

OFFICE MEMORANDUM

TO : LaMar Johnson, H-8

DATE: April 3, 1974

Via : Keith Schiager, H-8

FROM : John Enders, H-8

SUBJECT : QUARTERLY REPORT FOR THE FIRST QUARTER OF 1974

SYMBOL : H8-WM-157

101a Report

This report covers solid radioactive waste disposal/ storage activities for the first quarter of 1974. Some of the data presented is based on estimates and this fact should be kept in mind if any conclusions are to be drawn from this report.

Information for the report was furnished by The Zia Company, ENG-4, Supply and Property Dept., Account Dept., and LA Notebooks #17335, 17339, 12442, 17337, 14909, 17336, 17845 and 17338.

PROCEDURES

One new Standard Operating Procedure was prepared and approved, in January, which covers radiological safety during emplacement of 30-gallon (115-liter) metal drums, filled with ^{238}Pu residues, into concrete casks at Area G. Work on revision of current Procedures continued at a slow pace during the quarter because of increased activity at Area G. It now appears more feasible to start work on a rough draft of a Waste Manual which would consolidate and upgrade current Procedures.

AREA G ACTIVITIES

1. ^{238}Pu Storage Facility

Work started on January 7, 1974 for the Facility which consists of two trenches excavated near the southwest corner of Area G. Two foot deep, 36-inch diam holes were drilled into the floor of Trench A and B. Concrete casks (with concrete lids) were emplaced in the drilled holes. The first delivery of casks was made on February 20, 1974 and final delivery of a total of 250 casks and lids was made on March 21 and 22, 1974.

Loading of casks with 30-gallon (115-liter) metal drums containing ^{238}Pu residues was started on March 4, 1974 and continued through March. Two drums are placed in each cask and then the lids were sealed onto the cask with an asphalt material. Each drum number, cask number, trench designation, and permanent identification tag number (sealed on the cask lid) is logged into LA Notebook #17335. CMB-11 is to furnish H-8 Waste Management with descriptions of the contents of each drum. As of the end of March 108 casks were filled in Trench A and one cask in Trench B was filled.



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When Trench A has been completely filled, metal sheeting will be laid over the casks and then fill dirt placed over the casks and then fill dirt placed into the Trench so as to provide a mounded cover over the casks of about three feet in depth.

2. With the issuance of LASL's Waste Management Policy and its approval by the AEC, the problem of what to do with the leaking sludge drums in Pit #8 was solved by changing the classification of these drums from retrievable to nonretrievable waste. The remaining space in Pit #8 was filled with nonretrievable, TRU waste and the final cover of dirt was placed on the pit on March 27, 1974.
3. The decision to close out Pit #5 was made and work started on providing a final dirt cover in March. The final cover should be complete by the end of the month.
4. Pit #17 was filled on March 1, 1974, and a final dirt cover was placed on the pit.
5. Zia carpenters added wood shielding planks around the pipes embedded in the floors of Pits #7 and #24. The additional shielding should provide better protection for these pipes during pit filling operations.
6. Zia painters have painted the old "Point Weather" storage trailer as well as the Cargo Trailer. In addition, two cargo sheds were painted after their delivery to Area G.
7. Zia laborers made a general area cleanup in February. Another cleanup is to be made in April to pick up material that was still frozen to the ground in February. Also, all of the drums that had been placed in Pit #12 (retrievable TRU material) were brought out of the pit and stored on pallets. It is planned to treat the drums with an anti-rust compound before placement into Pit #9 (new TRU retrievable storage pit.)
8. Zia carpenters have started rebanding and repair of plywood crates filled with TRU retrievable material. As about 70 crates are involved, the job will take some time to complete. It is planned to apply a fiberglass coating to these crates prior to relocating them into Pit #9.
9. A job order (#7741) was issued to The Zia Company on February 4, 1974 for excavation of Pit #9. The ENG-1 survey for the pit should be complete by the end of March. This pit will be used for storage of TRU retrievable waste.
10. Thirty and 55-gallon drums (115 and 210-liter, respectively) filled with TRU retrievable material, are being stored above

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ground pending completion of Pit #9. Canvas tarps are used to provide a cover for these drums as well as those removed from Pit #12.

11. The use of permanent, plastic, numbered identification tags was started this quarter on TRU retrievable packages.

12. Pit #16 is now being used to receive uranium-contaminated material such as TU chips generated by Shops Dept., and contaminated graphite from Sigma. In addition, "Controlled Waste," generated at SM-66 is being put in Pit #16. This material is placed into Dempster Dumpsters that have been repainted with white bands around their top and white access doors with wording on the doors, "For Controlled Waste Only." Segregation of waste into "Contaminated" and "Noncontaminated" categories by the waste generators should provide useful information on what amount of radioactive waste volume reduction could be realized.

13. Zia Mechanical maintenance Section has completed overhaul work on the four air sampler trailers used at Area G. Regular scheduled maintenance on the units by Zia is now being carried out.

14. ISD-7 (Graphic Arts) has started work on photographing waste disposal/storage activities. It is hoped to have the assignment completed by the end of March.

