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GROUP H-6 MONTHLY REPORT - Dean D. Meyer, Group Leader - July 14 to August 18, 1951

Reviewed/Lab Counsel  
Publicly Releasable

Reference No. H-6-195

LA 3-22-06-1044

L A M 20-894

JOB AND PERSONNEL

PROGRESS

1. Health Chemistry

Results of Water analyses for uranium on samples taken during July were received from H-5.

B. F. Schnap

<u>Collection Date</u>	<u>Location</u>	<u>ug u/l Water</u>
July 5, 1951	Sigma - old circ. water system	3.2
	Sigma - new circ. water system	1.0
	Sigma - drinking fountain	1.0
July 10, 1951	D Bldg. - drinking fountain	1.4
	D Bldg. - circ. water system	1.3

Circulating water from DP East was sampled July 26 and assayed for polonium. No polonium was detected. Drinking water at DP East was sampled August 18 and assayed for polonium. No polonium was detected.

The following water samples were assayed for plutonium.

<u>Collection Date</u>	<u>Location</u>	<u>c/m/l</u>
August 7, 1951	DP West - drinking water	0
	DP West - circ. water, Bldg. 2	73
	DP West - circ. water, Bldg. 3	0
	DP West - circ. water, Bldg. 4-5	350
August 11, 1951	D Bldg. - drinking water	0
	D Bldg. - circ. water	0

Classification changed to: Unclassified  
M. J. Shannon 2-18-06 (ADC/ADD)  
1st reviewer signature/title/org./date/authority  
Blahavir Jain, 2/17/06 ADD  
2nd reviewer signature/title/org./date/authority  
Derived From: LA-4000, Rev 8, 9/2002  
(Guide or Source Document and Date)

A filter queen paper from a sample of air in the exhaust system from Room 213, DP West, was washed down and some of the activity slurried and ignited on a platinum plate. The plate was submitted to GMR-4 for differential pulse analysis of the alpha radiation. Pulse analysis showed only plutonium present, no americium.

Extraction of polonium from filter papers used for air sampling at DP East is in progress.

II. Special Air Tests

A. O. Dodd

A new sample pick-up tube was built and installed in the DP West 513 Filter house. Ten days were spent with H-5 personnel testing a continuous air sampler and counter. The apparatus was impractical at the high contamination levels encountered because of a build-up of contamination inside the collector-counter chamber. Tests of the equipment were discontinued.

~~RESTRICTED DATA~~

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Health & Contamination

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JOB AND PERSONNEL

PROGRESS

II. (cont'd)

Air samples were taken for eight days across the filter unit exhausting equipment in Room 213, D P West. Results showed filtration of the air is very erratic, on occasion the filtered sample was higher than the raw sample. Filter failure is suspected.

III. Decontamination

J. B. Webber  
A. Fernandez  
F. Martinez

107 items having a replacement value of approximately \$3000.00 were decontaminated and returned to use. 90 transfer cans were decontaminated for CMR and ADP-SF personnel.

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SECTIONSurface Monitoring:

<u>Tech Area</u>	<u>No. Rooms Checked</u>	<u>Over Tolerance No. Positions</u>	<u>Percent Decontamination</u>
D Building	738	319	56
Sigma and Tu	136	129	53
U,M,H Bldg.	16	8	75
<u>DP West</u>			
GMR-11 Areas	118	892	66
GMR-4 Areas	28	63	81
GMR Laundry	20	20	65
<u>DP East</u>			
Polonium Areas	897	109	100
Actinium Areas	30	36	97

AIR-BORNE ALPHA CONTAMINATION  
(Tech Area - Plutonium Laboratories)  
Maximum allowable concentration 0.0044 c/m/l

<u>Location</u>	<u>No. Tests</u>	<u>No. Tests Over M.A.C.</u>		<u>Aug. High c/m/l</u>	<u>Aug. Ave. c/m/l</u>	<u>July Ave. c/m/l</u>
		<u>Aug.</u>	<u>July</u>			
D-101	14	1	0	0.0056	0.0011	0.0002
D-107	29	1	0	0.0123	0.0010	0.0009
D-118	6	0	1	0.0006	0.0004	0.0010
D-119	13	0	0	0.0006	0.0003	0.0004
D-120	11	0	-	0.0016	0.0007	-
D-130	28	0	2	0.0020	0.0006	0.0013
D-134	29	6	2	0.1215	0.0077	0.0025
D-136	29	0	1	0.0029	0.0006	0.0011
D-138	29	2	5	0.0112	0.0017	0.0057
D-139	29	3	8	0.0084	0.0019	0.0041
D-142	21	1	0	0.0201	0.0020	0.0002
D-148	28	11	5	0.0199	0.0044	0.0041
D-149	8	2	7	0.0069	0.0027	0.0054

