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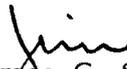
August 15, 1980

Mr. John Peel  
Idaho Operations Office  
550 2nd St.  
Idaho Falls, ID 83404

Dear John:

As a result of the conversation, about our reports, I had with you during our visit on July 23, 1980, I withdrew our June report and rewrote it. I would appreciate hearing from you if this kind of a report is more along the lines of what you want.

Sincerely,

  
James G. Steger  
LS-6 Alternate Group Leader  
Environmental Science Group

JGS:tj

Enc: Monthly Report  
Distribution List



7983

Report  
1809

MONTHLY PROGRAMS REPORT

June 1980

AL 3.5.1  
Solid Radioactive Waste Disposal Studies

AL 3.5.4  
Shallow Land Burial Technology

AL 3.10.1  
Alternative Systems Study

LOS ALAMOS SCIENTIFIC LABORATORY  
ENVIRONMENTAL SCIENCE GROUP LS-6

Work performed for

DIVISION OF WASTE MANAGEMENT  
US DEPARTMENT OF ENERGY

University of California



LOS ALAMOS SCIENTIFIC LABORATORY

## PROGRAM STATUS REPORT

Title: Solid Radioactive Waste Disposal Studies BR&C NO.: AR-05-15-15  
FO/Contractor: AL/LASL WEP NO.: AL 3.5.1  
Manager: James G. Steger Annual Budget: \$300k  
Principal Investigator: M. A. Rogers Date: July 1980  
Month Covered: June 1980

### Task Description:

The purpose of this task is to develop methods for environmental monitoring and surveillance of low-level waste disposal facilities. The approach taken will be to assess the migration of radionuclides from wastes buried during the last 35 years at LASL in order to determine waste/soil interactions and radionuclide movement in a semi-arid environment. Potentially significant pathways will be identified and modeled. A method of monitoring radionuclide movement along these pathways will be developed along with identifying the constraints that must be imposed upon disposal site operating practices and waste forms.

### Highlights and Significant Accomplishments:

Heat flow measurements in the burial ground ran into trouble because the borrowed recording instrumentation broke down. After considerable effort, the instruments seem to be working properly. The information on heat flow will be used to see if this parameter has a significant influence on tritium migration.

Plans for exhuming part of an old burial pit have been sent out for comment. Safety and OSHA requirements are making this task quite difficult and expensive. We are now reevaluating the cost vs what we will learn from this experiment and will decide in the near future if it is worth the cost.

Representatives from Williams & Heintz and Aero Services visited and preliminary arrangements were completed for printing a geologic map of LASL.

Budget Variance:

None

Milestone Variance:

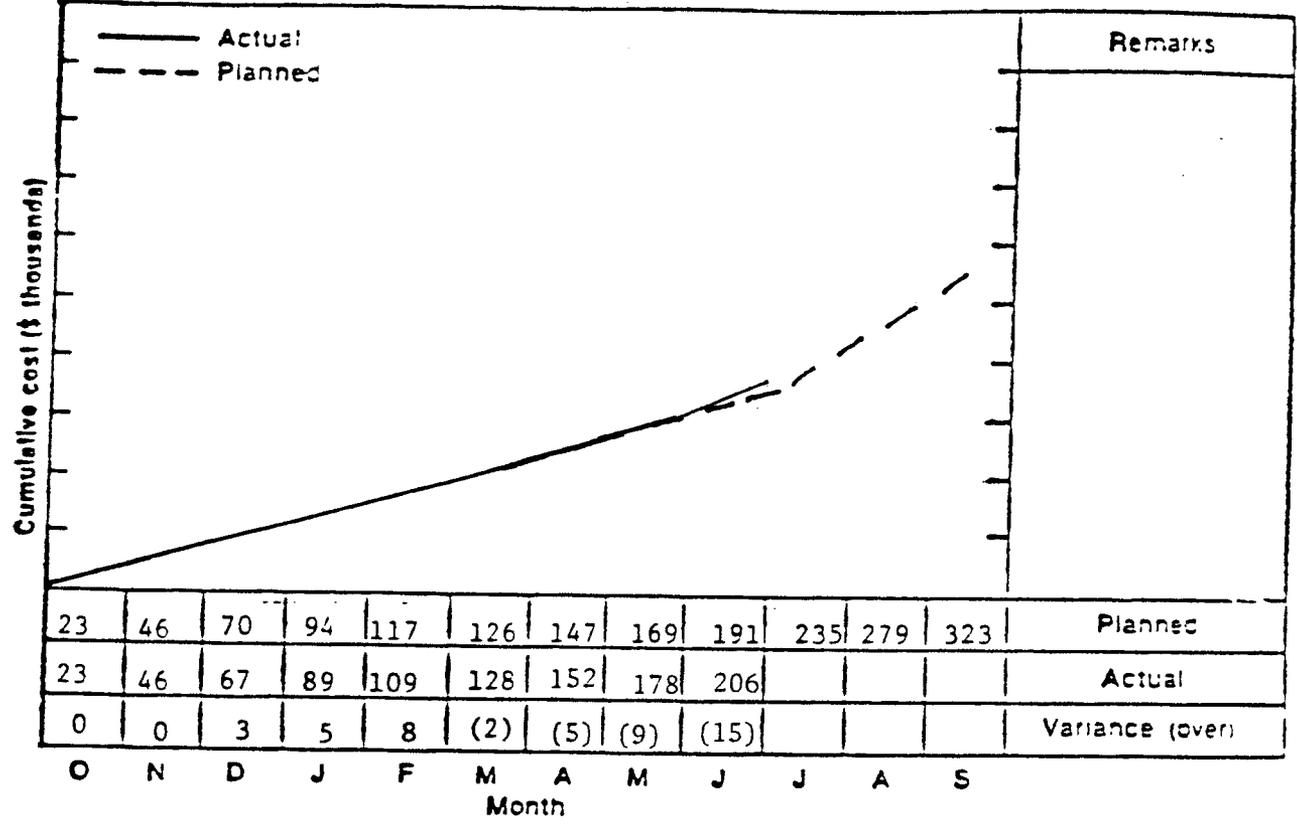
None

Problems and Issues:

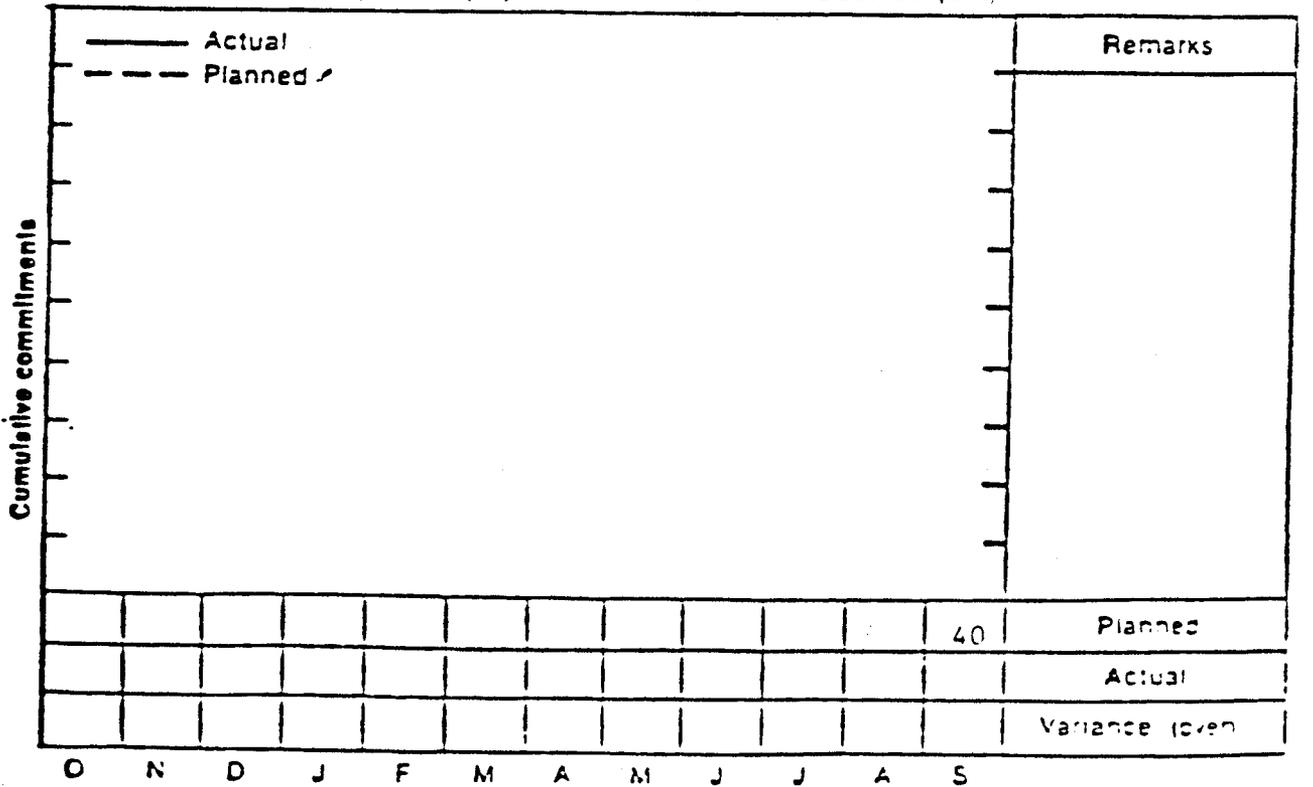
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Title Radioactive Waste Disposal Studies B&RC No. AR 05-15-15  
 FO/Contractor AL/LASL FY 80 WEP No. AL 3.5.1

