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JEB

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MOUND LABORATORY  
Operated By  
MONSANTO CHEMICAL COMPANY  
MIAMISBURG, OHIO

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HEALTH-PHYSICS MONTHLY INFORMATION REPORT

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Shali Kinn  
Authorizing Official  
Date: 3/18/09

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Date: October 1-31, 1950

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Laboratory Director

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I. PERSONNEL

V. Gerrard - Secretary

A. Survey and Decontamination Section

Section Chief

J. Bradley (B.S.)

1. Monitoring Group

Supervisor

H. Meyer

Chemists

J. List and N. Poling

Laboratory Assistants

L. Cottongim, A. Czeiszperger, L. Lewis, E. Lane, R. Sabo, M. Virag,  
and E. Welles

2. "T" Area Survey Group

Supervisor

R. Guillet

Health Surveyors

T. McGuire, R. Thomasson, C. Carlin, I. Johnson, W. Reiter, J. Trigg,  
and E. Wright

Custodian

L. Belcher

Decontamination Workers

A. Bradam, R. Brown, C. Buford, C. Chrisman, S. Cole, W. Cooper,  
G. Henderson, J. Hill, O. Hughes, T. Kidd, F. McEachern, S. Newman,  
J. Roark, C. Robertson, W. Stark, L. Stump, C. Swartz, C. Taylor,  
O. Trusty, and J. Walker

3. "G" Area Survey Group

Supervisor

W. Bigler

Health Surveyors

J. Garner, J. Geis, H. Hamman, H. Hedgebeth, B. Minor, and A. Toth

Custodian

J. Gerdes

Decontamination Workers

S. Bali, J. Belem, C. Edwards, L. Harakay, A. Padgett, W. Penwell,  
and R. Potter

4. Decontamination Group

Supervisor

R. Brodbeck

Decontamination Workers

C. Brodrick, W. Cramer, R. Dowler, N. Fecher, J. Herman, A. Logsdon,  
J. McGee, E. Morton, and L. Mosbacher

B. Instrument Section

Section Chief

R. Miller (B.S.)

1. Research and Development Group

Senior Research Group Leader

W. Hood (B.E.E.)

Electronic Engineer

A. Rogers

Assistant Electronic Engineers

J. Combs, C. Hemler, and J. Williamson

Electronic Technician A

I. Grafton

Draftsman C

R. Kissinger

2. Maintenance Group

Maintenance Supervisor

N. Baird

Senior Electronic Technician

W. Dershem

Electronic Technician A

D. Barlow, W. Layland, and F. Vescio

Electronic Assistant A

R. Brewer, B. Halley, and R. Lomas

Electronic Assistant B  
I. Faul and D. O'Connor

3. Counting Group

Counting Supervisor  
H. Hull

Chief Instrument Operators  
F. Cirillo and A. Muldoon

Instrument Operators A  
M. Bolton, M. Bruck, P. Cole, B. Dudley, R. Hicks, B. Higgins, H. Hudson,  
C. Lane, F. Lane, J. Moyer, T. Schilling, H. Swiger, and O. Woods

NOTE:

D. Hoke	(Terminated)	10/27/50
C. Chrisman	(New Employee)	10/23/50
P. Slezak	(Transferred)	10/23/50

II. MEDICAL SECTION

Mound Laboratory

Pre-employment examinations (including chest X-ray and Kahn)	15
Routine yearly examinations (including chest X-ray)	76
Special physical examinations	2
Termination examinations (including blood count, chest X-ray, and urinalysis)	19
Semi-annual routine chest X-ray	6
Special X-rays	8
Chest X-rays for month	116
Total X-rays	124
Dispensary visits	882
No. of claims submitted to Ohio Industrial Commission	1
No. of man-days lost per month due to occupational diseases or injuries (1 man-retroactive from 3/27/50)	198
No. of occupational injuries	87
Home calls	0
Hospital calls	0
No. of routine urinalyses	138
No. of routine blood counts	177
Vital capacities	3
Basal metabolism	3
Cafeteria samples	4
Sedimentation rates	4
Water Samples	9
Electrocardiogram	0
Kahns	15

Scioto Laboratory

No. of claims submitted to Ohio Industrial Commission	0
No. of occupational injuries	7
Pre-employment examinations	3
Routine annual examinations	0
Termination examinations	0
Special physical	1
Dispensary visits	5

III. SURVEY AND DECONTAMINATION SECTION

A. Monitoring Group

1. Urine Activity Analyses

Urine samples are collected periodically from all personnel, and are analyzed for activity content. The frequency of collection is determined by their possible exposure to activity. When a man is found to have a count higher than 24 d./min./ml., he is restricted from working in any risk area.

Table I shows the urine record for the period covered by this report.

2. Personnel Monitoring

All personnel assigned to duties in the risk areas of the plant are monitored routinely for beta and gamma exposure. Each person wears a film badge and two pocket meters. The pocket meters are read daily, and the film badges weekly, except when both pocket meters indicate an exposure of more than 100 mr., in which case the film badge is read immediately. In addition, those personnel who may be exposed to neutron radiation are monitored with NTA film, which is read weekly.

