report prepared in accordance with Section 3.4 of this SOW (including

**Site-specific samples can be laboratory prepared chemical equivalents of samples collected in place at each site. The use of laboratory prepared chemical equivalents will be determined on a case by case basis by the NMSS PM.

rationale) for conducting selected analyses. In developing this work plan the performing organization shall define the most likely composition of the waste package, likely waste elements for each site environment, ambient groundwater composition for each site, and the new groundwater composition introduced by the engineered system. The work plan will include a definition of the measurement methodology to be used and a quality assurance program for all work performed under this task. This plan will be updated as needed based on the results of work performed under Subtasks 1.2, 1.3, and FIN B0287. Updates are to be submitted on a yearly basis or as agreed to by the performing organization and the NMSS PM and shall be approved by the PM prior to implementing work plan changes.

Subtask 1.2 - Conduct Routine Laboratory Solubility Experiments

Under Subtask 1.2 the performing organization shall, at the direction of the NMSS PM, conduct routine laboratory experiments defined and agreed to under Subtask 1.1.

Subtask 1.3 - Evaluation of Laboratory Solubility Experiments

Subtask 1.3 will coincide with Subtask 1.2. In Subtask 1.3, the performing organization shall provide tabulations of results obtained from Subtask 1.2 and an evaluation of the data and the experimental procedures used. The evaluation shall include a discussion of experimental design, the uncertainty in the data associated with both the limitations in precision and accuracy of the the experimental procedures used and a comparison of these data with those of DOE. Also, the performing organization shall identify significant differences in the results and identify areas requiring additional attention in the DOE program and areas needed additional research by the NRC to resolve or explain the differences. The data and evaluations as well as any recommendations should be made in the Quarterly Progress Reports and summarized in the Annual Report (see 3.0, Reporting Requirements).

2.2 Task 2 - Examination of Other Selected Retardation Parameters and Test Methods Being Used in the Characterization of Site Geochemistry

The NMSS PM will provide the performing organization with available DOE data being collected to characterize retardation processes other than precipitation (solubility) being generated and reviewed for each site under FIN B0287, "Technical Assistance In Geochemistry."

Subtask 2.1 - Review Background Material and Develop Work Plans

The performing organization shall review material provided by the NMSS PM or obtained through efforts under FIN B0287 on DOE

geochemical retardation investigations at each site. Based on this information, the performing organization shall develop a work plan to prioritize NRC data needs, to develop a laboratory review procedure, (including a rationale), and to implement a quality assurance program for all work performed under this Task. The work plan shall be prepared in the form of a technical letter report in accordance with NRC Manual Chapter 1102 (see Section 3.4 of this SOW). The work plan shall be submitted to and approved by the NMSS PM prior to proceeding with Subtask 2.2. This plan will be updated as needed based on the results of work performed under Tasks 2.2, 2.3, and FIN B0287. Updates are to be on a yearly basis or as agreed to be the performing organization and the NMSS PM and shall be approved by the NMSS PM prior to implementing work plan changes.

Subtask 2.2 -
Conduct Laboratory Experiments of Selected Retardation Mechanisms

The performing organization shall, at the direction of the NMSS PM, perform laboratory tests to evaluate, by comparison, the data and procedures being used by DOE to characterize site retardation geochemistry. The experiments and the range of conditions under which the experiments will be conducted shall be coordinated with the NMSS PM by obtaining his approval. In doing this work, the performing organization shall make selected measurements using site specific materials to attempt to reproduce results on documented runs carried out by DOE on similar materials.

Subtask 2.3 - Evaluation of Experimental Procedures and Data

Subtask 2.3 will coincide with Subtask 2.2. In Subtask 2.3 the performing organization shall provide evaluations of the experimental procedures used and the data generated. The evaluations shall include a discussion of experiment design, adequacy and sufficiency of the data being generated by these experiments in comparison with those generated by DOE. These are to be included in the Monthly Letter Status Reports (see 3.0, Reporting Requirements). Also, the performing organization shall identify significant differences in the results and identify areas requiring attention in the DOE program and areas needing additional research by the NRC to resolve or explain the differences. The data and evaluations as well as any recommendations should be made in the Quarterly Progress Reports and summarized in the Annual Report (see 3.0 Reporting Requirements).