Operating Dollars in Thousands (BO)



Capital Equipment Dollars in Thousands (BA)



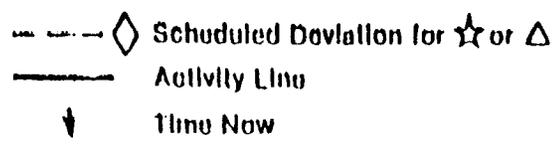
### Milestone Schedule

Level	Milestone No.	Milestone	FY. 80												FY. 81					
			O	N	D	J	F	M	A	M	J	J	A	S	1Q	2Q	3Q	4Q		
3	1.1	Summary Report on Source Term																		
3	1.2	Field Sampling Completed																		
3	2.1A	Summary Report on Hydrology																		
3	2.1B	Summary Report on Geology																		
3	2.2A	Feasibility of Coupling PNL/LASL Surface Models Determined																		
3	2.2B	PNL/LASL Surface Models for TRU Adopted to LLW																		

ER-110 Solid Radioactive Waste Disposal Studies

ERRC No. AR-15-15  
 WEP No.: AL 3.5.1

- Level 0 - Department-Controlled Milestone
- Level 1 - E1W - Controlled Milestone
- Level 2 - E1W P - Controlled Milestone
- △ Level 3 - Lead Field Office - Controlled Milestone
- ▽ Level 4 - Other Milestones and/or Intermediate Event



## PROGRAM STATUS REPORT

Title: Shallow-Land Burial Technology BR&C NO.: AR-05-15-15  
FO/Contractor: AL/LASL WEP NO.: AL 3.5.4  
Manager: James G. Steger Annual Budget: \$400k  
Principal Investigator: John W. Nyhan Date: July 1980  
Month Covered: June 1980

### Task Description:

To improve the technology related to the shallow-land burial of radioactive waste by examining radionuclide mobilization and migration mechanisms, by developing monitoring techniques around burial sites, by developing engineering methods to improve waste containment, and by the construction of an experimental engineered waste burial facility.

### Highlights/Significant Accomplishments:

A site has been chosen for the LASL Experimental Engineered Waste Burial Facility. Work effort during June has been mainly directed at items relating to acquiring the site. The site covers about 20 acres and is located north of Pajarito Road and west of TA-51 (Figure 1). This site was chosen for the following reasons:

1. It is outside of probable future laboratory development areas.
2. It is fairly level and visually acceptable.
3. It is near Area G and its meteorological tower.
4. The geology and soils are appropriate.
5. Utilities are close and the area is undisturbed.

All utilities in the proposed site have been located from ZIA Company maps except for the new water line going to TA-51. When the final plans for this water line are available its location with respect to the facility will be determined. It appears that this water line will not interfere with any of our planned experiments. All other utility lines are either close to the road or high enough overhead to not be a problem. The necessary

paper work on environmental, archeological, and health and safety aspects of the experimental facility has been started with Groups H-8 and H-1.

A large effort was also spent in June in preparing a revised FTPA for this program and in preparing purchase requests for subcontractor research for the current and upcoming fiscal years.

