



LOS ALAMOS SCIENTIFIC LABORATORY  
UNIVERSITY OF CALIFORNIA  
LOS ALAMOS, NEW MEXICO 87545  
Telephone Ext:

OFFICE MEMORANDUM

DATE: June 3, 1980

TO :R. K. Lohrding, DIR, MS-357  
T. K. Keenan, H-7 Group Leader, MS-518  
W. R. Hansen, H-8 Group Leader, MS-490

FROM :James G. Steger, LS-6 Alternate Group Leader §

SUBJECT :LLW PROGRAM INFORMATION

SYMBOL :LS6-80-174

MAIL STOP: 495

We have recently received the attached document from ALO which contains information on communications and R & D needs in the areas of waste segregations and monitoring. These are forwarded to you for your information and possible action.

JGS:tj

Attach: a/s

cc: M. A. Rogers, LS-6  
M. L. Wheeler, LS-6

1555  
General



12171



Department of Energy  
Albuquerque Operations Office  
P.O. Box 5400  
Albuquerque, New Mexico 87115

H. N Hill, Area Manager, Dayton Area Office  
Earl Bean, Operations, Rocky Flats Area Office  
Eugene Wewerka, Group Leader, LS-6, Los Alamos National Scientific Laboratory

LOW-LEVEL WASTE MANAGEMENT COMMUNICATIONS AND TECHNOLOGY DEVELOPMENTS

Enclosed are two letters sent to ALO by Dewey Large, Program Manager, ORO Radioactive Waste Management Program. Enclosure A discusses communication channels. Enclosure B discusses ORO's interest in receiving Field Task Proposals/Agreements from ALO contractor organizations, should this be an interest.

Because of the short turn around time (June 25) involved in these submittals, I suggest you send them directly to Dewey Large at ORO, with a copy to me. Should you have any questions on the submittals, call Dewey directly on FTS 626-0715.

Original Signed By  
Robert Y. Lowrey

Robert Y. Lowrey, Director  
Waste Management & Transportation  
Research Division

WMTRD:JFB (U-169)

Enclosures:  
As stated

cc: K. R. Braziel, Area Manager, LAAO, w/o encl.

MAY 22 1980

NOTE

A. L. Lotts, Director, Nuclear Fuel & Waste Program, ORNL

LOW-LEVEL WASTE MANAGEMENT PROGRAM COMMUNICATION

Attached are the subject procedures, essentially in content as we agreed during the March LLWMP meeting in Idaho Falls, which are to be implemented immediately. These were furnished to us officially by Dr. John Peel, who we understand, has forwarded copies to Managers of all DOE Field Offices. We can assume that the Field Offices will, in turn, bring the procedure to the attention of the respective Nuclear Waste Management staffs and contractors.

Communications, as appropriate, should be addressed:

For IDO: Dr. John W. Peel, Manager  
National Low Level Waste Program  
Idaho Operations Office  
550 Second Street  
Idaho Falls, Idaho 83401

For EG&G: Dr. George Levin, Program Manager  
Low Level Waste Program  
EG&G Idaho  
P. O. Box 1625  
Idaho Falls, Idaho 83415

For ORO: D. E. Large, Program Manager  
ORO Radioactive Waste Program  
Department of Energy  
P. O. Box E  
Oak Ridge, TN 37830

A. L. Lotts

-2-

For ORNL: Robert S. Lowrie, Program Manager  
Low Level Waste Program  
Oak Ridge National Laboratory  
P. O. Box X  
Oak Ridge, TN 37830

*Dewey E. Large*

D. E. Large, Program Manager  
ORO Radioactive Waste Management Program

ER-12:DEL

Attachment:  
As stated above

cc w/atchmt:  
John W. Peel, IDO  
Oscar Elgert, RLO  
Elizabeth Bracken, RLO  
Lonnie Lanni, SAN  
Robert Lowrey, ALC ←  
Sally Mann, CHO  
Edward Goldberg, SRO

NOTE:

May 6, 1980

TO: D. E. Large, DOE-OR

FROM: *J. W. Peel*  
J. W. Peel, DOE-ID

SUBJECT: LOW-LEVEL WASTE PROCEDURE

ID has developed administration procedures for use in the Low-Level Waste Management Program. Attached is a copy of the procedure for communications. This matter was discussed with you on April 30, 1980.

