

University of California



LOS ALAMOS SCIENTIFIC LABORATORY

Post Office Box 1663 Los Alamos, New Mexico 87545

In reply refer to LS6-80-553
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November 3, 1980

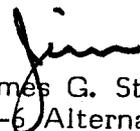
1813 Report

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

Dear John:

Enclosed are the September 1980 Monthly Reports on those projects under your low-level waste program.

Sincerely,


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

JGS:tj

Enc: Monthly Report
Distribution List



7985

MONTHLY PROGRAMS REPORT

September 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: October 1980
Month Covered: September 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:

The site characterization work fell behind schedule due to a variety of reasons. The hydrology report was delayed because staff members were so busy with other LLW projects (3.10.1 and proposal for 3.10.2). We now estimate the hydrological report will be out (in draft) by the end of the year.

We also had some problems with the geologic report. The major problem is that the report must be based upon a good geologic map, and providing one of this area turned out to be much more difficult than expected. The high relief (1000 feet) from canyon bottom to mesa top along with the many canyons in the area resulted in a

tremendous amount of data that must be put on a map. This is compounded by the fact that because of the terrain, the aerial photos, which we are using, contain severe distortions, which must be corrected manually. To speed things up and to get the best talent on the job, we contracted with the best geologic map making company we could find. Initially, they were very skeptical when we told them about the problems we were having. It did not take them too long to agree with us. The first set of maps from them were not good enough and we are spending a good bit of time making corrections. Other problems were the illness of the P.I., and the behind schedule delivery of the base topographic maps to us (which are essential). We now estimate a completion date of mid-FY1981.

Budget Variance Analysis:

None

Milestone Variance Analysis:

Hydrological report rescheduled to 31 Dec 80.

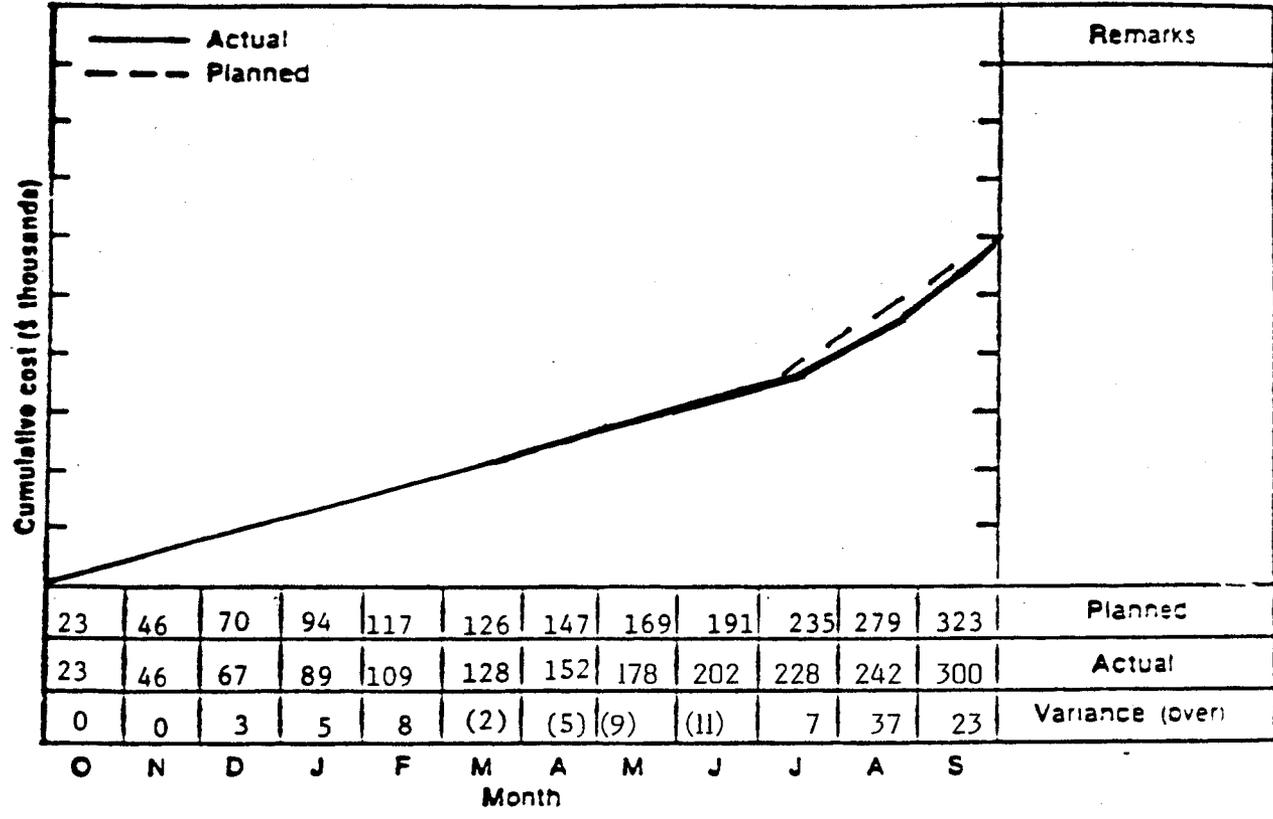
Geological report rescheduled to 31 March 81.