Table II gives the personnel monitoring results for the month of October.

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Table I

URINE SAMPLE RECORD FOR OCTOBER

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	"F" AREA							
	OPERATING				NON-OPERATING			
	10/2	10/9	10/16	10/23	10/2	10/9	10/16	10/23
Week Beginning	10/2	10/9	10/16	10/23	10/2	10/9	10/16	10/23
Total Personnel Examined	118	119	113	122	12	18	13	18
% of Personnel Examined	80	80	76	82	50	75	54	75
% of Technical Employees above 24 d./min./50 ml.	0.8	1.6	1.6	2.4	0	0	0	0
% of Non-Technical Employees above 24 d./min./50 ml.	16	16	16	16	0	0	0	0
No. of Technical Employees above 24 d./min./50 ml.	1	2	2	3	0	0	0	0
No. of Non-Technical Employees above 24 d./min./50 ml.	5	5	5	5	0	0	0	0
New Cases above 24 d./min./50 ml.	5	1	0	1	0	0	0	0
Old Cases above 24 d./min./50 ml.	1	6	7	7	0	0	0	0
	"G" AREA							
	OPERATING				NON-OPERATING			
	10/2	10/9	10/16	10/23	10/2	10/9	10/16	10/23
Week Beginning	10/2	10/9	10/16	10/23	10/2	10/9	10/16	10/23
Total Personnel Examined	95	103	89	92	121	96	106	128
% of Personnel Examined	73	79	69	73	29	23	25	31
% of Technical Employees above 24 d./min./50 ml.	0	0	0	0	0	0	0	0
% of Non-Technical Employees above 24 d./min./50 ml.	0	0	0	0	0	0	0	0
No. of Technical Employees above 24 d./min./50 ml.	0	0	0	0	0	0	0	0
No. of Non-Technical Employees above 24 d./min./50 ml.	0	0	0	0	0	0	0	0
New Cases above 24 d./min./50 ml.	0	0	0	0	0	0	0	0
Old Cases above 24 d./min./50 ml.	0	0	0	0	0	0	0	0

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Table II

PERSONNEL MONITORING

	Total No. Readings	No. Above 50 mr.	% Above 50 mr.	No. Above 150 mr.	% Above 150 mr.	No. Above 300 mr.	% Above 300 mr.
"T" Area Pocket Meters	4865	15	0.30	6	0.12	-	-
"G" Area Pocket Meters	4168	1	0.02	0	0.00	-	-
"T" Area Film Meters	717	6	0.80	0	0.00	0	0
"G" Area Film Meters	556	0	0.00	0	0.00	0	0
Visitors (FM)	1087	0	0.00	0	0.00	0	0

Neutron Films

234 monitoring films were processed.

230 films gave results from 0 to 0.4 times the maximum permissible exposure level.

4 films gave results 0.4 to 1.0 times the maximum permissible exposure level.

0 films gave results >1.0 times the maximum permissible exposure level.

3. Special Samples

Total number of urine activity analyses	1675
Control samples (urine)	89
Mud samples (Miami River)	276
Water samples (Miami River)	392
Mud samples (other than Miami River)	24
Vegetation samples	73
Waste Disposal samples	4
Water samples for "T" Building	8
Plant water supply samples	22
SD samples	56
Sewer samples	38

4. Off-Area Surveysa. Air Monitoring

Seventy-four off-area samples were taken during the month of October.

All samples were taken down wind from the plant.

59.5% of the results were 0 d./min./cubic meter.

40.5% of the results were 1-20 d./min./cubic meter.

0.0% of the results were >20 d./min./cubic meter.

b. River Surveys

Mud and water samples are collected routinely from the Miami River, between Dayton, Ohio and Elizabethtown, Ohio. The water samples and the mud samples, after being digested are evaluated to determine their polonium content. During the month of October, 392 water samples and 276 mud samples were analyzed.

B. Survey and Service Groups1. Air Surveys

Continuous air samples (8-hour) are collected in many areas of the plant. Table III is a record of the average levels of air contamination for the period of this report. In addition to the continuous samples, several spot air samples are collected and their average readings are tabulated in Table IV.

2. Wipe Sampling

Past experience in working with polonium has shown that loose surface contamination is more hazardous than fixed contamination. For this reason, in addition to direct surface readings, wipe sample surveys are made periodically. The surfaces to be surveyed are wiped over an area of approximately 40 square inches with filter paper. These samples are evaluated and the surfaces classified as white, yellow, or red as follows:

White	-	< 500 d./min./wipe samples
Yellow	-	500-2000 d./min./wipe samples
Red	-	>2000 d./min./wipe samples

Table V is a tabulation of wipe sample results for the period covered by this report.