Attachment

cc: R. M. Nelson, DOE-ID  
G. B. Levin, EG&G

LOW-LEVEL WASTE MANAGEMENT PROGRAM  
COMMUNICATION PROCEDURES

The following procedure should be used by all participants in the Low-Level Waste Management Program:

1. ID encourages frequent discussions between contractor participants in the Low-Level Waste Management Program. EG&G low-level waste personnel are requested to communicate directly with ORNL low-level waste personnel on all low-level waste technical matters. In addition, correspondence between EG&G and ORNL should be directly between each other on all matters except low-level waste policy and budget guidance (scope, cost, schedule). Copies of all correspondence should be sent to both ID and OR.
2. Program policy and budget guidance (scope, cost, schedule) and requests requiring significant efforts will be provided by ID to appropriate field offices.
3. Technical direction pertaining to technology development matters will be between ORNL and technology development participants.
4. The lead and alternate lead contractors may communicate directly with program participants on all matters except program policy and budget guidance which must be between the respective field offices.
5. Regarding new work, no discussions should occur between contractors until initial contact has been made through ID and the appropriate field office(s) involved on a case-by-case basis.
6. Program contractors should not initiate communications directly with DOE Headquarters or other DOE offices unless prior approval of the cognizant DOE field office is obtained.
7. WEP Numbers 3.5 and 3.10 should be submitted directly to ORNL with copies to OR, ID, and G. Levin, EG&G.



Department of Energy  
Oak Ridge Operations  
P.O. Box E  
Oak Ridge, Tennessee 37830

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2	1
REGISYS NC	
COPIES TO	

May 19, 1980

A. G. Fremling, Manager, Richland Operations Office  
C. E. Williams, Manager, Idaho Operations Office  
R. H. Bauer, Manager, Chicago Operations Office  
H. E. Roser, Manager, Albuquerque Operations Office ←  
J. La Grone, Manager, San Francisco Operations Office  
R. L. Morgan, Manager, Savannah River Operations Office

#### LOW-LEVEL WASTE MANAGEMENT PROGRAM - TECHNOLOGY DEVELOPMENT

The ORO Radioactive Waste Management Program has the responsibility for technology development required for the National Low-Level Waste Management Program. This assignment results from ORO being designated by the Headquarters Office of Nuclear Waste Management as Associate Lead with Idaho Operations Office in the lead position. UCC-ND is the support contractor for ORO with ORNL as the performing organizational unit. EG&G is the support contractor for IDO with EG&G Idaho the performing organizational unit.

This program has need for technology development to begin immediately in the areas of radioactive waste segregation, treatment of aqueous wastes, treatment of organic wastes, and generic environmental monitoring. We want to afford an opportunity for several DOE contractors to be involved in the technology development efforts. Members of your waste management staff in communications with my staff have indicated that your contractors are interested in being considered for development assignments. If you agree, please bring the enclosed "Preliminary Negotiation Data Sheets" to the attention of the appropriate individuals on your staff and in your contractor organization. Field Task Proposals/Agreements responding to this need should be received and under review by the Low-Level Waste Program no later than June 25. Responses should be sent in triplicate to:

Dewey E. Large, Program Manager  
ORO Radioactive Waste Management Program  
U. S. Department of Energy  
Post Office Box E  
Oak Ridge, Tennessee 37830

with copies to:

Dr. John W. Peel, Manager  
Low-Level Waste Management Program  
U. S. Department of Energy  
Idaho Operations Office  
550 Second Street  
Idaho Falls, Idaho 83401

May 19, 1980

Dr. Robert S. Lowrie, Manager  
National Low-Level Waste Management Program  
Oak Ridge National Laboratory  
Post Office Box X  
Oak Ridge, Tennessee 37830

Dr. George B. Levin, Program Manager  
Low-Level Waste  
EG&G Idaho, Inc.  
Post Office Box 1625  
Idaho Falls, Idaho 83401

Questions or comments concerning preparations, submission, and processing of the FTP/As may be brought directly to the attention of Dewey Large (FTS 626-0715).

Your cooperation in the effort to meet these technology development needs is appreciated.

ER-12:DEL

Enclosure:  
Prel. Neg. Data Sheets (4)

cc w/o encls:  
J. W. Peel, IDO  
M. Dare, PB-10, ORO  
J. A. Lenhard, ER-10, ORO  
S. W. Ahrends, ER-12, ORO

*RJH*  
by *RJH* R. J. Hart  
Manager

## PRELIMINARY NEGOTIATION DATA SHEET

For a Scoping Study on Low-Level  
Radioactive Waste Segregation Practices (W.B.S. 3.5.2)

### 1. Purpose of Data Sheet

The Low Level Waste Management Program desires to arrange for services as described below. The purpose of this preliminary negotiation data sheet is to inform prospective DOE contractors of the nature and scope of this requirement and to permit their proper evaluation of the tasks involved to allow subsequent preparation and submission of an appropriate Field Task Proposal/Agreement (FTP/A) to comply with the schedule shown in section 5.

### 2. General Description

The services required are those necessary to evaluate the current low-level radioactive waste segregation practices from all types of domestic waste generators. The purpose of this effort will be to analyze and evaluate the need for new or improved low-level waste segregation techniques as an aid for more efficient waste processing, reducing the volume of waste that needs processing, and to provide the capability of discriminating wastes based on their chemical, physical, and radiation properties thus permitting the selection of the disposal method to match the hazard of the segregated material. The evaluation will categorize the waste by physical,

chemical, and/or hazardous properties, review current practices, determine the need for additional segregation, and include recommendations for needed development work.

