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OFFICE MEMORANDUM

TO : Dean Meyer, Group Leader, H-1

DATE: 1/11/68

FROM : John Enders, H-1

SUBJECT: 1967 ANNUAL REPORT ON DISPOSAL OF SOLID RADIOACTIVE WASTE

SYMBOL :

51

1772 Report

Solid radioactive waste disposal activities and data for the fourth quarter of 1967 are incorporated in this report. Data for the report was furnished by The Zia Co., Eng-4, SP-3, Zia Tech Janitorial Dept., and LA Notebooks # 12442, 6905 and 14995.

As some of the information presented is based on estimates, this fact should be kept in mind if any conclusions are to be drawn from the report.

Beta-Gamma Waste Disposal : Areas C and G

At the end of the year the last 36" diameter shaft in Area C was nearly filled. Also, in Area C, two 12" diameter, cement lined shafts are unused. One 36" diameter shaft is currently being used to store some ²³⁵contaminated pipe which had been removed from 10 Site.

In Area G, two 24" diameter shafts have been filled and capped during the year. Two other shafts were nearly full as of the end of the year.

During the third quarter, equipment and material was obtained which enabled H-1 to cap disposal shafts with Ready-Mix cement. A total of 7 shafts were capped in this manner at an estimated cost of \$285.00.

Low Level Waste Disposal: Area G

Pit #4 was filled and covered to ground level during the third quarter. Pit #5 began receiving material early in 1967 and is being filled at a slightly faster rate due to a large amount of building debris from the demolition of TA-45 and Bld. 35, D. P. West.



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One out-of-town shipment of classified, contaminated material was received during the fourth quarter which was unloaded into Pit #5 and buried. The operation was completed without incident, but one trailer had to be sent to the H-1 Decontamination facility at TA-50 for decontamination. It may be observed that the access road to this facility leaves a bit to be desired in that the tractor-trailer rig had to back into the area. A different access route into the H-1 Decontamination Facility would be very desirable.

A paper, entitled "Solid Radioactive Waste Disposal at Los Alamos", was presented at a Symposium on Radioactive Waste Disposal in the Ground, that was held in Vienna, Austria, May 29-June 2, 1967.

Explanation of Data:

The derivation of the data presented in this report is as follows:

1. Small plastic bags: These bags cost 8¢ and hold about 0.037 yd.³
2. Large plastic bags: Now priced at 25¢ and hold about 0.46 yd.³
3. Cardboard boxes: The price remains at 19¢, they will hold about 0.087 yd.³
4. 55 gal. steel drums: These cost \$8.60 and hold about 0.3 yd.³
5. 2" masking tape: The cost per roll is 72¢ and the quantity used is based on an estimate.
6. Zia Janitor charge: Based on a time study of the job and is estimated that one man-hour per day is used.

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- 7. H-1 vehicles: Charges are based on information furnished by The Zia Company.
- 8. H-1 radio: Information furnished by Eng-5.
- 9. Protective Clothing: Based on an estimate.
- 10. Covering trash: Cost figures furnished either by Eng-4 or Zia.
- 11. Rd. & Ruin excav.: Based on a cost write-off over a 20 year period. Balance as of 12/31/67= \$5,453).
- 12. Area G Fencing: Cost write-off at the rate of 1/10th/year. The balance as of 12/31/67=\$0.00.
- 13. Excav. pits #4 & 5: Excavation costs written off at 1/8th/quarter. Write-off complete on pit #4 and balance for pit #5 as of 12/31/67=\$5,691.
- 14. Health Physics Surveyor: Based on an estimated 6 man-hours per day and includes wages and overhead.
- 15. Zia Riggers: Based on an estimate using \$40/hr/man.
- 16. Zia Laborers: Based on an estimate using \$4/hr/man.
- 17. Transport Dumpsters: Information furnished by The Zia Company based on a cost per mile and total mileage.
- 18. Dig Disposal Shafts: Based on an estimated \$150 per shaft for 23 shafts.

Packaging Materials: (Quantities used)

	<u>1st. Qtr.</u>	<u>2nd. Qtr.</u>	<u>3rd. Qtr.</u>	<u>4th. Qtr.</u>	<u>1967 Total</u>
1. Sm. pl. bags	1,936	1,914	3,003	2,383	9,236
2. Lg. pl. bags	913	825	1,126	845	3,709

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	(Quantities used)---continued				1967 Total
	1st.Qtr.	2nd.Qtr.	3rd.Qtr.	4th.Qtr.	
<u>Packaging Materials:</u>					
3. Cardboard boxes	8,039	7,516	6,466	6,752	29,773
4. Drums	601	630	588	571	2,390
5. Rolls 2" tape	500	500	500	500	2,000

Waste Volume: (yd.³)

1. Sm. pl. bags	72	71	111	88	342
2. Lg. pl. bags	420	380	518	389	1,707
3. Boxes	700	654	563	587	2,504
4. Drums	180	189	176	171	716
5. Misc. Scrap	<u>1,000</u>	<u>557</u>	<u>481</u>	<u>1,644</u>	<u>3,682</u>
Totals:	2,372	1,851	1,849	2,879	8,951

Disposal Costs:

1. Sm. pl. bags	\$ 155	\$ 153	\$ 240	\$ 191	\$ 739
2. Lg. pl. bags	228	206	281	211	926
3. Boxes	1,527	1,428	1,228	1,283	5,466
4. Drums	5,169	5,418	5,057	4,911	20,555
5. Masking tape	360	360	360	360	1,440
6. Zia Janitor	7,850	7,850	7,850	7,850	31,400
7. H-1 Vehicles	240	240	240	240	960
8. H-1 Radios	166	166	166	166	664
9. Protective clothing	50	50	50	50	200
10. Fencing	151	151	151	151	604

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Disposal Costs: (continued)

	<u>1st.Qtr.</u>	<u>2nd.Qtr.</u>	<u>3rd.Qtr.</u>	<u>4th.Qtr.</u>	<u>1967 Total</u>
11. Rd. & Ruin Excav. \$	135	\$ 135	\$ 135	\$ 135	\$ 540
12. Excav. Pit #4	1,875	1,875	1,000		4,750
13. Excav. Pit #5	1,423	1,423	1,423	1,423	5,692
14. H P Surveyor	2,625	2,625	2,625	2,625	10,500
15. Zia Laborers	864	1,312	768	2,240	5,184
16. Zia Riggers	1,280	1,280	1,440	2,080	6,080
17. Cover trash		566	1,316		1,882
18. Disposal Shafts	3,450				3,450
19. Seal Disp. Shafts				285	285
20. Transport D. D.	<u>3,964</u>	<u>3,923</u>	<u>2,306</u>	<u>3,899</u>	<u>14,092</u>
Totals:	\$31,512	\$29,111	\$26,636	\$28,100	\$115,409
<u>Cost/Yd.³/Quarter:</u>	\$13	\$16	\$14	\$10	(1967=\$13/Yd. ³)

Comparison of volume and costs by year:

	<u>Volume(Yd.³)</u>	<u>Total cost</u>	<u>Cost/Yd.³</u>
1956	2,537	\$ 71,745	\$28
1957	3,164	75,548	24
1958	3,459	61,800	18
1959	4,838	61,801	13
1960	5,777	74,794	13
1961	7,170	94,110	13
1962	7,344	102,242	14
1963	7,872	117,974	15
1964	10,132	110,926	11
1965	6,483	99,028	15
1966	8,305	106,621	13
1967	8,951	115,409	13

cc: File