



**AGENCY FOR NUCLEAR PROJECTS
NUCLEAR WASTE PROJECT OFFICE**

Capitol Complex
Carson City, Nevada 89710
(702) 885-3744

December 21, 1988

Mr. Robert E. Browning
Director
Waste Management Division
Office of Nuclear Materials
Safety and Safeguards
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Bob:

I have enclosed some items that I believe will be of interest to you and your staff regarding various aspects of the DOE-OCRWM program. They are as follows:

- A. DOE's current application for a water appropriation from the State of Nevada for Yucca Mountain site characterization. Please note the final page which provides estimates of water use in various categories, especially for the ESF components.
- B. The April 1988 MOU between OCRWM and NVO. Of particular interest is the description of the roles and duties of the M&O Contractor.
- C. A clip from the Albuquerque Journal (12/16/88) regarding the use of rock varnish analysis for relative age dating, and the alleged consequences of its possible misapplication by LANL researchers working for YMPO.

I hope these items will be of use and interest to you.

On another subject - this week we received a letter from Jack Parry inviting a presentation by Nevada at the February 1989 meeting of the ACNW. The rationale for changing the date from next August or September is that Parry has just learned that the first DOE 6 month update of the DOE's SCP is not going to be issued until 1 year after first issuance. This was news to us.

Best wishes for the holidays.

Sincerely,

A handwritten signature in cursive script that reads "Steve".

Steve Frishman
Technical-Policy Coordinator

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PDR WASTE
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APPLICATION FOR PERMIT TO APPROPRIATE THE PUBLIC WATERS OF THE STATE OF NEVADA

THIS SPACE FOR OFFICE USE ONLY

Date of filing in State Engineer's Office _____

Returned to applicant for correction _____

Corrected application filed _____ Map filed _____

The applicant U.S. Department of Energy

Post Office Box 98518 of Las Vegas
Street and No. or P.O. Box No. City and Town

Nevada 89193-8518, hereby make... application for permission to appropriate
State and Zip Code No.

the public waters of the State of Nevada, as hereinafter stated. (If applicant is a corporation, give date and place of incorporation; if a copartnership or association give names of members.)

Is applicant a U.S. citizen? Yes No

Is applicant 21 years of age or older? Yes No

NRS 533.325 requires that applicant be a citizen of the United States or have legally declared their intention to become a citizen, and that they be 21 years of age or older.

1. The source of the proposed appropriation is Underground
Name of stream, lake, spring, underground or other source.

2. The amount of water applied for is 0.2 second feet.
One second foot equals 448.83 gallons per minute.

(a) If stored in reservoir give number of acre-feet _____

3. The water to be used for Other use (See No. 12)
Irrigation, power, mining, commercial, domestic or other use. Must limit to one major use.

4. If use is for:

(a) Irrigation, state number of acres to be irrigated _____

(b) Stockwater, state number and kind of animals _____

(c) Other use (describe fully under "No. 12. Remarks") See No. 12.

(d) Power:

(1) Horsepower developed _____

(2) Point of return of water to stream _____

5. The water is to be diverted from its source at the following point NE 1/4 of the SW 1/4 SEC. 19, T.13S.
Describe as being within a 40-acre subdivision of public
R. 50E (MDB&M) at a distance of 13,298 feet from the SW corner of SEC. 31, T.13S.
Survey, and by course and distance in a section corner. If on unsurveyed land, it should be so stated.
R. 50E at bearing of S.08° 46' 06" W. (See attached map), Protracted.

6. Place of use Sections 14-18, 19-23, 26-30, and 31-35, T.12S., R. 50E.;
Describe by legal subdivision. If on unsurveyed land, it should be so stated.
Sections 13-36, T. 12S., R. 49E.; Sections 13, 25-29, and 32-36, T. 12S., R. 48E.;
Sections 7-9, 16-21, and 28-31, T. 13S., R. 50E.; Sections 7-36, T. 13S., R. 49E.;
Sections 10-15, 22-27, and 34-36, T. 13S., R. 48E.; Sections 4-9, T. 14S., R. 50E.;
Sections 1-12, 15-22, and 27-34, T. 14S., R. 49E.; Sections 1-3, 10-15, 22-27, and
T. 14S., R. 48E.; Sections 3-6, T. 15S., R. 49E.; Section 1, T. 15 S., R. 48 E.