3.0 REPORTING-REQUIREMENTS

3.1 Monthly Letter Reports

Each month, the performing organization shall submit copies of a brief letter report which summarizes significant findings and results and (1)

the work performed; (2) personnel time expenditures; (3) travel costs for each individual by trip and (4) costs and uncosted obligations including subcontracts, listed separately: (a) during the previous month; (b) cumulative to date (fiscal year and total); and (c) projection by month to completion of the work effort for the current fiscal year. The first monthly report shall provide the initial projections, and subsequent reports shall either indicate revised projections or indicate "no change in the cost and uncosted obligation projection." The report shall be due by the 15th of each month.

3.2 Quarterly Reports

The performing organization shall submit Quarterly Progress Reports within 30 days of the close of FY Quarters (1/31, 4/30, and 7/31). The fourth Quarterly Report is included in the Annual Report. The Quarterly Progress Reports shall summarize all technical tasks conducted during the corresponding quarters. Significant findings and conclusions pertinent to the objective of the project should be highlighted in the context of their impacts on licensing and should contain recommendations for NRC research needs.

Quarterly Progress Reports shall be self-contained and suitable for publication as a NUREG/CR report. Reports should include an Executive Summary that summarizes the results in the context of their impact on licensing and licensing needs and recommendations with regard to the project objectives as defined in this SOW. Draft and final reports shall be prepared in accordance with NRC Manual Chapter 1102, "Procedures for Placement of Work with the Department of Energy," Part IV, Paragraph 18 and should follow NUREG-0650, "NRC Technical Writing Style Guide". The report shall meet the format requirements of the Formal Technical Report, shall have been edited and checked in accordance with the quality assurance requirements addressed in Section 5.0 of this SOW. All final reports shall include a camera-ready copy and a microfiche copy. Reports shall also be submitted to the NRC Division of Technical Information and Document Control.

3.3 Annual Reports

The performing organization shall submit an Annual Report within 30 days of the close of the fiscal year. The Annual Report shall summarize all technical work conducted during the previous year and shall include the work conducted during the previous quarter. Significant findings and conclusions pertinent to the objective of the project should be highlighted in the context of their impact on licensing and the reports should contain recommendations for NRC research needs. Annual reports will be published as NUREG/CR reports.

The final report shall be prepared in accordance with NRC Manual Chapter 1102, "Placement of Work with the Department of Energy," Part IV, Paragraph 18 and should follow NUREG-0650, "NRC Technical Writing Sytle Guide". The report shall have been edited and checked with the Quality Assurance Procedures addressed in Section 5.0 of this SOW. Final reports shall be submitted to the NRC Division of Technical Information and Document Control.

3.4 Technical Letter Reports

The performing organization shall submit timely technical letter reports as called for in this SOW for Task 1 and 2, or as requested by the NMSS PM. The technical letter reports shall discuss work plans and significant findings and conclusion pertinent to the objective of the report in the context of their impact on licensing. Also, the technical letter reports should include a summary that discusses the results and conclusion in the context of their impact on licensing needs and recommendations with regard to the project objectives as defined in the Statement of Work (SOW).

This is designed to enhance the useability of reports to the licensing staff and the agency as a whole. Within 10 working days after receipt of these reports, the NMSS PM will indicate to the performing organization whether the product is complete. If the NMSS PM has questions or comments, they they shall be mutually resolved by the NMSS PM and the performing organization. A final report will be submitted within 20 working days after receipt of the NMSS comments and shall address a resolution for all NRC comments.

3.5 Final Reports

The performing organization shall prepare a final report at the conclusion of the work described in this SOW. The report shall consist of a summary of the products delivered in accordance with the tasks and subtasks requested. The final report shall be presented in draft form to the NMSS PM for review within 30 days after completion of the work. Within 15 working days following submission of the draft report, the NMSS PM will comment in writing on the report. The performing organization shall respond to these comments within 15 working days following receipt of the NMSS PM's comments. Comments shall be mutually resolved by the NMSS PM and the performing organization. If agreement or changes to the final report are not reached, the NMSS PM may request that the camera-ready copy be prepared with a caveat which says, "The views expressed in this report are not necessarily those of the U.S. Nuclear Regulatory Commission." The final report shall be prepared in accordance with NRC Manual Chapter 1102, "Procedures for Placement of Work with the Department of Energy," Part IV, Paragraph 18 and checked with the quality assurance specifications outlined in Section 6.0 of this SOW. The final report shall be submitted

in camera-ready form to the Director, Division of Technical Information and Document Control for printing and distribution.