15. Long-term monitoring of Pits #8, 7, and 24 as well as Trenches A and B required placement of access pipe in these pits and trenches. Emplacement of pipe has been completed and, in addition, heat sensors were placed in three drums, containing ^{238}Pu residues, now sealed inside of concrete casks in Trenches A and B. Air sampling tubes will be added to these trenches with the placement of metal sheeting over the casks.

EQUIPMENT

1. The Hi-Vol air samplers in the air sampling trailers need to be replaced as it is not possible to repair them.

2. The two cargo sheds will provide additional storage for H-1 equipment and one shed will be used as a "hot" change room.

3. An Engineering Study has been requested for transportation and installation costs for two water storage tanks now located at TA-46.

4. The rough terrain type forklift, ordered recently, should be delivered in April.

5. A hydraulic hoist, to be used on the one-ton stake-body truck, has been ordered by The Zia Company.

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PROPOSED PLANS

1. A proposal has been made to build an oiled roadway in Area G. This would help control the serious dust problem at the Area. An additional access gate, located south of the existing gate, would be provided so as to permit heavy equipment access to the Area without having to travel on the oiled roadway.

| <u>PACKAGING MATERIAL</u> | <u>JAN.</u> | <u>FEB.</u> | <u>MARCH</u> | <u>QTR. TOTAL</u> |
|----------------------------|-------------|-------------|--------------|-----------------------|
| 1. Small plastic bags | 824 | 1 014 | 676 | 2 514 |
| 2. Large plastic bags | 296 | 410 | 240 | 946 |
| 3. Cardboard boxes | 1 538 | 1 250 | 1 486 | 4 274 |
| 4. Drums (210 liter) | 48 | 56 | 63 | 167 |
| 5. Drums (115 liter) | 73 | 7 | 244 | 299 |
| 6. Crates | 0 | 2 | 0 | 2 |
| 7. Mashing tape (rolls) | 500 | 500 | 500 | 1 500 |
| <u>DISPOSAL COSTS (\$)</u> | | | | |
| 1. Small plastic bags | 49 | 61 | 41 | 151 |
| 2. Large plastic bags | 53 | 74 | 43 | 170 |
| 3. Cardboard boxes | 308 | 250 | 297 | 855 |
| 4. Masking tape (rolls) | 500 | 500 | 500 | 1 500 |
| 5. Drums (210 liter) | 528 | 616 | 693 | 1 837 |
| 6. Drums (115 liter) | 450 | 43 | 1 505 | 1 998 |
| 7. Zia janitor | 4 660 | 4 660 | 4 660 | 13 980 |
| 8. H-8 | 4 100 | 3 700 | 3 800 | 11 600 |
| 9. Protective clothing | 100 | 100 | 100 | 300 |
| 10. Rd. & Ruin Excavation | 45 | 45 | 45 | 135 |
| 11. Zia labor | 2 000 | 7 700 | 7 500 | 17 200 |

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|------------------------------|--------|--------|--------|--------|
| 12. Transport D.D. | 1 026 | 652 | 829 | 2 507 |
| 13. Crates | 0 | 500 | 0 | 500 |
| 14. Excav. Pits 7 & 24 | 388 | 388 | 388 | 1 164 |
| 15. H-8 vehicles | 80 | 80 | 80 | 240 |
| 16. H-8 radios | 55 | 55 | 55 | 165 |
| 17. Fencing | 406 | 406 | 406 | 1 218 |
| TOTAL | 14 748 | 19 830 | 20 942 | 55 520 |
| COST PER M ³ (\$) | 41 | 68 | 111 | .66 |

DISPOSAL COST EXPLANATION

1. Small plastic bags cost 6¢ each and are used as liners for metal trash cans and cardboard boxes. The total number reported is quite conservative as only those used at the CMR Building are reported.

2. Large plastic bags (GS-2306) currently cost 18¢ each. The volume of a filled bag is 0.115 m³.

3. Cardboard boxes cost 20¢ each. The volume reported is based on the box dimensions (0.062m³.) The total number is based on information given to H-8 when a Dempster Dumpster container is reported to be full.

4. Masking tape (GS-3854/1W-7) costs \$1.00 per roll and usage is based on an estimate that is probably conservative.

5. 210-liter drum (LG-1110, ICC Spec. 17H.) A cost of \$11.00 each is used. The volume (0.210 m³) is based on the drum's dimensions.

6. 115-liter drum (LG-1102) costs \$6.17 each and the volume (0.115 m³) is based on the drum's dimensions.

7. The Zia janitor charge is based on a time study that indicates one man-hour per day is required to package waste and load Dempster Dumpsters. The cost includes salary plus overhead.

8. H-8 costs are estimates for two people working full time on disposal/storage operations and includes salary, overhead, materials and services.