7. Use will begin about 01/01 and end about 12/31 of each year.
Month and Day

8. Description of proposed works (Under the provisions of NRS 535.010 you may be required to submit plans and specifications of your diversion or storage works.) See attached sheet No. 8.
State manner in which water is to be diverted, i.e. diversion structure.

Ditches and flumes, drilled well with pump and motor, etc

9. Estimated cost of works Existing = 540,000; Planned = 790,000

10. Estimated time required to construct works Five months. See No. 8 for details.
If well completed, describe works

11. Estimated time required to complete the application of water to beneficial use 5 years.

12. Remarks: For use other than irrigation or stock watering, state number and type of units to be served or annual consumptive use.

This application is made in support of the site characterization program for
Yucca Mountain, Nevada. See the attached sheet (No. 12) for water use estimates
during the first 7 years of the site characterization program (No. 12a). Included
on that attachment (No. 12b) is a breakdown of the various uses to which the
water will be applied.

TELEPHONE NUMBER
(702) 295-1146

APPLICATION MUST BE SIGNED
BY THE APPLICANT OR AGENT

By [Signature]
Signature, applicant or agent
P.O. Box 98518
Street and No., or P.O. Box No.
Las Vegas, Nevada 89193-8518
City, State, Zip Code No.

\$100 FILING FEE MUST ACCOMPANY APPLICATION

No. 8

Well J-13 is an existing well on the NTS. The well is equipped with a pumping station (See specifications of well and pumping station on the drawing that accompanies this application). A 6.2-mile-long, 6-inch-diameter, poly-vinyl chloride pipe buried 2 feet below grade extends from the well to the border of the NTS.

A booster pumping station will be installed about halfway (based on elevation) between the well and the place of use (See specifications of pumping station on the drawing that accompanies this application). The existing pipeline will be extended approximately 4,100 feet to the place of use where it will be pumped into a 150,000-gallon water tank located in the NE 1/4, SEC. 36, T.12S, R.49E, and the water will be used throughout this same area.

12a. ESTIMATED ANNUAL WATER CONSUMPTION

YEAR 1	-	2.4 mill. gal.
YEAR 2	-	30.9 mill. gal.
YEAR 3	-	23.7 mill. gal.
YEAR 4	-	22.0 mill. gal.
YEAR 5	-	20.1 mill. gal.
YEAR 6	-	17.0 mill. gal.
YEAR 7	-	15.0 mill. gal.

No estimates available beyond 7 years.

ENCLOSURE 1

MAP OF THE YUCCA MOUNTAIN AREA

ENCLOSURE 2

- Map to Accompany Application to Appropriate Water from Underground Source for Industrial Use.
- Drawing JS-025-055-C44.1, Exploratory Shaft Water System - Exist. J-13 Pump Station.
- Drawing JS-025-118-C14, Exploratory Shaft Facility Water System- Exist. J-13 Pump Station.
- Drawing JS-025-055-E39.1, Exploratory Shaft Water System - Exist. J-13 Pump Station.
- Drawing SK-025-6004-C1, Exploratory Shaft Facility Water System - Booster Pump Station.

**12b. ESTIMATED WATER REQUIREMENTS FOR SITE CHARACTERIZATION
OF YUCCA MOUNTAIN**

Activity	Gallons	Acre-feet
1. EXPLORATORY SHAFT FACILITY		
Site Preparation	6,700,000	20.5
ESF Surface Construction	2,100,000	6.4
ES-1 Collar.	1,000,000	3
Sinking of ES-1.	6,400,000	19.6
ES-2 Construction.	2,600,000	8
Underground Construction	2,500,000	7.7
Testing/Construction	2,100,000	6.4
Dust Control	43,000,000	131.9
Contingency (10%).	6,640,000	20.4
2. SURFACE BASED TESTING		
Drilling (includes holes in unsaturated zone, water table, USW H-7, as well as geologic, volcanic, and calcite/silica holes, surface-facility holes, holes for Phase I and II of performance assessment, in situ stress holes, land holes for the southern tracer complex)	11,122,000	34
Testing (includes large- and small-plot rainfall simulation, ponding studies, and studies of in situ stress).	1,302,000	4
Dust Control	45,600,000	140
<hr/>		
1. Total for ESF	73,040,000	224
2. Total for Surface Based	58,024,000	178
GRAND TOTAL	131,064,000	402