3.6 Report Distribution

The following summarizes the required report distribution under this agreement. The NMSS Project Manager shall provide the performing organization with current mailing addresses for this distribution.

Distribution	Monthly Ltr Status Rpts	Meeting, Workshop, Trip Rpts	Annual & Quarterly Rpts	Tech. Letter Rpts	Draft/ Final Rpts	Interim Final Rpt Fiche*
NMSS Project Manager	1	1	1	1	1	0
Office of the Dir., NMSS (Attn: PSB)	1	1	1	1	1	0
WM Div. Dir.	1	1	1	1	1	0
WMGT Branch Chief	1	1	1	1	1	0
WM Docket Control Ctr.	5	5	5	5	5	1**
Document Mgnt Branch, TIDC	0	0	1***	0	0	1***
Office of Research	1	1	1	1	1	0

*Refer to Enclosure 1, Microfiche Specifications
**Duplicate fiche
***Master Fiche

Submission of Document to NRC Public Document Room

All NMSS technical high-level waste project documents will be transmitted to the NRC Public Document Room (PDR) and appropriate Local Public Document Rooms (LPDR's) by the Division of Waste Management. All administrative documents, e.g., financial reports, should be submitted separately from technical reports. Proprietary documents must be properly identified by the performing organization in accordance with 10 CFR Part 2.790, Availability of Official Records, and will not be submitted to the PDR's. The performing organization shall clearly identify, by FIN number, all contractor documents transmitted to the Division of Waste Management.

4.0 MEETINGS AND TRAVEL

4.1 Reports of Meetings and Field Trips

A report of meetings and field trips shall be provided by the performing organization to be received by the NMSS PM within 10 working days of completion of the meeting or field trip. These reports shall serve as a record of the trip or meeting and shall, as a minimum, identify the purpose, participants, itinerary, cost breakout, and significant findings.

4.2 Travel

The performing organization shall attend planning or review meetings generally of one day or two days at NRC in Silver Spring, Maryland, as specified by the NMSS PM.

The performing organization shall attend field trips, technical meetings or site visits as specified by the NMSS PM.

All domestic travel shall be approved in advance by the NMSS PM.

5.0 QUALITY ASSURANCE

For all draft and final technical reports delivered under this agreement, the performing organization shall assure that an independent review and verification of all numerical computations and mathematical equations and derivations are performed by qualified personnel other than the original author(s) of the reports. If the performing organization proposes to verify/check less than 100 percent of all computations and mathematical equations and derivations in the reports(s), (such as might be the case when there are a large number of routine, repetitive calculations), the performing organization must first obtain written approval from the NMSS PM. Computer generated calculations will not require verification where the computer program has already been verified. The NMSS PM has the option of auditing all documentation including project correspondence, drafts, calculations and unrefined data.

In addition, all reports, including those which do not contain numerical analyses must be reviewed by the performing organization's management and approved with two signatures one of which is for the performing organization's management at a level above the program manager.

When revisions for the reports are issued, a section must be included in the revised report to document dates, reasons and scope of all changes made since the issuance of the first performing organization's approved reports.

NRC has the option of appointing a Peer Group to review the draft report and make changes to the final report. The performing organization may recommend candidates for the peer group for approval by NMSS PM. In the occasion of dissent in the content of the final report, the dissenting party will have the option of stating its viewpoints and findings in a section of the report.

6.0 NRC FURNISHED MATERIAL

NRC will provide the performing organization with pertinent reports, data/information received from other sources which the performing organization identifies as beneficial to its understanding of the study and schedules for key NRC and DOE actions. For example, it is NRC's responsibility to see that the performing organization is placed on distribution for other pertinent NRC contractor progress and topical reports and notice of program review meetings.

7.0 PERIOD OF PERFORMANCE

The period of performance for the work specified in this SOW shall commence on the effective date of this agreement and continue to October 30, 1987.

8.0 KEY PERSONNEL

The performing organization shall submit a list of Key Personnel who are considered to be essential to the successful performance of the work proposed and shall not be replaced without the prior approval of the NMSS PM. In such event, the performing organization agrees to substitute persons possessing substantially equal abilities and qualifications satisfactory to the NMSS PM.