3. Description and Scope of Services for Which FTP/A's Are Solicited

The proposer shall offer the services listed below. The FTP/A should address, but not be limited to, those listed items and how the tasks are to be accomplished.

3.1 Scope

The current low-level radioactive waste segregation practices to be examined include those of nuclear power reactors, nuclear fuel fabricators, hospitals and teaching institutions, and industrial users.

The following should be considered in the FTP/A:

- Documentation of the composition and generation rate of wastes from nuclear fuel fabricators and industrial users. See Attachment 1. The SWIMS data system (EG&G) and the Integrated Data Base (ORNL) may be valuable sources of information.
- State-of-the-art for waste segregation.
- Comparison of actual segregation practices with established procedures (Regulatory, Standards Group, Facility).

- Analysis of the relationship between waste segregation practices and waste treatment processes.
- Recommendations for the development of segregation technology to aid either the waste generator or the waste processor.
- Assessment of the cost, personnel exposure, and facility modifications that may be required to significantly improve waste segregation practices.

3.2 Reports Required to be Furnished to ORNL with Copies to EG&G

- A detailed program plan with a task description of the technology being developed and a schedule for the required tasks. (To be submitted to the Low-Level Waste Management Program, ORNL with copy to EG&G Idaho, for review and comment before preparing the final version.
- A current year work plan.
- Monthly task management summary reports. (Include ORNL and EG&G in the distribution of any monthly/quarterly technical reports.
- An annual technical report.
- A technology transfer document to aid in the industrial application of the technology.

4. Availability of Preliminary Information

Preliminary information for this task may be found in:

- ONWI-20, "A Waste Inventory Report for Reactor and Fuel Fabrication Facility Wastes," by J. Phillips, et al., NUS Corp. (NUS-3314), March 1979.
- ORNL/NFW-80/8, "A State-of-the-Art Report on Low-Level Radioactive Waste Treatment," by A. H. Kibbey and H. W. Godbee, May 1980.
- NUREG-0456, "A Classification System for Radioactive Waste Disposal-- What Waste Goes Where?" J. A. Adam, et al., June 1978.
- NUS-3440, "Preliminary State-by-State Assessment of Low-Level Radioactive Wastes Shipped to Commercial Burial Grounds," NUS Corp., August 1979.
- ORP/TAD-78-1, "A Survey of Packaging for Solidified Low-Level Radioactive Waste," W. F. Holcomb, EPA, September 1978.
- 10 CFR Part 61, "Disposal of Low-Level Radioactive Waste and Low-Activity Bulk Solid Waste," NRC, November 5, 1979 (draft).

Additional information may be obtained through the Low-Level Waste Information Center (FTS 624-7769).

5. Preliminary Schedule

The estimated time schedule for the evaluation of the FTP/A(s), and performance of the tasks is as follows:

FTP/A responses distributed to ORO, with copies to IDO, EG&G-Idaho, and ORNL	June 25, 1980
Announcement of selected FTP/A's	August 1, 1980
Start of task effort	October 1, 1980
Detailed Program Plan and Task Schedule to ORNL with copy to EG&G	December 1, 1980
Evaluation of Practices and Techniques	September 1, 1981
Annual Technical Report, FY 1981	September 30, 1981
Recommendations	October 1, 1981
Demonstration of technology	July 1, 1982
Technology transfer document (topical report)	September 30, 1982
Annual Technical Report FY 1982	September 30, 1982

Table 2-2. Sources and types of low-level radioactive wastes  
(as indicated by circles)

Sources	TYPES OF WASTE GENERATED												
	DRY WASTES				WET WASTES								
	Combustible		Noncombustible		Filter cartridges	Spent resins	Slurries and sludges	Aqueous concentrates	Special aqueous solutions <sup>a</sup>	Oils	Other organic liquids	Membranes <sup>b</sup>	Biological
Com-pactible	Noncom-pactible	Com-pactible	Noncom-pactible										
<b>GOVERNMENT</b>													
Defense	•	•	•	•	•	•	•	•	•	•	•	•	
D&D <sup>c</sup>	•	•	•	•		•		•					
R, D, & D <sup>d</sup>	•	•	•	•		•	•	•	•	•	•	•	•
<b>COMMERCIAL</b>													
<b>Fuel cycle</b>													
Mining	•	•	•	•			•	•					
Milling	•	•	•	•			•	•					
UF Production	•	•	•	•			•						
Fuel Use <sup>e</sup>	•	•	•	•			•		•	•			
Fuel Fabrication	•	•	•	•			•		•	•			
Power Plants	•	•	•	•	•	•	•	•	•		•		
Spent Fuel Storage	•	•	•	•		•	•						
D&D	•	•	•	•		•		•					
<b>Nonfuel cycle</b>													
Medical	•		•	•							•		•
Pharmaceutical <sup>e</sup>	•			•							•		•
Universities	•		•	•		•					•		•
Other Industries <sup>e</sup>	•			•		•							

Attachment 1

<sup>a</sup>Decontamination, pickling, etching, electropolishing, etc. solutions.