Rock Dating Expert Questions LANL's Use of Procedure

THE ASSOCIATED PRESS

LOS ALAMOS — The man who pioneered a "rock varnish" dating process said he's concerned about how it's being used by Los Alamos National Laboratory to help evaluate the stability of a Nevada site that could bury highly radioactive waste.

Rock varnish is the shiny coating that forms on rocks in dry climates. Ronald Dorn, an Arizona State University geographer, worked in the late 1970s to use it as a way to estimate how long rocks have been undisturbed on the ground.

The varnish, which can range from reddish brown to black, is made up of a mixture of clay particles and iron and manganese compounds and forms on a variety of rocks, usually in desert climates.

"Certain elements in the varnish are more mobile than others," Dorn said. "The ones that are more mobile are removed over time and the ones that are more stable remain."

Researchers measure the relative amounts of the elements in a varnish layer to estimate its age.

But Dorn and Los Alamos analyze the varnish and calibrate the measurements differently.

Dorn and his colleagues scrape varnish off rocks before analyzing the key trace elements, while Los Alamos' Charles Harrington and his team drill cores from the rock samples and analyze them under an electron microscope.

Dorn said it's hard to separate varnish from the rock using an electron microscope and that signals from the rock could be "contaminating" the varnish signals.

But Harrington said he believes rock contamination is more likely in Dorn's method. Another member of the team, Don Krier, said an electron microscope can detect differences between varnish and rock.

Dorn said he was concerned about the way the Los Alamos group calibrates its measurements. Rock dating can only give relative age estimates and must be compared to some absolute measurement, such as carbon dating. But Dorn and Los Alamos developed their comparison scales differently.

The Los Alamos team is using rock dating at Yucca Mountain in Nevada, one of the sites proposed for a high-level nuclear waste burial ground by the U.S. Department of Energy. The lab work is being conducted with DOE funding.

The researchers said their work has found many of the Nevada rock deposits are much older and more stable than previously believed. Some of the boulders have been dated at more than a million years.

"That anything could sit on a hillside that long is surprising," Harrington said.

He also said the work indicates erosion in the area is lower than previously believed and probably isn't a serious threat to a repository.

Dorn, who has conducted similar studies for the Nevada Bureau of Mines and Geology, said the varnish method is unproved compared to other dating methods. He said the Los Alamos approach could seriously overestimate the age of the varnish coating and thus the stability of the area.

"This is probably the single most important public policy decision that varnish will be used for," he said. "You have to take it seriously. If I see a significant chance for error, I'm going to throw a fuss."

Harrington said Los Alamos is skeptical of Dorn's approach to the dating.

He agreed varnish dating is experimental and not well tested, but said it has remarkable potential.

"It will take a modest amount of time to determine its real applicability and to be confident of the numbers," said Harrington.

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MEMORANDUM OF UNDERSTANDING

INTRODUCTION

This is a memorandum of understanding (MDU) between the Office of Civilian Radioactive Waste Management (OCRWM) and the Nevada Operations Office (NV) concerning the conduct of work accomplished through interactions between the Management and Operating (M&O) contractor for Systems Engineering, Development and Management and the Nevada Nuclear Waste Investigations (NNWSI) Project.