A reoccurring problem of liquid nitrogen leaking out of the hyperpure GeLi detector made it necessary for this detector to be sent back to PGT for repairs for the last two weeks in June. However, while the ATASS system was not being used, several changes have been made. Several modifications to the automatic sample changer were made. The slip coupling between the drive motor and the sample wheel was replaced with a direct coupling with clutch. A ball-and-spring stop was installed which prevents the wheel from rotating backwards when severely unbalanced. The solenoid which operated the indexing pin was replaced with a smaller, quieter one which reduces the vibration imparted to the detectors. In addition, the assay software and accompanying utility software have been revised. Improvements in analysis, error handling and tabular output have been incorporated in the new software. Tests and debugging of the new and (presumably) final versions should be completed within the next month. At that time, the soil assay system itself will be considered complete and finished. The operations manual, based upon the final form of the software and the modified version of the sample changer, is being composed.

Budget Variance Analysis:

None

Milestone Variance Analysis:

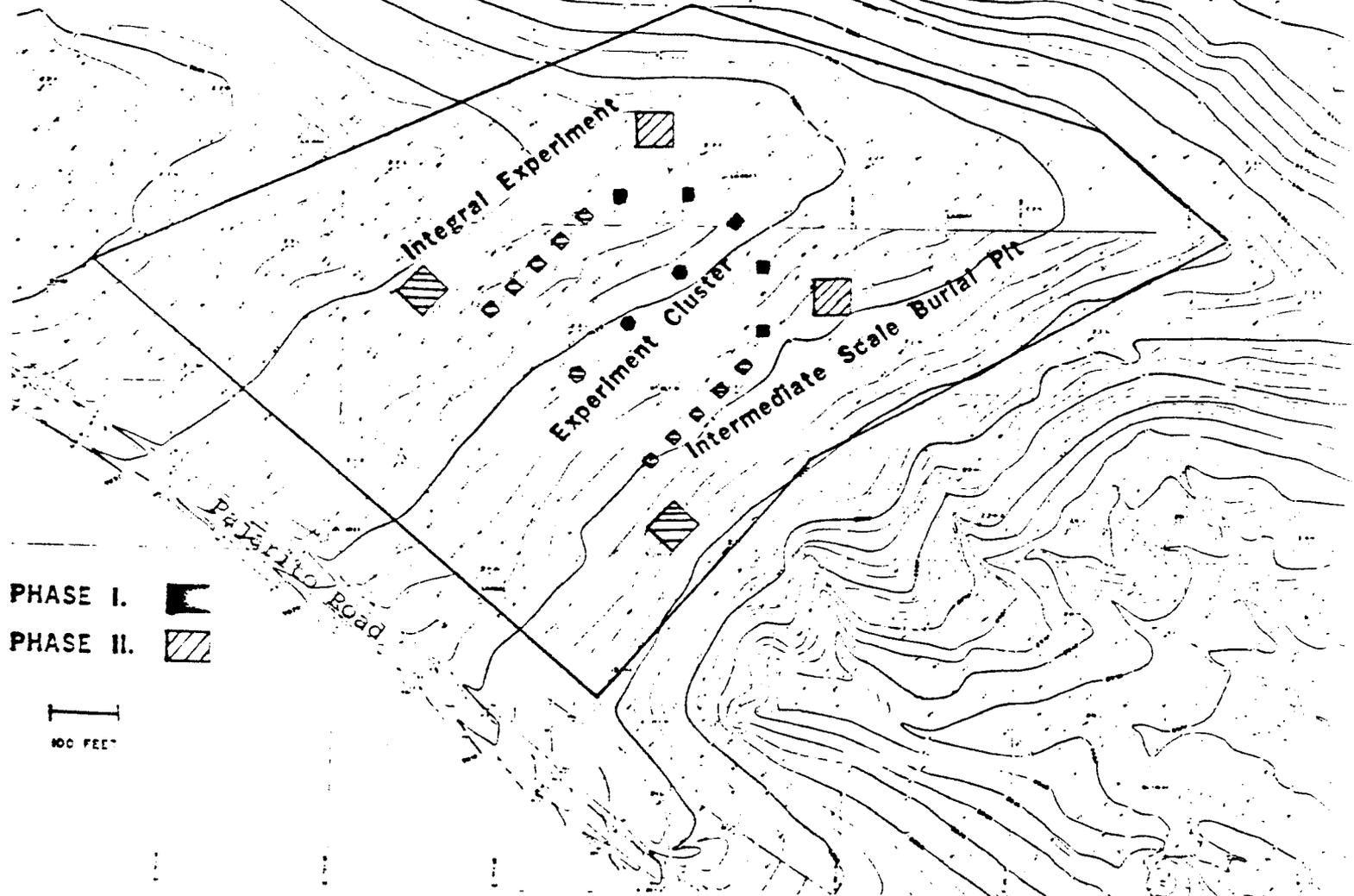
None

Problems and Issues:

None

FIGURE 1.