<sup>b</sup>Membranes from processes such as ultrafiltration (UF) and reverse osmosis (RO).

<sup>c</sup>Decontamination and decommissioning (D&D) operations.

<sup>d</sup>Research, development, and demonstration (R, D, & D) programs.

<sup>e</sup>Data on these wastes are incomplete and difficult to obtain.

## PRELIMINARY NEGOTIATION DATA SHEET

For Developing Generic Environmental Monitoring  
Techniques and Plans for Low-Level Radioactive  
Waste Disposal Sites (W.B.S. 3.5.1)

### 1. Purpose of Data Sheet

The Low-Level Waste Management Program desires to arrange for the services described below. The purpose of this preliminary negotiation sheet is to inform prospective DOE contractors of the nature and scope of this requirement and to permit proper evaluation of the tasks involved to allow subsequent preparation and submission of an appropriate Field Task Proposal/Agreement (FTP/A).

### 2. General Description

The services required are those necessary to develop generic environmental monitoring techniques and plans for the establishment, operation, and close-out of shallow land burial facilities for low-level radioactive wastes. The purpose of this task will be to provide operators of low level waste disposal facilities with the information necessary to design and develop environmental monitoring programs for their sites.

### 3. Description and Scope of Services for Which Proposals Are Solicited

The FTP/A should address, but not be limited to, those items listed and how tasks are to be accomplished.

### 3.1 Scope

The following tasks should be considered in the FTP/A:

#### 3.1.1 Current monitoring state of the art —

Some work has been done in assembling the information currently available describing monitoring procedures applicable to Low Level Waste Disposal Facilities, see reference list. This effort should bring together current knowledge of monitoring techniques and identify gaps. It would include:

- Review of monitoring equipment, techniques, and systems.
- Review of statistics and design of monitoring networks.

#### 3.1.2 Identification of monitoring requirement for site qualification and regulatory and operational controls —

This task would include, but not be limited to, identifying:

- Pre-operational monitoring to establish base-line data.
- Operational monitoring and evaluation of associated impacts.
- Post-closure monitoring and evaluation of potential long term impacts.
- Review of federal regulations.
- Data and information collection systems, including format.

#### 3.1.3 Determination of R&D needed —

This would include such needs as new instrumentation, sampling systems, and such other R&D studies identified in items 3.1.1 and 3.1.2.

#### 3.1.4 Prepare a Technology Transfer Document —

This document would provide, in a guide, the information necessary for operators to design and conduct a monitoring program for a waste disposal facility. It would be based initially on current information and would be updated to include new techniques and monitoring systems as they are developed.

3.2 Reports Required to be Furnished to ORNL with Copies to EG&G

- A detailed program plan with a task description or the technology being developed and a schedule for the required tasks. (To be submitted to the Low-Level Waste Management Program, ORNL with a copy to EG&G Idaho, for review and comment before the final version is prepared.
- A current year work plan.
- Monthly task management summary reports. (Include ORNL and EG&G in the distribution of any monthly/quarterly technical reports.)
- An annual technical report.
- A document, in loose leaf form, containing information and outlining various procedures for environmental monitoring of low-level waste sites. The document will be updated, as necessary, to incorporate revisions in regulations and additional information.

4. Availability of Preliminary Information

- NUREG-0456, "A Classification System for Radioactive Waste Disposal -- What Waste Goes Where?", J. A. Adam, et al., June 1978.
- ORNL/Sub-79/13617/2, "Low Level Waste Management: A compilation of Models & Monitoring Techniques," J. E. Mosier, et al., April 1980.
- ORNL/Sub-80/13619/1, "Identification of Technical Problems Encountered in the Shallow Land Burial of Low-Level Radioactive Wastes,": D. G. Jacobs, et al., March 1980.

Additional information may be obtained through the Low Level Waste Information Center (FTS 624-7769)

5. Preliminary Schedule

The estimated time schedule for the evaluation of the FTP/A(s) and performance of the tasks is as follows:

FTP/A responses distribution to ORO, with copies to IDO, EG&G-Idaho, and ORNL	June 25, 1980
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Detailed Program Plan and Task Schedule To ORNL with Copy to EG&G	December 1, 1980
Waste Site Environmental Monitoring Procedures Document	September 30, 1981
Annual Technical Report, FY 1981	September 30, 1981