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General

PROGRAM AND BUDGET PROPOSAL
OPERATING COSTS AND EQUIPMENT

129c No. LS-15-19A

Division of Waste Management, Production & Reprocessing

DATE
March 1977

for FY79

1. BUDGET ACTIVITY NO. KZ-03-05-00-0		3. PROJECT TITLE LASL Radioactive Solid Waste Disposal Studies		
2. SITE KZ-03-06-02		5. PERSON IN CHARGE L. J. Johnson		
4. FREQUENCY OF PROGRESS REPORTING <input type="checkbox"/> 1. Monthly <input type="checkbox"/> 3. Semi Annual <input type="checkbox"/> 2. Quarterly <input checked="" type="checkbox"/> 4. Annual		PRINCIPAL INVESTIGATOR(S) M. L. Wheeler M. A. Rogers, L. K. Trocki		
6. CONTRACTOR Los Alamos Scientific Lab		10. CONTRACT NO. W-7405-ENG-36	15. LEAD BRANCH WO	
7. WORKING LOCATION Los Alamos, NM		12. WASTE APPLICATION Erda <input checked="" type="checkbox"/> Industry <input type="checkbox"/>	18. PROJECT TERM 1. Open <input checked="" type="checkbox"/> 2. Limited <input type="checkbox"/> From _____ (date) To _____ (date) Funding Termination _____ (date) Reference:	
9. TYPE 1. Industry <input type="checkbox"/> 2. Erda Lab <input checked="" type="checkbox"/> 3. Educational <input type="checkbox"/> 4. Government <input type="checkbox"/> 5. Other Non-Profit <input type="checkbox"/>		13. TYPE OF WASTE 1. High-Level <input type="checkbox"/> 2. Solid-Transuranium <input checked="" type="checkbox"/> 4. Tritium <input type="checkbox"/> 5. Gaseous or Airborne <input type="checkbox"/> 6. Other <input type="checkbox"/>		
21. MAN YEARS		FY 19 PY 77	FY 19 CY 78	FY 19 BY 79
Scientific		1.5	1.5	2.5
Other Direct		3.0	3.0	3.0
Total Direct		4.5	4.5	5.5
22. COSTS				
a) Direct Salaries		86	94	136
b) Materials & Services		30	31	25
c) Subcontracts		35	30	60
Total Direct Costs		151	155	221
d) Indirect Costs		49	55	79
e) Fee				
Total Costs (In Thousands)		200	210	300
f) Obligational Authority				
24. EQUIPMENT				
a) Budget Activity No.				
b) Equipment Obligations (In Thousands)		15	30	20



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principal waste disposal areas was initiated, and the results for some disposal areas used to design more detailed studies. Progress was made on conversion of waste inventory records to computer format, with initial emphasis on completed pits at the present active disposal area (Area G, TA-54). Data was collected from a soil moisture monitoring program at Area G, and used to design additional measurement points. A survey of possible monitoring systems was initiated, examining both active and passive systems for field and laboratory measurements. Radiochemical analysis was completed on a portion of the core samples collected from beneath one of the older disposal pits at Area G. A preliminary geologic map was prepared, illustrating the lateral extent of selected rock units which are used for waste disposal at the LASL.

30. Expected Results in FY1978

Preliminary reconnaissance of radionuclide distributions in plants, soils and animals at major LASL disposal areas will be continued, and more detailed investigations begun in selected areas. Detailed geologic mapping of these major disposal areas will be finished, together with measurements of the significant hydrologic transport parameters at these sites. Studies will be underway to quantify the radionuclide movement along potential pathways.

Data collection from the moisture monitoring net will continue. Experiments will be conducted, using the meteorological tower at Area G, to define the net flux of moisture into the burial site. Further work will be done on defining the regional groundwater migration pathway, using groundwater dating techniques. Several possible systems for monitoring the radionuclide migration will be selected, and testing initiated.

31. Expected Results in FY1979

An environmental report will be prepared, describing the major geologic and hydrologic features at Area G. This will include the stratigraphy and structure, petrographic and geochemical data, and description of the principal potential migration pathways. The results of investigations, of radionuclide distributions in plants, animals and surface soils will be used to design a subsurface sampling program at the major LASL disposal areas. Together, the surface and subsurface investigations present a complete picture of the distribution of radionuclides in the vicinity of the waste disposal pits or shafts. When this information is coupled with the migration pathways analysis, the likely rates and direction of any further movement can be established. The measurement of moisture distributions in earth material over and adjacent

to waste disposals will be evaluated, and modifications made, as necessary, in the location and frequency of those measurements. The overall goal of the program is to predict, with reasonable accuracy, the quantities of precipitated moisture moving through the waste material.

Measurements at Area G will continue to be taken and recorded of wind-speed, temperature, humidity, precipitation, surface temperature, and heat transfer in the soil. Routine surveillance of wind-direction and velocity will assist in tracking any accidental atmospheric release during burial site operations. Intensive research studies will be performed to model atmospheric dispersion processes, soil moisture flux, and evaporation of precipitation. These studies add to the understanding of possible processes of radionuclide migration.

The field testing of migration detection systems, begun in FY1978, will continue. A program goal is to select an initial system for installation or implementation, beginning in FY1979. The fruition of this is dependent on research conducted during the latter part of FY1977 and during FY1978.

32. Expected Results Beyond FY1979

The data from the expanded LASL burial facilities monitoring system will be collected and reviewed, permitting significantly more reliable predictions of the movement of radionuclides away from burial locations. The techniques used can be made available, as applicable, to permit analogous predictions at other ERDA contractor or commercial land burial sites.

33. Description and Justification of Major Procurement Items

Funds will be required for the production of the geologic maps of disposal sites. Test drilling, geophysical, geochemical, and petrographic studies will also be accomplished on a contract basis. A total cost of \$60K is anticipated for these projects.

34. Description and Justification of Major Equipment Items

The developing and testing of radionuclide monitoring systems in FY1978 will lead to preliminary field instrumentation/sampling system implementation in FY1979. These systems will require various electronic instrumentation for detection and analysis of radionuclides. Specifically the anticipated equipment includes:

- | | |
|--|--------|
| 1) Pulse Height Analyzer | \$ 14K |
| 2) Associated Electronics for Analyzer | \$ 6K |

Schedule 45 - Capital Equipment Narrative

LASL Radioactive Solid Waste Disposal Studies
LS-15-1-8-A

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- 2) Associated Electronics for Analyzer \$ 6K