The NNWSI Project, hereinafter referred to as the Project, includes the Project Office established and staffed by Federal personnel in NV; prime contractors to NV conducting work in support of the Project; Federal agencies conducting work in support of the Project under interagency agreements with NV; and national laboratories conducting work in support of the Project under memoranda of understanding between NV and other Department of Energy Operations Offices. The above described prime contractors, Federal agencies, and national laboratories shall hereinafter be referred to as Project contractors. The M&O contractor for System Engineering, Development and Management, hereinafter referred to as the M&O contractor, is that contractor hired and managed by OCRWM pursuant to the Request for Proposals (RFP) issued February 25, 1988.

As stated above, this MDU addresses the conduct of work accomplished through interactions between the M&O contractor and the Project. Programmatic guidance from OCRWM for the conduct of this work, which is described in the Statement of Work for the above-mentioned RFP, will be provided directly to the M&O contractor. This MDU does not address work conducted by the Project under programmatic guidance provided by OCRWM directly to the Project Office. For example, OCRWM will continue to provide programmatic guidance directly to the Project Office in such areas as institutional interactions and design and construction of the exploratory shaft facility; the Project Office will continue to have the lead in these areas of responsibility.

This MDU consists primarily of two sections. The first section describes the Project - M&O contractor relationship in terms of general project management guidelines. The second section describes the relationship in more detail, and is structured according to the current Work Breakdown Structure (WBS).

GENERAL GUIDELINES

1. For work that will continue to be conducted by the Project, DOE/NV will continue as the contracting office for all contracts and other agreements between the Government and Project contractors, and remain responsible for Contracting Officer duties. DOE/NV shall be responsible for managing Project contractor resources.

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2. OCRM will approve the cost, schedule, and technical baselines for work to be conducted by the Project in consultation with the Project Office and with the M&O contractor. Programmatic guidance for this work will be provided by OCRM. The M&O contractor will provide direction, within the approved baseline, to the Project contractors for conduct of the work. This direction from the M&O contractor to the Project contractors will be provided through the Project Office field representative. The Project Office field representative will review the direction from the M&O contractor for consistency with: programmatic guidance; approved baselines; with the Project contractor's scope of work; with financial obligations authorized for the contract; and with other contract administration requirements.
3. Changes to the approved cost, schedule, and technical baselines will be approved by OCRM in accordance with established baseline change control procedures.
4. The Project's management and technical reports will be provided to OCRM and the M&O contractor as follows:
 - Management reports issued by Project contractors will be addressed to the Project Office with an information copy to the M&O contractor.
 - Management reports issued by the Project Office will be addressed to OCRM with an information copy to the M&O contractor.
 - Technical reports issued by Project contractors after Project Office review is completed will be addressed to the M&O contractor with an information copy to the Project Office and to OCRM.
5. The Project's annual budget submission will be addressed to OCRM with an information copy to the M&O contractor.
6. NV shall be responsible for internal quality assurance and surveillance of Project contractors. Audits and surveillance by OCRM or the M&O contractor will be considered external HQ audits and surveillance.
7. If direction provided by the M&O contractor to Project contractors through the Project Office field representative is, in the opinion of the field representative, inconsistent with programmatic guidance; with approved baselines; with the Project contractor's scope of work; with financial obligations authorized for the contract; or with other contract administration requirements; then the issue will be resolved by the Project Manager, DOE NMSI Project Office after consultation with and concurrence by OCRM.
8. For work that is now conducted by the Project contractors but will be assigned to the M&O contractor, e.g. waste package design and development by Lawrence Livermore National Laboratory, NV will assist

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OCRWM and the M&O contractor⁽¹⁾ in establishing the appropriate contracts, interagency agreements, and memoranda of understanding between OCRWM and the M&O contractor, and the current Project contractors. Until such appropriate contracts, interagency agreements, and memoranda of understanding are established, NV will continue as the contracting office.

WBS-SPECIFIC GUIDELINES

Systems

OCRWM and the M&O contractor⁽¹⁾ will be responsible for management and integration of the Nuclear Waste Management System, including integration of the mined geologic disposal system (MGDS) with all other system elements and components. This Nuclear Waste Management System includes the geologic repository, transportation systems, pre-emplacement packaging and storage capabilities, MRS, and other components as defined in the Statement of Work of the RFP.