9.0 TECHNICAL DIRECTION

Dr. J.W. Bradbury (FTS-427-4055), is designated the NMSS Project Manager (PM) for the purpose of assuring that the services required under this SOW are delivered in accordance herewith. All technical instructions to the performing organization shall be issued through the NMSS PM. As used herein, technical instructions are those which provide details, suggest possible lines of inquiry, or otherwise complete the general scope of work set forth herein. Technical instructions shall not constitute new assignments of work or changes of such nature as to justify an adjustment in cost or period of performance. Directions for changes in cost or period of performance will be provided by the DOE Operations Office after receipt of an appropriate Standard Order for DOE Work (SOEW) (NRC Form 173) from the Director of the Office of Nuclear Material Safety and Safeguards (NMSS). If the performing organization receives guidance from the NMSS PM which is believed to be invalid under the criteria cited

above, the performing organization shall immediately notify the NMSS PM. If the NMSS PM and the performing organization shall notify the DOE Operations Office.

10.0 DISPOSAL OF PROPERTY

Prior to close out of this project, a reconciled report shall be developed by DOE to record available equipment and material purchased with NRC funds. This report should be developed as soon as possible after project completion or termination decision has been made, but not later than 60 days after the termination date. The report should be submitted to the NRC Division of Facilities and Operations Support, ADM, and the NMSS PM.

11.0 SUBCONTRACTS

The performing organization shall notify the NMSS PM of potential subcontracts before inquiries are made. The performing organization shall also afford NMSS PM the opportunity to be present at initial contacts between itself and the subcontractor and to participate in the discussion of the scope of work. The performing organization in notifying the PM of potential subcontracts, shall provide a brief description of work that each potential subcontractor has done for DOE so that the PM can review it for potential conflicts of interest. The performing organization shall also forward a copy of the anticipated scope of work and give one week advance notice of meetings between the performing organization and the subcontractor. A copy of all written correspondence (including performing organization change, progress reports and final reports) for the subcontracts will be forwarded to the NMSS PM.

12.0 DOE ACQUIRED MATERIAL

The performing organization must notify the NMSS PM prior to acquisition of any capital, ADP, or word processing equipment.

13.0 NRC FURNISHED MATERIAL

The NMSS PM shall provide the performing organization with the documents necessary for review.

14.0 TECHNICAL PRESENTATIONS AND PUBLICATIONS

The performing organization shall prior to release outside the performing organization, obtain NMSS PM approval of final drafts of any proposed speeches, journal articles, press release or other form of communication for information generated under this agreement. Costs for actions associated with these communications are beyond the scope of this agreement unless specifically approved by the NMSS PM.

15.0 WORK PROPOSAL

The performing organization's proposal will be submitted on NRC Form 189, as discussed in NRC Manual Chapter 1102, together with a discussion on the technical approach proposed.

16.0 ESTIMATED LEVEL OF EFFORT

It is estimated that approximately 4.1 staff years are required for FY85, FY86, and FY87 to satisfactorily complete the work described in this SOW.

Enclosures:
1. Microfiche Specification

MICROFORM SPECIFICATIONS FOR DIVISION OF WASTE MANAGEMENT CONTRACTS

Microfiche used for submittal purposes shall conform to the following specifications:

1. Microfiche containing source documentation shall conform to the NMA Type 1 format (ANSI/NMA MS.5) consisting of 98 frames arranged in 7 rows and 14 columns.

2. The reduction ratio shall be 24:1 for all microfiche.

3. The microfiche shall be standard 148mm x 105mm.

4. The microfiche shall be one silver-halide master and one diazo placed in individual acid free envelopes.

5. Diazo duplicates may be either blue/black or black.

6. The microfiche shall be titled in the following manner:

   FIN No. Title of Report Date
   Contract No.
   NUREG/CR No.
   Fiche No.

   Fiche number refers to pagination information, e.g., 1 of 2, 2 of 2, etc.

7. Title information shall be eye readable on a clear background.

8. The submittal of microfiche containing proprietary material shall be coordinated with the Document Management Branch, Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, 20555 to set format and procedures for submittal.

9. Foldouts, if any, shall be segmented and filmed in logical order.

10. The first frame shall be blank, and the second frame shall contain the resolution target (NBS 1010A).

11. Questions on microfiche specifications should be submitted in writing to:

    Document Management Branch, Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, Washington, DC 20555.