Problems and Issues:

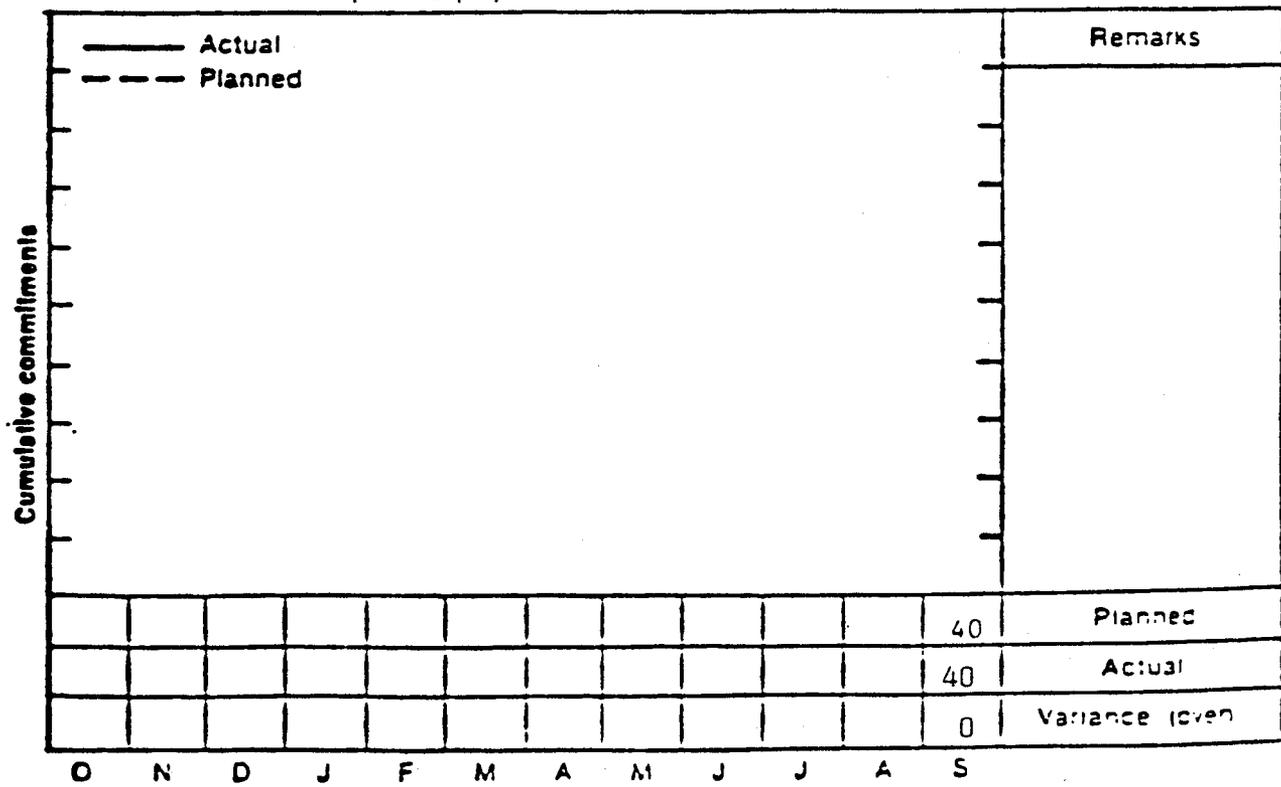
None

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

EP 110 Solid Radioactive Waste Disposal
 Studies
 BESC No. AR 5-15-15
 WEP No. AL 3.5.1

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																▲

- 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

- ◇ Scheduled Deviation for ☆ or △
- Activity Line
- ↓ Time Now

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: October 1980
Month Covered: September 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:

The University of Texas at Austin completed their evaluation of manmade shallow-land burial barriers and their literature survey on the influence of waste materials and environmental factors on engineered barriers. An annual report was prepared, as well as two topical reports, all of which satisfy milestones 1 and 3 listed on the Milestone Schedule.