The Project contractors will conduct site-specific system studies in accordance with M&O contractor direction and provide input to the M&O contractor for developing system and subsystem requirements and description documents. The Project will provide input to and support the M&O contractor in conducting readiness reviews, design reviews, and technical/system assessments. The Project will submit contractor-prepared technical documents to the M&O contractor for approval. OCRWM and the M&O contractor⁽¹⁾ will conduct required external peer reviews of technical documents, designs and activities in all WBS areas of the Project. The Project will conduct internal reviews of Project technical documents in all WBS areas prior to OCRWM and M&O contractor approval for release. The Project will provide input to and support of OCRWM and the M&O contractor in the management of the technical data base and baseline change control process.

The Project contractors will conduct preliminary analyses (i.e., ensure the quality of the data, evaluate data against data requirements and study plans, and draw preliminary conclusions) on Project contractor-generated systems data. The M&O contractor will be responsible for evaluation and approval of these data and resulting documentation, as well as integration of data and conduct/evaluation of overall systems performance assessment.

Waste Package

OCRWM and the M&O contractor⁽¹⁾ will be responsible for the design and development of the waste package, and for the integration of the design with all other elements in the Nuclear Waste Management System.

The M&O contractor will evaluate existing plans and provide new or modified plans (as needed) for the waste package program. As part of this effort, the M&O contractor is responsible for ensuring the conduct of an adequate waste package environment characterization test program by the Project.

(1) The phrase "OCRWM and the M&O Contractor" means that OCRWM has the responsibility for these items and through the M&O contract, has delegated responsibility for implementation to the M&O contractor.

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The Project contractors will prepare implementing plans and procedures, collect data, and perform preliminary analysis for review and approval by the M&O contractor. All non-field related waste package (e.g., waste form, container materials) testing efforts are the direct responsibility of the M&O contractor, with support from the Project in determining the waste package environment. The Project will provide support to OCRM and the M&O contractor in waste package design reviews, materials selections, readiness reviews, and other reviews and support as requested.

Site

OCRWM and the M&O contractor will be responsible for ensuring the site characterization program meets the design and licensing objectives of the program.

The M&O contractor will be responsible for evaluating existing site investigation programs as described in the SCP and study plans, and to revise the study plans or prepare new ones as necessary. For field-related site characterization work, the Project contractors will be responsible for directly carrying out the work in accordance with M&O contractor technical direction. The Project contractors will prepare implementing plans and procedures, and collect site data, as well as perform preliminary analyses on the site characterization data. The M&O contractor will review and approve the results of data collection and preliminary analyses.

The Project will develop preliminary drilling strategies and plans in accordance with M&O contractor site data requirements and will provide them for review and approval by the M&O contractor. The Project will develop, maintain, and operate a core sample management facility. The Project will prepare preliminary procedures related to the core sample management facility operation for review and approval by the M&O contractor.

OCRWM and the M&O contractor, with inputs from the Project Office, will provide strategy for the environmental and socioeconomic programs. The Project will be responsible for managing and conducting environmental and socioeconomic field data collection activities, and in-state transportation related activities. The Project will provide interface coordination for transportation outside the State. This responsibility will include support for EIS scoping hearings, revisions to field plans and technical procedures, data collection and analyses and preliminary interpretation of the data. The M&O contractor will review and approve plans and procedures, conduct on-site reviews of data collection activities, and review and approve the results of data collection, preliminary analyses and interpretations to ensure that environmental activities are consistent with, and integrated into, the Program strategies and environmental document development.

Repository

OCRWM and the M&O contractor⁽¹⁾ will be responsible for the design and development of the repository facility and equipment through receipt of the NRC construction authorization and for the integration of the design with all other elements in the Nuclear Waste Management System.

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The M&O contractor will evaluate existing plans and provide new or modify existing study plans (as needed) for the repository design and development program. In accordance with M&O contractor direction, the Project contractors will be responsible for the conduct of field-related rock mechanics, seals, foundation, and seismic test programs. The Project contractors will prepare implementing plans and procedures, collect data, and perform preliminary analyses for review and approval by the M&O contractor. Such analyses will be integrated by the M&O contractor into its repository performance assessment studies. The Project will provide support to OCRWM and the M&O contractor in repository design reviews, seals materials selections, readiness reviews and other reviews as requested.