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Location	No. Tests	No. Tests Over M.A.C.		Aug. High	Aug. Ave.	July Ave.
		Aug.	July	c/m/1	c/m/1	c/m/1
D-152	29	7	6	0.0143	0.0029	0.0044
D-301A	19	1	-	0.0092	0.0010	-
D-304	27	2	2	0.0084	0.0018	0.0022
D-304B	28	3	3	0.0161	0.0019	0.0032
D-307	10	0	0	0.0040	0.0014	0.0014
D-311	29	3	1	0.0098	0.0018	0.0012
D-313	29	14	4	0.1140	0.0175	0.0124
D-320	29	3	1	0.0412	0.0040	0.0027
D-323	4	0	0	0.0034	0.0018	0.0009
D-411	8	0	-	0.0017	0.0010	-
D-504	13	0	0	0.0016	0.0008	0.0004
D-Vault Hall	5	0	-	0.0022	0.0009	-
<u>DP West</u>						
Room 201	30	5	2	0.0333	0.0034	0.0019
<u>Room 213</u>						
Evap. Room	27	0	0	0.0041	0.0012	0.0007
Main Aisle	26	1	2	0.0048	0.0014	0.0009
Unloading Rm.	29	0	0	0.0020	0.0008	0.0009
<u>Beside Filter</u>						
Drybox	25	1	3	0.0065	0.0014	0.0063
Room 218	30	4	1	0.0183	0.0025	0.0013
Room 313*	30	7	1	0.3529	0.0171	0.0010
Room 322	28	1	0	0.0067	0.0009	0.0002
Room 401	29	1	0	0.0152	0.0020	0.0007
Room 406	30	7	4	0.0138	0.0027	0.0032
Room 408*	30	4	5	0.0172	0.0027	0.0041
Room 413*	30	21	3	4.2171	0.5421	0.0034

<u>Location</u>	<u>No. Tests</u>	<u>No. Tests Over M.A.C.</u>		<u>Aug. High</u>	<u>Aug. Ave.</u>	<u>July Ave.</u>
		<u>Aug.</u>	<u>July</u>	<u>c/m/l</u>	<u>c/m/l</u>	<u>c/m/l</u>
Room 501						
Control Room	29	0	0	0.0010	0.0004	0.0003
Plant	30	3	4	0.0090	0.0020	0.0275
Room 506	28	5	1	0.0108	0.0025	0.0008
Room 508	30	0	1	0.0031	0.0009	0.0009
Room 513	30	4	4	0.1340	0.0073	0.0052
Hot Locker Rm	30	3	0	0.0100	0.0024	0.0011
Bldg. 35	30	2	1	0.0114	0.0021	0.0012
Bldg. 34	29	0	0	0.0025	0.0008	0.0009
<u>DP West - CMR-4</u>						
Room 307	30	0	0	0.0041	0.0008	0.0005
Room 319	30	1	1	0.0048	0.0009	0.0006

PLUTONIUM - AMERICIUM - POLONIUM AND URANIUM  
 Maximum allowable concentration 0.0044 c/m/l

CMR Laundry

Sorting Rm.	30	5	1	0.0116	0.0034	0.0014
Washing Rm.	27	2	1	0.0171	0.0021	0.0009
Respirator Rm	30	1	0	0.0096	0.0014	0.0005

POLONIUM

Maximum allowable concentration 0.700 c/m/l

DP East

Room 5203	30	0	0	0.013	0.003	0.004
Room 5204	19	0	0	0.020	0.004	0.012
Room 5205	14	0	0	0.005	0.002	0.001
Room 5206	14	0	0	0.028	0.004	0.004
Room 5208	14	0	0	0.006	0.003	0.003
Room 5210	16	1**	0	7.25.5	≈ 1.6	0.003

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Location	No. Tests	No. Tests Over M.A.C.		Aug. High c/m/l	Aug. Ave. c/m/l	July Ave. c/m/l
		Aug.	July			
Room 5211	15	0	0	0.013	0.005	0.007
5212	30	0	0	0.058	0.004	0.003
Room 5213	16	0	0	0.012	0.003	0.002
Room 5214	16	0	0	0.008	0.004	0.004
Room 5227	16	0	0	0.242	0.026	0.001
Room 5230	16	0	0	0.028	0.005	0.009

NORMAL URANIUM

Maximum allowable concentration 0.033 c/m/l

Sigma Bldg.

Sigma 21	27	0	0	0.0282	0.0078	0.0082
Sigma 21C	29	0	0	0.0068	0.0034	0.0049
Sigma 22	10	0	0	0.0081	0.0030	0.0036
Sigma 104	29	0	1	0.0233	0.0079	0.0061
Sigma 118	29	0	0	0.0014	0.0007	0.0007

TU Bldg.

TU Saw Rm.	27	1	0	0.0336	0.0087	0.0095
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ENRICHED URANIUM

Maximum allowable concentration 0.0044 c/m/l

These rooms are located in a plutonium area and are held to the plutonium tolerance.

D Bldg.