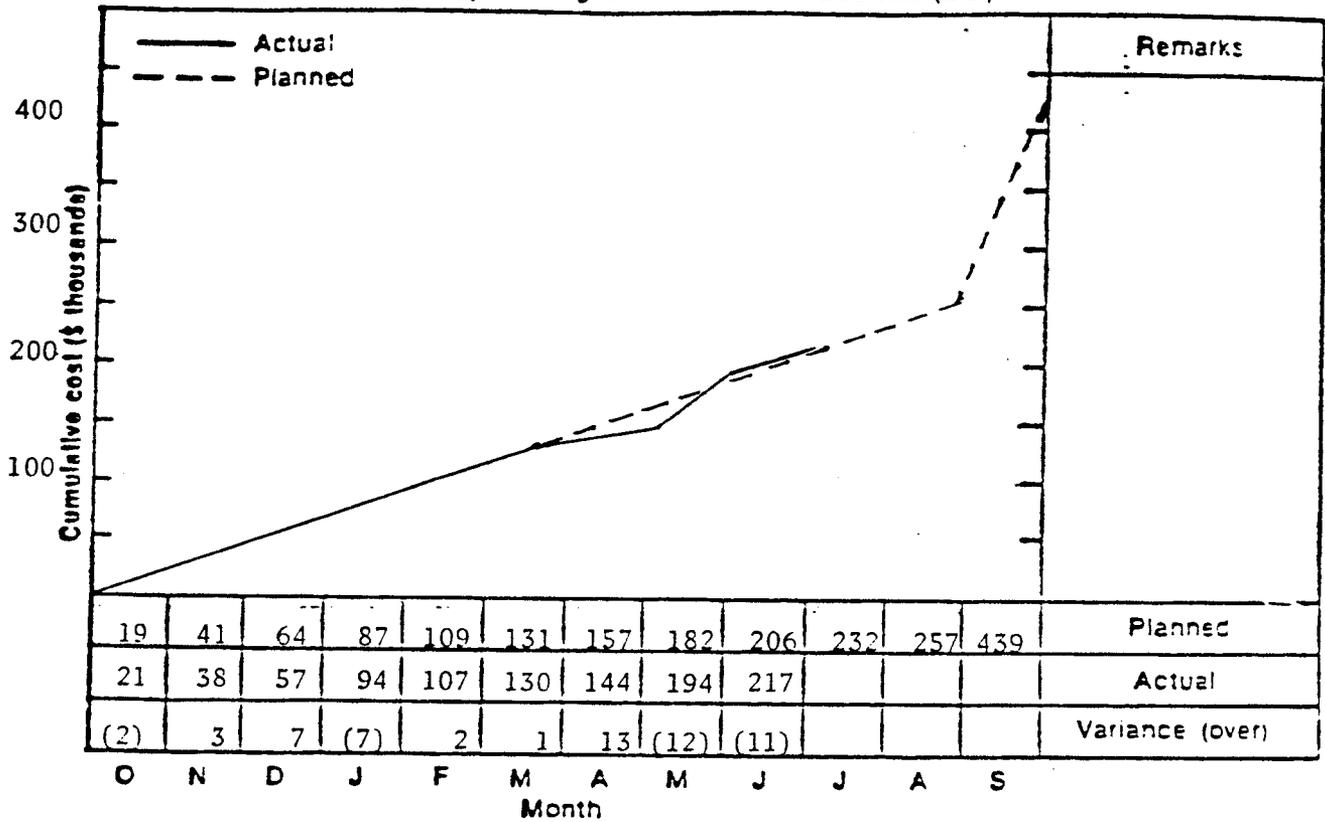
LASL EXPERIMENTAL ENGINEERED WASTE BURIAL FACILITY  
Proposed Site Plan



