

Rogers



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OFFICE MEMORANDUM

TO : All Participants in LS-6 DOE Sponsored Waste Management Programs

DATE: August 28, 1980

FROM : E. M. Wewerka, LS-6 Group Leader *EMW*

J. G. Steger, LS-6 Alternate Group Leader *\$*

SUBJECT : TASK DESCRIPTIONS FOR FY81 RESEARCH EFFORTS

SYMBOL : LS6-80-300

MAIL STOP: 495

1035 General

As you know, there has been a significant redefinition of the direction and philosophy of the DOE national low-level waste program. The major objectives of the national program are now tied to providing the technical information to support the development and opening of a new SLB, low-level waste disposal site by late 1985. Essentially all of the technical effort within the DOE LLW Program will be directed at the 1985 site opening goal. A description of the national program and its intents are contained in the documents that we gave to you a couple of weeks ago subsequent to our trip to EG&G and IDO.

A preliminary assignment of technical tasks for the national LLW program has been made by EG&G and IDO (see most recent document that Steger has given you), and initial approval for these assignments has been given by headquarters. The most pressing activity that we have to complete in the next two weeks (by September 15) is to generate task descriptions for the activities assigned to us and to get them to Idaho. Accordingly, we ask that you give your maximum attention to completing this chore.

In reading the brief technical task descriptions in the two handouts that we have given you, there is obviously a great deal of latitude for interpretation. We do have a bit more insight into this area as a result of our recent meeting with EG&G, IDO, and ORNL, and subsequent discussions with them. Therefore, we have attempted to elaborate a bit on both the content and the relationships among the tasks assigned to us (see below). Please consider this information as a guide to aid you in writing the actual task descriptions.

Basically, we are being asked to assist DOE in developing and testing engineering concepts in a number of technical areas "on an accelerated basis and on a reasonable scale." These are connected with the selection processes for a LLW disposal site, the development of that site (permanent migration barriers), the operation of the site (temporary covers and intrusion barriers), the closure of the site (permanent covers and intrusion barriers), actions that might need to be taken if there are problems subsequent to site closure (remedial actions), and possible alternative strategies to using SLB (intermediate-depth burial, e.g.). There are obvious interrelationships among these areas and we must have them clearly in mind. For example, the same type of strategy, materials, and engineering design might be used both as covers and intrusion barriers; site closure may merely mean an extension and completion of the temporary covers and barriers used during the operation of the site, or site closure could involve the application of new more permanent cover and barrier materials; the same migration barrier designs might be used both in the initial development of



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the site, and in the remedial action strategy for a site; etc. We need to understand these interrelationships both to integrate our program into a total coherent package, and to accumulate the bunch of relatively small tasks into larger technical groupings so we can address them with an enhanced base of support.

Before preparing work plans please consider the information in the various hand-outs closely. Workplans should contain no more than two pages of narrative (preferably one) describing each task. This description should lead off with a clear statement of the purpose of the task (why are we doing it?) and how it fits into the overall LLW program. The central part of the narrative should contain a description of what we will do (technically and experimentally)(subtasks) to accomplish the program; and, finally, the narrative should be completed with a statement concerning the expected time frame for completing the various subtasks. In addition to the narrative, please complete a milestone schedule, and a rough estimate of cost projections on another single page. We ask that everyone adhere closely to this form and format so we can minimize time in homogenizing all of the task descriptions.

In developing the Annual Work Plan, please keep in mind the information we have provided in the past in our recent FTP/A submissions (e.g., manpower, time and costs to do certain jobs). Also, the following milestones seem to have been set by the Program Manager:

- C.4 Provide Updated Handbook to Reflect Developed Technology (3/84).
- C.5 Provide Site Closure Procedures (3/83).
- D.4 Provide Report on all (Remedial) tests (6/84).

To meet the September 15, 1980 deadline, we request that you have completed drafts of the task descriptions (narratives, milestones, etc.) into the group office by Friday, September 5, 1980.

Item No. 3 Model SLB Site (DePoorter, Nyhan)

This task covers the planning, development, and construction of the LASL engineering test facility. The task narrative should include a description of the initial facility that we will construct in the next year, the types of measurements we will (can?) make, and how this facility provides the tool (laboratory) for completing many of the other tasks assigned to us. It would be advantageous (perhaps even imperative) to do our best to get some of this facility operating before winter.

Item 13 - LASL - Remedial Action Testing (DePoorter, Nyhan, Hakonson)

This program is to provide experimental testing and verification of methods that might be used to provide a fix to closed arid sites when it appears something has or is about to go wrong. Such fixes might include additional barriers or covers, the use of secondary treatments, or, perhaps, redoing some of the site. Some of the materials and methods tested in this task will parallel, and possibly be identical to, some of those from the site closure, intrusion barrier, and migration barrier tasks. This activity will likely involve the engineering test facility, but other field and laboratory experiments might be included.

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Item 28 SLB Barriers - Migration (Nyhan, DePoorter, Hakonson)

The purpose here is to test many of the moisture and radionuclide barrier materials and concepts that might be used in the development of future LLW sites in arid zones. Guidance for this task should come from the extensive work in this regard that has been done for us by UT. Emphasis should be placed on those materials (natural geologic materials, concretes, grouts, etc) that appear to have the most chance of giving long term performance. Most of this work would be done at the LASL engineering test facility.

Item 29 SLB Barriers - Intrusion (Hakonson, Nyhan DePoorter)

To design and test concepts for reducing possible penetration and intrusion by plants, animals and man into LLW disposal sites after closure. This task is very close in composition to some of our other tasks, and should be done in conjunction with the work on site closure, remedial action, and migration barriers. This work would involve field testing mainly, with use of the engineering test facility where beneficial, and possibly some laboratory studies.

Item 41 LASL Disposal Site (Rogers, Abeele, Burton, Christie, Rodgers, Wheeler)

The components of this task are now contained in our current program A415 with some input from A414. We do need, however, to emphasize the parts of these programs that have generic meaning for the national LLW program, as well as for our own site. This task should include further work on tritium transport, moisture transport under unsaturated conditions, further elaboration of the implications of the U/Th isotope work in tuff, and continued efforts with the BIOTRAN/ARM/SERATRA model.

Item 47 Arid Site Closure (Hakonson, DePoorter, Nyhan)

This task is to identify and test strategies and materials to be used for the secure closure of an active, arid SLB disposal site. This work could be almost identical to (but should be delineated from) the intrusion barrier studies. These activities should also be closely coordinated with the migration barrier and remedial action work. As much as possible, the engineering test facility should be used, but other field and lab experiments fit well into the program.

Item 50 Alternatives Assessment (Wheeler)

To complete our ongoing work on alternatives to SLB for the disposal of LLW. Some of the effort in this area will be done under subcontract to UA.

As a final item, we request that the first individual listed in conjunction with each of the above tasks take responsibility for discussions with, and input from, the other people involved, and for writing the necessary narratives, etc. It will take a fair amount of effort to complete these task plans, but they are extremely important. Our securing of actual funding for each task will depend upon us writing effective

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and informative task plans. Also our monthly reporting will be tied almost entirely to describing how well we are adhering to the plan. We believe a good effort now will simplify things for the rest of the year.

Please see either of us concerning problems, clarifications, or other areas where we might be helpful.

Thanks much for your cooperation and effort.

EMW:JGS:tj