D-108A	18	1	0	0.0191	0.0026	0.0008
D-112	28	6	2	0.0119	0.0021	0.0012
D-114	25	0	0	0.0021	0.0009	0.0010
D-115	28	14	3	0.0986	0.0097	0.0020
D-116	28	20	6	0.0357	0.0075	0.0026
D-127	29	0	0	0.0093	0.0019	0.0022
D-129	29	0	2	0.0018	0.0008	0.0031

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Reference No. H-6-195

<u>Location</u>	<u>No. Tests</u>	<u>No. Tests Over M.A.C.</u>		<u>Aug. High</u> <u>c/m/l</u>	<u>Aug. Ave.</u> <u>c/m/l</u>	<u>July Ave.</u> <u>c/m/l</u>
		<u>Aug.</u>	<u>July</u>			
<u>Sigma Bldg.: M.A.C. 0.033 c/m/l</u>						
S-106	29	0	1	0.0030	0.0011	0.0062
S-110	29	0	0	0.0174	0.0055	0.0048
S-117	29	5	0	0.2059	0.0241	0.0045

\* These rooms are being dismantled. Personnel working in them wear respirators or supplied air equipment.

\*\* See item No. 4 under general

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AIR-BORNE ALPHA CONTAMINATION IN EXHAUST SYSTEMS

<u>Location</u>	<u>No. Tests</u>	<u>Aug. High</u> <u>c/m/l</u>	<u>Aug. Ave.</u> <u>c/m/l</u>	<u>July Ave.</u> <u>c/m/l</u>
<u>DP West</u>				
Average conc. from stacks (24 hrs.)	246	0.9816	0.0415	0.0501
Average conc. from bldg. ducts (24 Hrs.)	107	2.8905	0.1169	0.1129
Daily conc., Stack 1, day run (7 hrs.)	30	0.9816	0.1473	0.1582
Daily conc., Stack 2, day run (7 hrs.)	30	0.7970	0.1377	0.1709
Daily conc., Stack 3, day run (7 hrs.)	30	0.1862	0.0405	0.0606
Daily conc., Stack 4, day run (7 hrs.)	28	0.4016	0.0807	0.1284
Daily conc., Stack 1, Night run (17 hrs.)	25	0.0401	0.0075	0.0040
Daily conc., Stack 2, night run (17 hrs.)	24	0.0624	0.0119	0.0088
Daily conc., Stack 3, night run (17 hrs.)	25	0.0346	0.0059	0.0023
Daily conc., Stack 4, night run (17 hrs.)	24	0.0689	0.0114	0.0060
Daily conc., east side plenum, day (7 hrs.)	30	2.8905	0.4352	0.4678
Daily conc., west side plenum, day (7 hrs.)	28	0.7411	0.1034	0.1131
Daily conc., east side plenum, night (17 hrs.)	25	0.0846	0.0415	0.0165
Daily conc., west side plenum, night (17 hrs.)	24	0.1078	0.0238	0.0104
<u>DP East</u>				
Average conc. from stacks (8 hrs.)	59	0.339	0.060	0.053
Average conc. from bldg. ducts (8 hrs.)	29	0.406	0.116	0.120

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Reference No. H-6-195

## NOSE SWIPE TESTS

<u>Area</u>	<u>No. Tests taken</u>	<u>No. Over Tolerance</u>	<u>Highest over Tolerance</u>
D and M Buildings	1959	1	123/98 c/m
Sigma and Tu	527	4	440/214 c/m
DP West (CMR-11, H-6 and Zia)	1867	12	101/1735 c/m
DP West (CMR-4)	85	0	-----
Laundry	545	0	-----
<u>DP East</u>			
Polonium Area	212	1	1700 c/m
Actinium Area	15	0	-----

## HAND COUNTS

<u>Area</u>	<u>No. Counts Recorded</u>	<u>No. Over Tolerance</u>	<u>Highest over Tolerance</u>
D Building	7838	0	-----
Sigma	772	0	-----
DP West (CMR-11)	3026	0	-----
DP West (Zia)	3136	2	2000 c/m
DP West (CMR-4)	558	0	-----
Laundry	2474	0	-----
<u>DP East</u>			
Polonium Area	1435	0	-----
Actinium Area	44	0	-----

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Reference No. H-6-195

Page 10

General:

1. 186 persons were scheduled for Health passes during the month. These include 107 University of California personnel, 60 Zia Company personnel and 19 AEC personnel. Eleven of these tests were submitted by the home collection method. Reports on all tests show concentrations below the permissible levels in the urine.
2. Work on dismantling Rooms 408, 413 and 313 continued at DP West. All of the laboratory equipment has been removed from Room 413. The air-borne contamination level was high during the cleaning of the hoods. By the use of supplied air respiratory equipment the personnel exposure was kept low.
3. GMR-3 continued work with actinium. Thirty air samples were taken during the month. Average air-borne activity was 0.001 c/m/l with a maximum of 0.004 c/m/l.
4. The high air count in Room 5210 at DP East was caused by the breakage of a thin walled quartz bulb. The filter queen was running approximately four feet from the hood, the activity on the filter paper was concentrated in an area approximately 1 cm<sup>2</sup>. The man working in the room submitted an urine sample, which was below the permissible level.
5. No contaminated accidents were reported during the month.

*Dean D. Meyer*  
Dean D. Meyer  
Group Leader, H-6

DDM:je

cc: 1A Doc. Room  
2A E. R. Jette  
3A T. N. White  
4A H-6 File

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