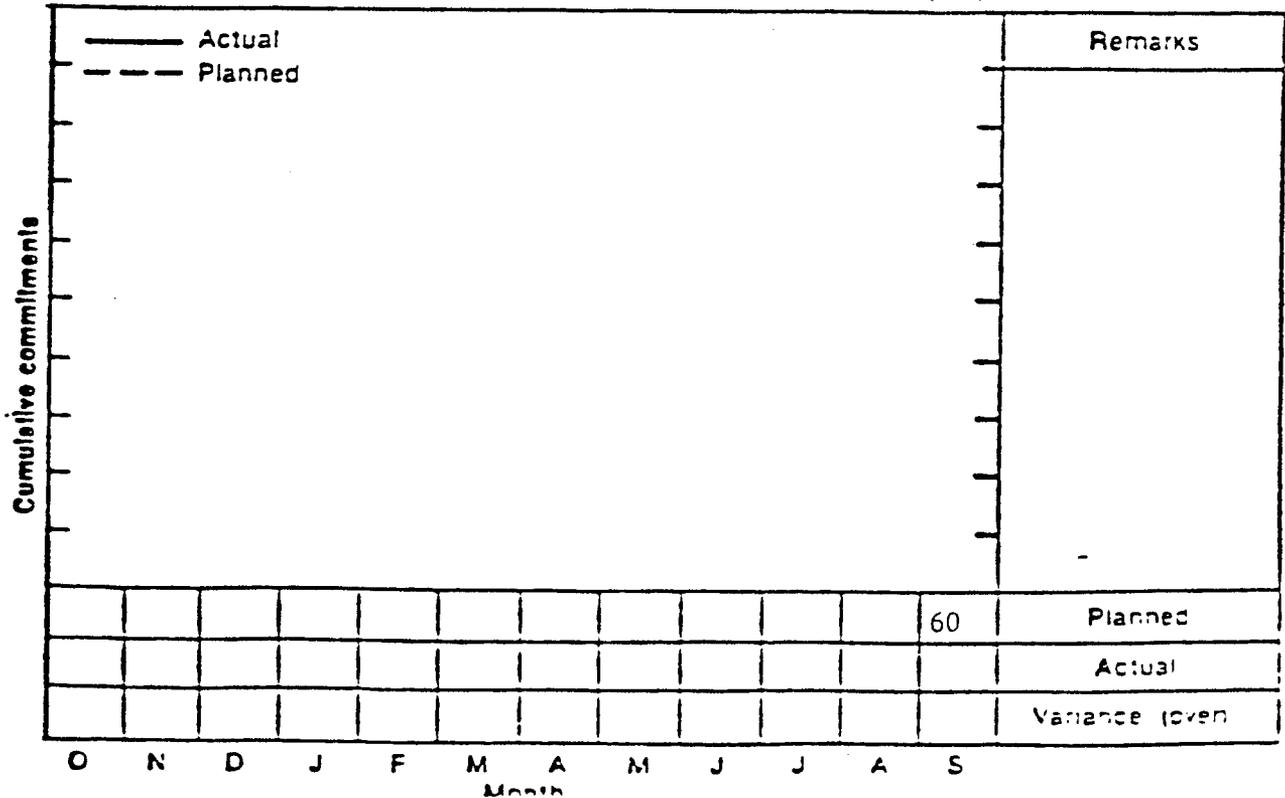
PHASE I.   
PHASE II. 

  
100 FEET

**Operating Dollars in Thousands (BO)**



**Capital Equipment Dollars in Thousands (BA)**





PROGRAM STATUS REPORT

Title: Alternative Systems Study BR&C NO.: AR-05-15-15  
FO/Contractor: AL/LASL WEP NO.: AL 3.10.1  
Manager: James G. Steger Annual Budget: \$300k  
Principal Investigator: Merlin Wheeler Date: July 1980  
Month Covered: June 1980

Task Description:

The overall goals of the proposed work are to gather information pertinent to analyzing Alternative Disposal Methods and to generate a management plan for a program to evaluate selected alternatives to shallow-land burial for the disposal of low-level radioactive waste. The work will be structured so as to take maximum advantage of all applicable ongoing and proposed work within DOE and other organizations. In particular, close cooperation will be sought between this work and the High-Level Waste disposal work coordinated by ONWI.

Highlights/Significant Accomplishments:

The body of a topical report on mined cavities for waste disposal was received for review from the University of Arizona. This report describes the operational aspects and technical requirements for disposal in several different rock types.

Comments on a draft University of Texas report on intermediate depth burial were provided to the University of Texas.

Chapters 2, 3, 4, and part of 5 (of a total of 5) have been completed on a report that provides an overview of alternatives to shallow-land burial. A draft of this report will be available for review by August 1, 1980. An analysis of the advantages and disadvantages of intermediate depth burial suggests that the proposed 10 m cover depths is

difficult to justify in most cases. The overview report will address the issues of relative costs and advantages provided by various cover depths.

Budget Variance:

None

Milestone Variance:

None

Problems and Issues:

None

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