Regulatory and Institutional

The M&O contractor will be responsible for supporting OCRWM in the repository licensing process, and will assist OCRWM in environmental compliance and institutional activities.

The M&O contractor will formally review the existing SCP and study plans, and following consultation with OCRWM and the Project, revise the study plans (or prepare new ones) with Project contractor support, as appropriate. SCP progress reports and revised or new study plans will be prepared by the M&O contractor, involving the Project, as appropriate. NRC interactions will be coordinated by OCRWM and the M&O contractor. OCRWM and the M&O contractor will have responsibility for interpretation of regulatory requirements, and resolving possible conflicts arising from interpretations differing from those used as the basis for developing the licensing strategies.

OCRWM will be the Licensee for the repository. The M&O contractor will prepare for OCRWM approval the complete License Application (except for the EIS), including the Safety Analysis Report. OCRWM will arrange for and lead meetings with the NRC. The M&O contractor will be responsible for logistics of NRC meetings, including agendas and meeting records. The M&O contractor will be responsible for preparing material, with Project input, to be discussed in workshops with the NRC. Supporting analyses prepared by the Project will be reviewed and approved by the M&O contractor. The M&O contractor will, with the assistance of the Project, assimilate the information in position papers with programmatic concerns such as design or licensing and finalize the technical position papers. The M&O contractor will be responsible for preparation of issue resolution reports that summarize the results of deliberation about one or more position papers. The Project will provide assistance as necessary.

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The Project with M&O contractor assistance and overview will have primary responsibility for identifying Federal, State and local environmental regulatory compliance requirements, planning compliance activities, and preparing reports, permit applications and any other documentation needed to satisfy the requirements applicable to field data collection, including monitoring and mitigation. The Project will be the primary contact with regional environmental regulatory agencies and will provide any compliance reports required by these agencies. The Project will maintain an environmental compliance tracking system and evidence file, and will ensure that changes in the regulations are integrated with Project and Program activities. The M&O contractor will have primary responsibility for integrating the Project environmental regulatory compliance activities with the rest of the Program. Revisions to project environmental regulatory compliance documents, the Environmental Field Activities Plan, the Environmental Program Plan, and the mitigation and monitoring plans will be reviewed in advance by the M&O contractor prior to release to ensure compatibility and comparability with OCR&M policies. The Project environmental regulatory compliance program will be reviewed on a regular basis by the M&O contractor and status reports on the Project's compliance efforts will be prepared by the M&O contractor for distribution within OCR&M.

OCR&M will be responsible for the preparation of the environmental impact statement (EIS) required by Section 114(f) of the NWPA as amended. OCR&M will be responsible for the EIS scoping hearings, preparation of the EIS implementation plan, interagency cooperative agreements, and compilation of the draft and final EIS documents. The M&O contractor will prepare for OCR&M approval environmental reports that will contain the information necessary for development and preparation of the EIS. The M&O contractor will also assist OCR&M in EIS data collection through: (1) coordination of the monitoring of field activities for EIS data collection; and (2) preparation of topical reports to be used as a reference in the EIS. The Project, in accordance with OCR&M direction, will also be responsible for support to OCR&M in such areas as site-descriptive data, background environmental information, and assessment of environmental impacts and appropriate mitigation measures.

The Project Office has the lead role in state and local institutional activities; it will keep OCR&M informed of its routine activities. For new issues requiring policy guidance, the Project Office shall coordinate required actions with OCR&M.

Exploratory Shaft Facility

The Project is responsible for the planning, design, construction, and operation of the exploratory shaft facility (ESF). Project contractors will coordinate with the M&O contractor, and conduct ESF design reviews and readiness reviews with OCR&M and M&O contractor involvement consistent with Project plans, established design requirements, quality assurance requirements, and DOE policy. The M&O contractor is responsible for establishing any new design requirements for facility modifications and decommissioning.

