

OFFICE MEMORANDUM

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TO : Dean Meyer, Group Leader, H-1

DATE: January 12, 1971

FROM : John Enders, Leader, CMR BLDG. Monitoring Section, H-1

SUBJECT: 1970 ANNUAL REPORT ON DISPOSAL OF SOLID RADIOACTIVE WASTE

SYMBOL : H-1-CMR

1337 Report  
This report includes disposal data for the 4th quarter of 1970. Data for this report was furnished by The Zia Co. Refuse Dept., ENG-4, ENG-5, SP Dept., and LA Notebooks #15953 and #12442. As some of the data presented is based on estimates, this should be kept in mind if any conclusions are to be drawn from the report.

Beta-Gamma Disposal:

Routine disposal of this type of material was carried out during the year. A work order request to have ten more three foot diameter shafts drilled is still pending.

Two six foot diameter shafts were placed in service this year. Shaft #34 is being used for disposal of contaminated oil and shaft #39 for tritium contaminated items. #39 was drilled originally to receive plutonium and sodium contaminated reactor hardware from Ten Site. This material was covered with sand and a cement plug was then poured on top.

Four 3 ft. diameter shafts were drilled to "store" LAPRE tanks from Ten Site and a filter from UHTREX. The filter has not yet been delivered.

Sealing material contaminated with tritium in asphalt by H-7 is now routine and shaft #39 is being used to receive these items.

Two metal safety lids were installed on the two 6 ft. diameter shafts in December. An S.O.P. has been prepared outlining safety requirements for use of these two shafts.

LA Notebooks and other data were reviewed by Wilbur Workman, H-1, in December, in order to prepare a report for the AEC concerning quantities of accountable material that has been buried at Los Alamos since 1945.

Low Level Waste:

Four out-of-town deliveries of classified, contaminated waste were received, off loaded and buried in Pit #6, Area G.



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Low Level Waste Cont.:

A report was prepared that outlined space requirements in event segregation of waste material becomes necessary.

An S.O.P. was prepared, and approved, for Zia Truck Drivers to follow in the event of a fire in Dempster Dumpster containers. The S.O.P. requires H-1 to escort loads containing drums of D-38 from the Shops Dept. to Area G. In order to be able to communicate directly with Zia and the AEC Fire Dept., two extra radios were installed in the H-1 vehicle used for escort duty.

Two recovery operations were carried out this year. One, involving picking up lead brick, was carried out successfully. The other, involving a search for a small container that might have been covered, was unsuccessful.

Solid radioactive waste being delivered to Area G was weighed by the Zia Refuse Dept. for about a 6 week period in order to determine the weight per unit volume (pounds/ft.<sup>3</sup>). The data was reported to the Group Office and to H-7 Group Leader.

A study is being made of 2 inch plastic tape for use as a sealant for boxes and plastic bags at the CMR BLDG. If it appears to be better than 2 inch masking tape, it would be recommended for use instead of the 2 inch masking tape.

Faded signs posted along the perimeter fence to Area G were replaced this summer. A request for a replacement for the old Point Weather trailer, used to store emergency supplies at Area G, was withdrawn when it was learned that it would cost over \$2,000 to replace it. An order for a large sign was made during the fourth quarter. The sign is to be located on the access road to Area G and describes safety rules to be followed while in the Area. The sign has not yet been delivered.

Compliance with AEC-IAD-0511-21:

Although some compliance with this Directive has been started, strict interpretation would reveal several areas of non-compliance. Action was started during the third quarter to effect partial compliance as follows:

1. <sup>238</sup>Pu scrap from DP West is now "stored" in metal drums in pit #5, Area G.

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Compliance with AEC-IAD-0511-21 Cont.:

2. D-38 chips and turnings from the Shops Dept. are "stored" in metal drums in pit #5, Area G.
3. Tritium contaminated material is being incased in asphalt, where possible, prior to being "stored" in disposal shafts at Area G.
4. Disposal of plutonium contaminated material into disposal shafts is being segregated, where possible, from uranium contaminated material. This requires a larger number of shafts being "in service".
5. Sludge and/or cement paste from H-7's Treatment plants is put into 55 gal. metal drums. However, the drums are still being "stored" in disposal pits with other low-level waste.

Some areas of non-compliance with the Directive are as follows:

1. Segregation of low level waste has not been started.
2. Packaging of low level waste into plastic bags and cardboard boxes continues. The Directive calls for packaging into metal drums and/or plywood crates that are "contamination free" and retrievable for a period up to 20 years.

Explanation of data:

Data on waste volume is based on an actual count of boxes, bags, and drums. Unpackaged scrap material is estimated. Small plastic bags hold 0.037 yd.<sup>3</sup>, large plastic bags have a volume of 0.46 yd.<sup>3</sup> and cardboard boxes 0.087 yd.<sup>3</sup>. 55 gal. drums hold 0.3 yd.<sup>3</sup>.

Cost data is derived as follows:

1. Small plastic bags: Cost is 8¢ each. Data supplied by S. P. Dept.
2. Large plastic bags: Cost is 24¢ each. Data supplied by S. P. Dept.
3. Cardboard boxes: These 13" x 13" x 21" boxes still cost 20¢ each, according to S P Dept. This price has remained essentially unchanged for the past 15 years.
4. Masking tape: Per S P Dept., 2" rolls cost \$1.00 per roll. Amount used is estimated.