The migration mechanism work activity area performed by New Mexico State University personnel was completed during September and an annual report written to keep us informed as to the progress on milestone 9 of the Milestone Schedule. The ATASS-assisted research on radionuclide migration in tuff at Los Alamos (milestone 6) was continued during September and is near completion; results indicate that radionuclides and water have moved through about 100 feet of Bandelier Tuff in field situations where accelerated leaching tests were initiated many years ago.

During September we also visited personnel working on the LLWM program at Battelle Pacific Northwest Laboratories and at U.S.G.S. and have gathered information on existing monitoring systems (milestone 12) for detecting levels of gamma-emitting radionuclides in the field test facility. We are currently involved in setting up joint studies in an effort to provide our field test facility with state-of-the-art field monitoring capabilities. These down-hole techniques, involving nondestructive tuff sampling programs, will be complemented by destructive sampling programs backed up by the analytical capabilities provided by ATASS (see new publication attached in which the ATASS system is described).

Progress relevant to the LASL Experimental Engineered Waste Burial Facility has been made in several areas. The Environmental Review for the project in the form of a Health, Safety, and Environmental Remark for this facility has been completed and approved by the Laboratory Environmental Review Committee. The site surveying has been completed and the access road located. The initial experimental planning has been completed and placed in the form of five work tasks for the different parts of the project. In addition, a revised preliminary design for a Flow Through Treatment System experiment for the facility has been received from JRB Associates, Inc., and was approved so that final design could be started.

Budget Variance Analysis:

None

Milestone Variance Analysis:

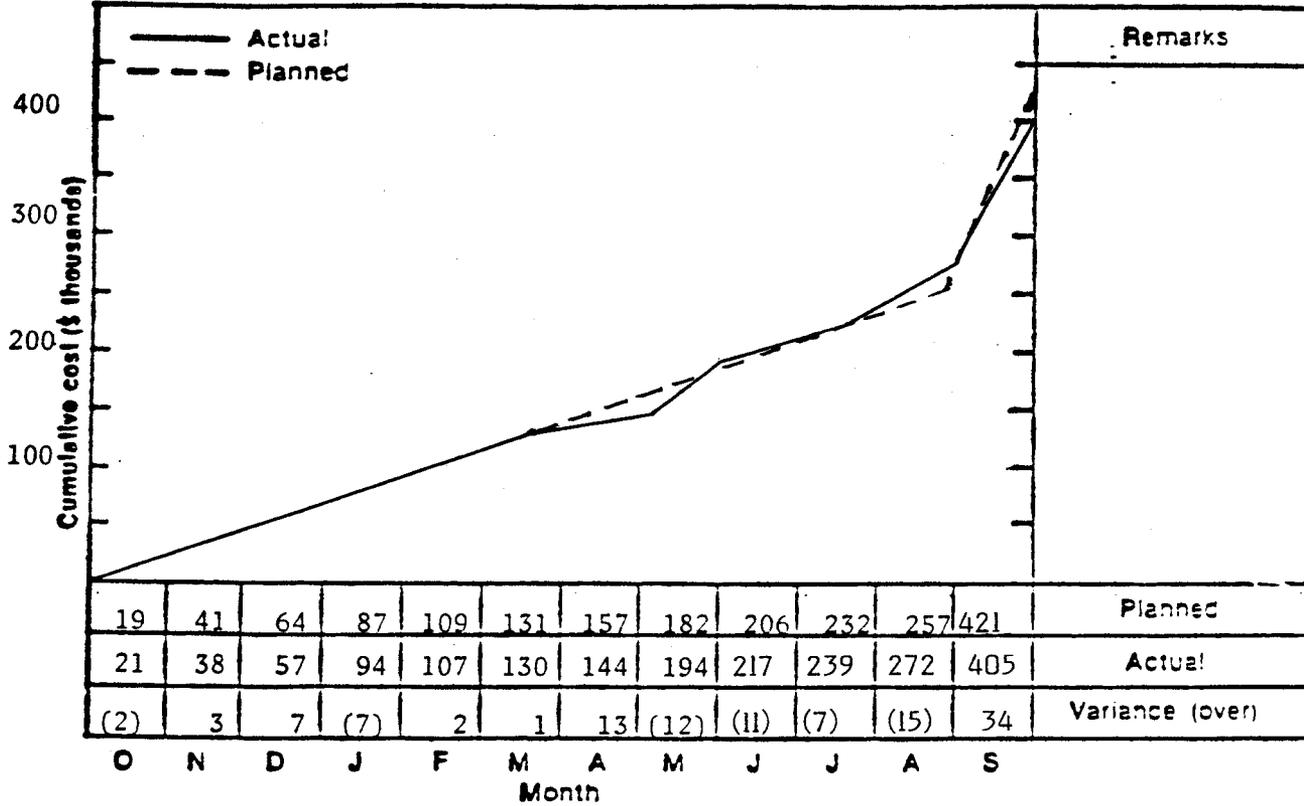
None

Problems and Issues:

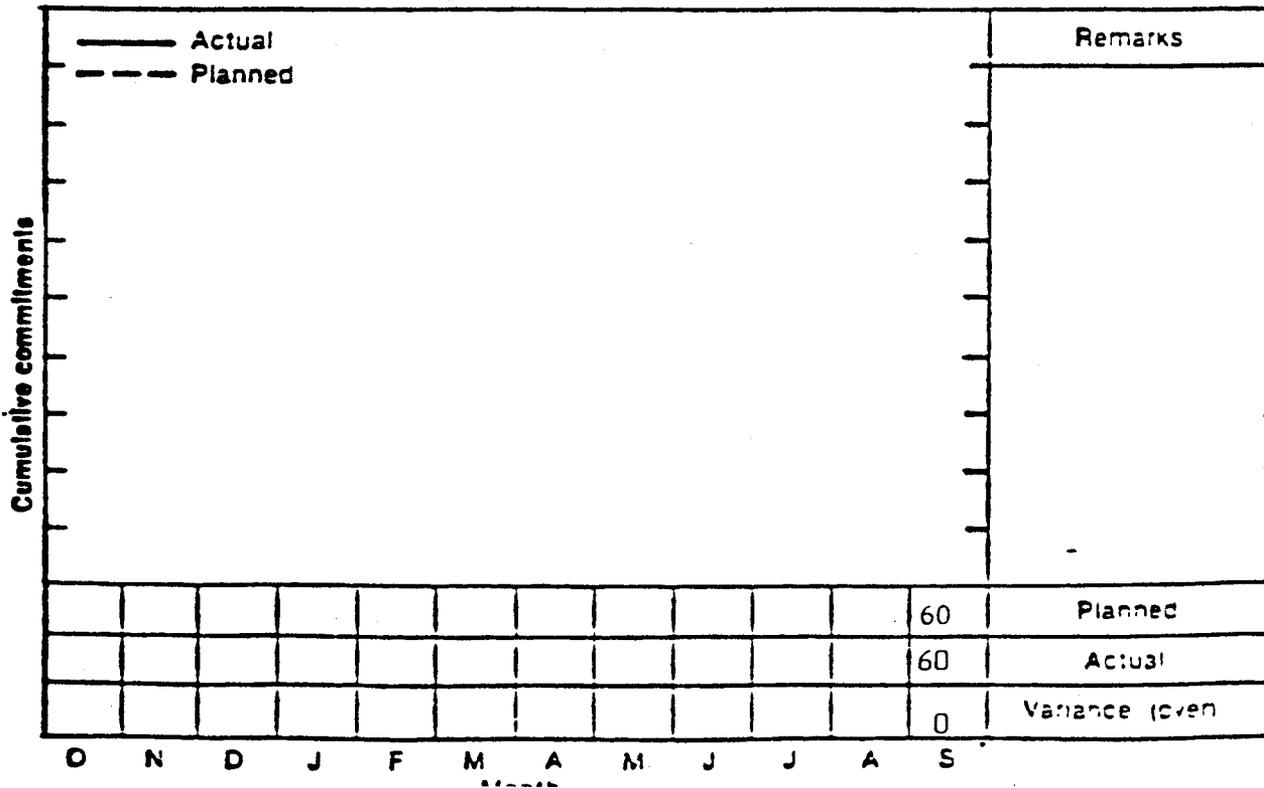
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Title Shallow Land Burial Technology B&RC No. AR 05-15-15-0
 FO/Contractor: AL/LASL FY 80 WEP No. AL 3.5.4