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The M&O contractor will be responsible for providing technical direction on insitu testing required in the ESF to the Project. The Project will manage and conduct the testing in the ESF in accordance with these data requirements. The Project contractors will prepare implementing plans and procedures, collect the data, perform preliminary analyses, and provide data reports and preliminary analyses to the M&O contractor for review and approval. The Project contractors will also plan and conduct prototype tests in preparation for conducting insitu tests in the ESF. The M&O contractor will review and approve Project contractor-prepared plans and procedures related to such prototype tests.

Test Facilities

The M&O contractor will assess the need and develop requirements for field test facilities and related support facilities. The Project will provide input to such evaluations and manage existing test facilities as appropriate.

Land Acquisition

OCR&M and the M&O contractor will be responsible for the evaluation of land requirements for the repository and supporting facilities, and the land acquisition process. The Project will provide input on the definition of boundaries of the controlled area and the accessible environment and provide draft input for the preparation of land acquisition plans. The M&O contractor will review and approve Project input, and recommend the boundaries of the controlled area and the land requirements for repository support facilities (e.g., roads, railroads). The Project will provide input as required to support the preparation of analyses and documents required for land acquisition, for land use consistent with established constraints or for ultimate disposition. The Project will secure and maintain land access, and ensure compliance with the terms and conditions of land access agreements and/or permits as appropriate for the period of site characterization.

Project Management

The Project will be responsible for developing and implementing a project management system applicable to the work for which it is responsible. This project management system will satisfy applicable requirements of DOE Order 4700, and 2250.1B as well as additional reporting requirements identified by OCR&M and the M&O. The Project's management and technical reports will be provided to OCR&M and the M&O contractor as follows:

- Management reports issued by Project contractors will be addressed to the Project Office with an information copy to the M&O contractor.
- Management reports issued by the Project Office will be addressed to OCR&M with an information copy to the M&O contractor.
- Technical reports issued by Project contractors after Project Office review will be addressed to the M&O contractor with an information copy to the Project Office and to OCR&M.

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The M&O contractor will maintain the Program Work Breakdown Structure (WBS) and associated dictionary. The Project will maintain a Project WBS and dictionary that will be consistent with the Program WBS and that will address the work for which it is responsible.

The M&O contractor will establish and maintain, subject to OCRWM approval, baseline schedules and budgets for all Program activities, including Project activities. The establishment of baseline schedules and costs for work to be done by the Project will be accomplished with the involvement of the Project. The Project will manage its activities consistent with the established schedule and cost baselines, and will follow approved change control procedures when changes are required. The Project's annual budget submission will be addressed to OCRWM with an information copy to the M&O contractor.

The Project will maintain detailed schedules and cost estimates applicable to the work for which it is responsible. The scheduling systems and cost estimate formats devised by the M&O contractor will be consistent with requirements established by OCRWM.

OCRWM will be responsible for providing overall QA policy and guidance to the Project and the M&O contractor including specific direction for implementation of QA policy. OCRWM will define the responsibilities and authorities for QA activities and establish the applicable QA requirements for the Project. OCRWM with support from the M&O contractor will review and approve the Project QA Program. OCRWM and the M&O contractor will assure effective implementation of the Project QA Program through audits and surveillances. OCRWM, with M&O contractor support, will have the lead for interfacing with federal regulatory agencies with the involvement and support of the Project.

The DOE NWSI Project Office QA responsibilities include providing overall QA guidance and direction to other organizations involved in the Project contractors through review, audit, and approval of contractor QA programs. The Project will develop and implement the Project QA Plan and appropriate implementing procedures.

AGREEMENT

This MDU shall become effective when signed by all parties. It may be amended at any time by written agreement between OCRWM and NV.

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Approve:

Charles P. Kay
C. Ex. Kay, Acting Director
Office of Civilian Radioactive
Waste Management

April 8, 1988
Date

4/21/88 N. Aquilina
N. Aquilina, Manager
Nevada Operations Office

April 25, 1988
Date