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Explanation of data Cont.:

5. 55 gal. drums: New drums cost \$8.60 each.
6. Zia Janitor charge: Based on a time study and wages and overhead. It takes a janitor about one hour per day to package waste material.
7. H-1 vehicles: Charges are based on information furnished by SP Dept. and are for the stake body, one ton truck and 1/2 ton pickup.
8. H-1 radios: Charges based on information from ENG-5 Group.
9. Health Physics Surveyor: The HPS spends an estimated 6 man hours per day on disposal activities. The charge includes wages and overhead.
10. Protective clothing: This charge is based on an estimate.
11. Road and Ruin excavation: The charge is based on 20 year write-off of the original cost. Balance as of 12/31/70 was \$3,933.
12. Zia Laborers: This is an estimate based on \$12 per hour per man.
13. Zia Riggers: An estimate, using \$13 per hour per man. For both Laborers and Riggers, the charges are also based on an estimate of the time required to do the job.
14. Cover exposed trash: When possible actual Zia charges are used, but estimates are also made when cost data is not available.
15. Transport Dempster Dumpster: Charges are based on data furnished by The Zia Refuse Dept. that includes actual mileage and cost per mile.

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Explination of data Cont.:

16. Ecavate pit #6: Cost write-off based on actual excavation cost and write-off rate for a period of two years. Balance as of 12/31/70 was \$6,490.
17. Fencing: Based on actual charge and write-off rate of 20 years. Balance as of 12/31/70 was \$7,722.
18. Drill 6' diam. shaft: Charge is an estimate.
19. Drill 10 (2' diam.) shafts: Based on estimates and actual costs.

Packaging Materials:

	<u>1st qtr</u>	<u>2nd qtr</u>	<u>3rd qtr</u>	<u>4th qtr</u>	<u>Total</u>
1. Small plastic bags	2,227	1,857	2,127	1,984	8,195
2. Large plastic bags	989	899	1,072	994	3,954
3. Cardboard boxes	7,722	7,089	5,424	5,296	25,531
4. 55 gal. drums	227	308	329	186	1,050
5. Rolls of 2" tape	500	500	500	500	2,000

Waste Volume (yd.<sup>3</sup>):

	<u>1st qtr</u>	<u>2nd qtr</u>	<u>3rd qtr</u>	<u>4th qtr</u>	<u>Total</u>
1. Small plastic bags	82	69	79	73	303
2. Large plastic bags	455	414	493	457	1,819
3. Boxes	672	617	472	461	2,222
4. Drums	68	92	99	56	315
5. Loose scrap	<u>715</u>	<u>1,424</u>	<u>753</u>	<u>883</u>	<u>3,775</u>
Total	1,992	2,616	1,896	1,930	8,434

Disposal Costs:

	<u>1st qtr</u>	<u>2nd qtr</u>	<u>3rd qtr</u>	<u>4th qtr</u>	<u>Total</u>
1. Small plastic bags	\$ 178	\$ 148	\$ 170	\$ 149	\$ 645
2. Large plastic bags	237	216	257	239	949

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Disposal Costs Cont.:

	<u>1st qtr</u>	<u>2nd qtr</u>	<u>3rd qtr</u>	<u>4th qtr</u>	<u>Total</u>
3. Boxes	\$1,477	\$1,347	\$1,085	\$1,059	\$4,968
4. Drums	1,952	2,649	2,829	1,600	9,030
5. Tape	500	500	500	500	2,000
6. Janitor charge	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. Health Physics Surveyor	2,625	2,625	2,625	2,625	10,500
10. Protective clothing	50	50	50	50	200
11. Road & Ruin excavation	135	135	135	135	540
12. Zia Labor	1,500	1,792	3,000	4,176	10,468
13. Zia Riggers	6,400	1,500	1,000	936	9,836
14. Cover trash	1,600	1,800	900	---	4,300
15. Transport D. D.	3,523	4,016	3,603	3,119	14,261
16. Excav. pit #6	2,164	2,164	2,164	2,164	8,656
17. Fencing	218	218	218	218	872
18. Drill shaft (6' diam.)	---	---	900	---	900
19. Drill shaft (2' diam.)	---	600	---	---	600
Total	\$30,835	\$28,916	\$27,692	\$25,226	\$112,669
Cost/yd. <sup>3</sup>	\$ 15.00	\$ 11.00	\$ 15.00	\$ 13.00	\$ 13.00

Comparison of Waste Volume and costs by year:

	<u>Volume (yd.<sup>3</sup>)</u>	<u>Annual Cost</u>	<u>Cost/yd.<sup>3</sup></u>
1956	2,537	\$ 71,745	\$28
1957	3,164	75,548	24

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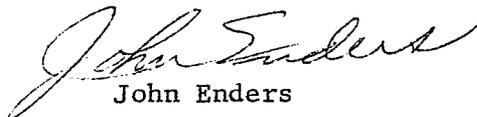
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Comparison of Waste Volume and costs by year Cont.:

	<u>Volume (yd.<sup>3</sup>)</u>	<u>Annual Cost</u>	<u>Cost/yd.<sup>3</sup></u>
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	7,144	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
1968	8,234	95,401	12
1969	6,915	93,766	14
1970	8,434	112,669	13

  
 John Enders

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