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: October 1980
Month Covered: September 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:

Preliminary documents from subcontractors were reviewed, and recommendations for modifications provided to the subcontractors. By the end of the fiscal year, final contractor reports had been received, as listed below

University of Arizona

- I. Alternatives to Shallow Land Burial for the Disposal of Low Level Wastes,
Mined Cavities
 - Vol. I-Introduction and Executive Summary
 - Vol. II-Site Selection
 - Vol. III-Repository Factors
 - Vol. IV-System Impacts and Recommendations

2. The Utilization of Information Developed by the Office of Nuclear Waste Isolation for Development of Alternatives to Shallow Land Burial for Disposal of Low Level Radioactive Waste

University of Texas

1. Report on Deeper Burial of Low Level Radioactive Waste

JRB Associates, Inc.

1. Assessment of Medium Depth and Deep Disposal of Hazardous Wastes as Related to Low Level Radioactive Waste Activities

Copies of these reports are being forwarded to the Idaho and Oak Ridge Program Offices. Revised versions of each of these reports are now in preparation. These revisions will include some clarification, an executive summary as appropriate, and relationship of the work to the alternatives program. These revisions will be issued under a unified LASL format.

Budget Variance Analysis:

None

Milestone Variance Analysis:

None

Problems and Issues:

None

Title Alternative Systems Study

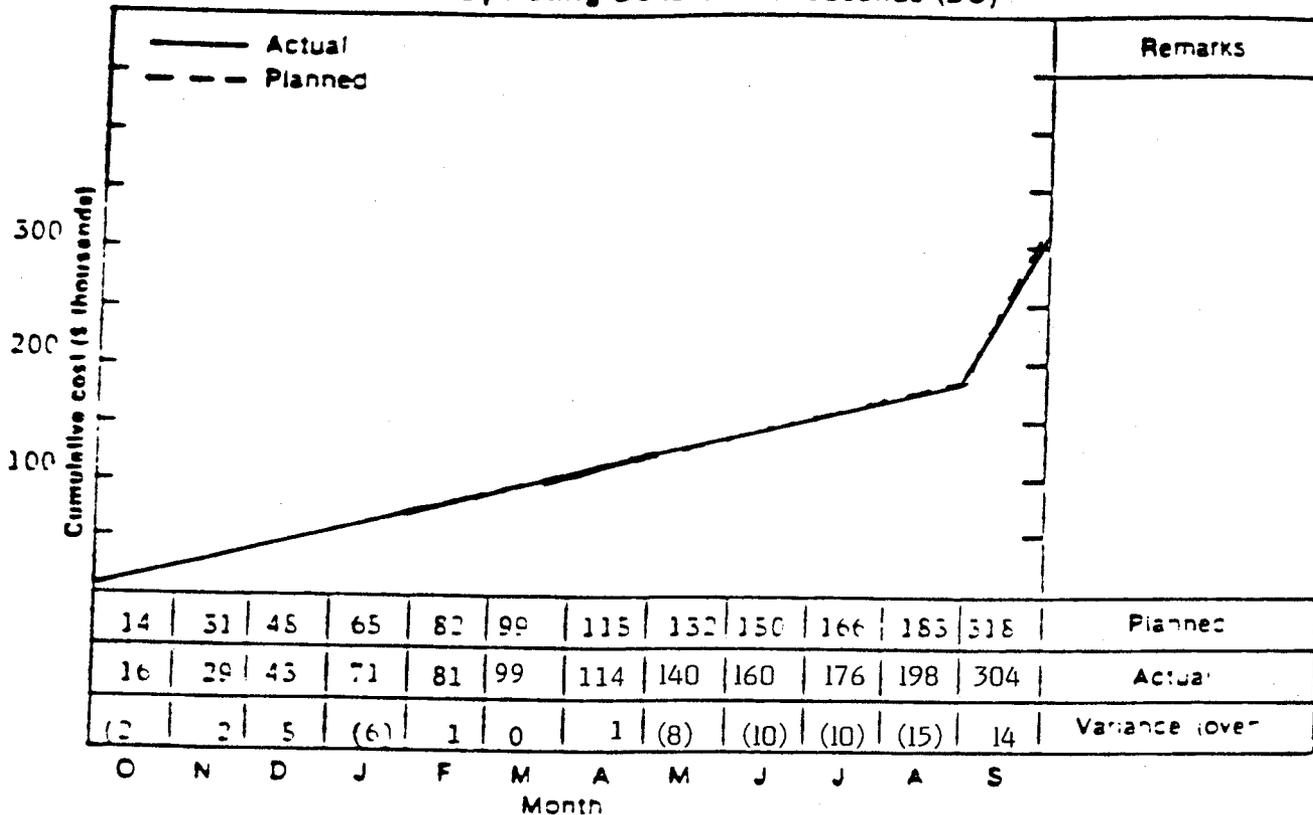
B&RC No. AR 05-15-15

FO/Contractor AL/LASL

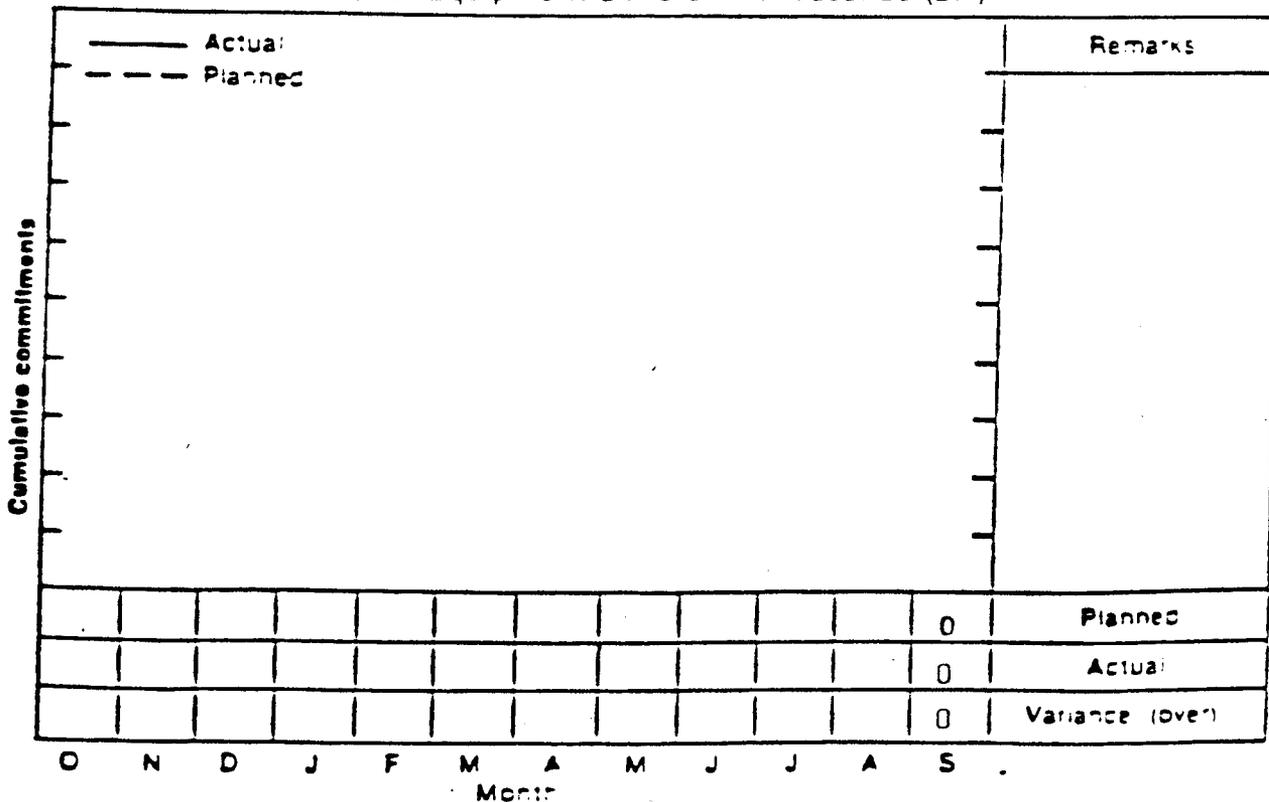
FY 80

WEP No. AL 3.10.1

Operating Dollars in Thousands (BO)



Capital Equipment Dollars in Thousands (BA)



Milestone Schedule

File: Alternative Systems SI

ERIC No: AR-15-15
 WEP No: AL 3.10.1

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.	Input waste characterized							△										↓					
3	2.	Alternative Options Catalogued																						
3	3.	Report on assessment of technical issues																						
3	4.	Issue Development Plan																						△

- ⌘ 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

- ◇— Scheduled Deviation for ☆ or △
- Activity Line
- ↓ Time Now

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