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9. Protective clothing costs are based on estimates. Protective clothing is required to be worn during certain waste disposal activities.
10. Road and Ruin excavation charges are a 20-year cost write-off for the construction of two miles of road to Area G and Indian Ruin excavation in Area G. The balance as of 3-31-74 amounts to \$2 313.00
11. Zia labor charges are estimates based on the amount of work done in Area G and includes salary, overhead and heavy equipment charges.
12. Transport Dempster Dumpsters: the charges are based on a cost per mile and total mileage.
13. Excavation costs for Pits #7 and 24 (\approx \$28 000) are being written off over a two-year period. The balance as of 3/31/74 amounts to \$23 338.00
14. H-8 vehicles: charges are based on information supplied by Supply and Property Dept. and are for two-1/2 ton trucks and one 1-ton truck.
15. H-8 radio costs are based on information furnished by E-1 group and are for three mobile and one consol unit.
16. Fencing charges are cost write-offs for additional fencing installed at Area G in 1974. The remaining balance equals \$4 770.00.
17. Cost per M^3 does not include volume or costs for Area T.

| | <u>JAN.</u> | <u>FEB.</u> | <u>MARCH</u> | <u>QTR.</u> <u>TOTAL</u> |
|--|-------------|-------------|--------------|-----------------------------|
| <u>WASTE VOLUME (M^3)</u> | | | | |
| I. U Waste | | | | |
| A. Pit 5 | | | | |
| 1. Graphite | | 3.5 | | 3.5 |
| 2. Drums ($0.115 m^3$) | 2.87 | | | 2.87 |
| | | | PIT TOTAL | 5.92 |

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| | <u>JAN.</u> | <u>FEB.</u> | <u>MARCH</u> | <u>QTR. TOTAL</u> |
|---|-------------|-------------|--------------|-----------------------|
| B. Pit 21 | | | | |
| 1. Cardboard Boxes (0.062 m ³) | 40.98 | 26.97 | 30.31 | 98.26 |
| 2. Loose material | 9.28 | 55.05 | - | 64.33 |
| | | PIT TOTAL | | 162.59 |
| C. Pit 16 | | | | |
| 1. Boxes ("controlled waste") | - | 0.62 | 13.76 | 14.38 |
| 2. Large plastic bags ("controlled waste") | - | 5.09 | - | 5.09 |
| 3. Drums (0.115 m ³) | - | - | 1.84 | 1.84 |
| 4. Graphite | - | - | 4.24 | 4.24 |
| 5. Equipment | - | 1.81 | - | 1.81 |
| | | PIT TOTAL | | 27.36 |
| D. Shafts | 1.13 | 0.08 | 0.02 | 1.23 |
| U WASTE TOTAL = | 54.26 | 92.67 | 50.17 | 197.10 |

II. TRU (m³)

A. Pit 17 (<10 nCi/g)

| | | | | |
|----------------------------------|-------|-----------|------|--------|
| 1. Large plastic bags | 33.53 | 41.34 | - | 74.87 |
| 2. Boxes | 53.46 | 49.95 | 8.35 | 111.76 |
| 3. Drums (0.210 m ³) | - | 0.42 | - | 0.42 |
| 4. Drums (0.115 m ³) | - | - | 0.34 | 0.34 |
| 5. Drums (0.003 m ³) | 0.06 | - | - | 0.06 |
| 6. Loose material | 13.67 | 25.94 | 3.62 | 43.23 |
| | | PIT TOTAL | | 230.68 |

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|--|--------|--------|-----------|--------|
| B. Pit #8 (<10 nCi/g) [see note A] | | | | |
| 1. Large plastic bags | - | - | 27.18 | 27.18 |
| 2. Boxes | - | - | 39.50 | 39.50 |
| 3. Sludge drums (0.210 m ³) | 6.11 | 12.23 | 12.23 | 30.57 |
| 4. Loose material | - | 9.85 | 42.98 | 52.83 |
| | | | PIT TOTAL | 150.08 |
| C. Pit #12 (>10 nCi/g) [see note B] | | | | |
| 1. Drums (0.211 m ³) | 2.10 | 0.00 | 1.89 | 3.99 |
| 2. Drums (0.115 m ³) | 5.40 | 0.69 | 0.80 | 6.89 |
| 3. Filter plenums | 186.23 | 40.78 | 0.00 | 227.01 |
| 4. Crates | 0.00 | 18.12 | 0.00 | 18.12 |
| | | | PIT TOTAL | 256.01 |
| D. Shafts (<10 nCi/g) | 0.28 | 0.51 | 0.02 | 0.81 |
| E. Area A | 0.00 | 0.00 | 0.00 | 0.00 |
| F. Area T | 35.76 | 24.49 | 36.85 | 97.10 |
| TOTAL TRU = | 336.60 | 224.32 | 173.76 | 734.68 |
| III. FP/IA (m ³) | 0.08 | 0.22 | 0.00 | 0.30 |
| IV. T ² (m ³) | 0.48 | 0.00 | 0.90 | 1.38 |
| TOTAL M ³ (U, TRU, FP/IA, T ²) | 391.42 | 317.21 | 224.83 | 933.46 |

NOTE A

In addition to the volumes report for Pit #8, all of the TRU (<10 nCi/g) material stored on the east side of Pit #17 (1 037.07 m³) was placed in Pit #8. Also, all of the TA-50 sludge drums with 90 mil liners that were stacked north of Pit #8 (136.84 m³) were placed in Pit #8. The total waste volume placed in Pit 8 amounts to 1 669.26 m³.