Table III

8-HOUR CONTINUOUS AIR SAMPLES"T" AREA

<u>Area Classification</u>	<u>Sampling Site</u>	<u>Total Samples</u>	<u>No. Above A</u>	<u>Highest x A</u>	<u>Average x A</u>
Clean	78-Mechanical Equipment	42	0	0.07	0.01
	246-Research	5	0	0.09	0.04
	306-Counting	5	0	0.05	0.02
	323-"Y"	21	0	0.02	0.006
	317-Calorimetry	21	0	0.04	0.009
	319-Calorimetry	5	0	0.03	0.01
	307-Counting	5	0	0.01	0.007
	330-Change House	4	0	0.07	0.02
	300-Change House	4	0	0.10	0.05
Low Risk	6 & 1 Corridor	21	1	213.00	1.05
	16-Drum Storage	21	9	27.00	2.40
	247-Research	42	4	8.30	0.40
	248-"Y"	42	2	12.05	0.50
	250-"Y"	42	1	5.66	0.17
	251-"Y"	42	1	1.30	0.08
	253-"Y"	42	0	0.79	0.65
	254-"Y"	41	0	0.61	0.04
	256-"Y"	42	0	0.74	0.04
	257-"Y"	42	0	0.58	0.06
	259-"Y"	10	1	5.85	0.77
	260-Micro Assay	126	1	1.56	0.14
	311-Control	63	6	96.00	1.89
	267-P & E	42	5	3.04	0.38
	270-P & E	41	0	0.85	0.22
	275-Concentration	42	1	1.89	0.11
	276-Concentration	42	0	0.21	0.05
	281-Change House	42	0	0.92	0.10
	237-Storage	4	0	0.18	0.07
	226-"Y"	6	0	0.35	0.07
	218-Lounge	21	0	0.13	0.05
	46-Decontamination	63	7	96.00	3.26
	61-Decontamination	42	0	0.27	0.06
	13-Decontamination	42	4	4.73	0.42
	11-Maintenance	42	0	0.91	0.06
	"WD"-Building	184	1	2.30	0.11
	"HH"-Building	23	4	18.33	2.37
	Incinerator	115	25	67.20	2.86

Table III-(Continued)

"T" AREA

<u>Area Classification</u>	<u>Sampling Site</u>	<u>Total Samples</u>	<u>No. Above A</u>	<u>Highest x A</u>	<u>Average x A</u>
High Risk	C-23-Corridor	21	18	240.00	43.12
	249-"Y"	21	17	240.00	50.37
	252-"Y"	21	13	240.00	20.80
	255-"Y"	21	14	96.00	9.84
	258-"Y"	21	1	2.51	0.27
	261-Micro Assay	21	17	21.12	5.57
	262-Micro Assay	21	18	168.00	27.85
	308-Control	21	12	29.04	3.32
	309-Control	21	17	96.00	16.82
	266-P & E	21	21	240.00	106.56
	268-P & E	21	21	240.00	60.50
	269-P & E	21	21	240.00	146.00
	271-P & E	21	21	240.00	51.20
	277-NS	42	1	9.54	0.24
	279-NS	42	0	0.27	0.04
	52-Maintenance	21	14	16.80	3.55
71-Balance Repair	21	4	72.00	3.91	
Hot	57-Concentration	21	0	0.93	0.23
	59-Concentration	21	13	213.00	16.60
Exhaust Air System	E-22	21	0	0.04	0.06
	E-31B	21	0	0.02	0.006
	E-21	19	0	0.01	0.004
	E-31	21	0	0.03	0.009
	HE-23	21	0	0.04	0.006
	E-41	21	0	0.07	0.02
	E-16	21	0	0.02	0.005
	E-23	21	0	0.03	0.04
	E-11A	21	0	0.02	0.007
E-24	21	0	0.02	0.005	
Pre-Filter Air Sampler	E-22	20	7	96.00	39.86
	E-23	21	0	0.16	0.04
	E-24	21	0	0.49	0.03
	E-31A	21	1	1.20	0.08

Table III-(Continued)

"G" AREA

<u>Area Classification</u>	<u>Sampling Site</u>	<u>Total Samples</u>	<u>No. Above A</u>	<u>Highest x A</u>	<u>Average x A</u>
Clean	H-Laundry	105	0	0.21	0.03
Low Risk	H-Laundry	41	1	1.83	0.19
	H-Change Houses	20	0	0.03	0.02
	B-Penthouse	63	0	0.04	0.01
	B-Corridors	123	0	0.20	0.03
	B-102-Chronic Exposure	62	0	0.33	0.02
	B-104-Chronic Exposure	42	0	0.04	0.01
	B-105-Chronic Exposure	63	4	15.36	0.63
	B-108-Physiology	63	0	0.12	0.02
	B-109-Acute Exposure	63	0	0.85	0.03
	B-111-Acute Exposure	84	0	0.06	0.01
	B-112-Source	84	0	0.09	0.02
	B-122-Biochemistry	63	0	0.08	0.02
	B-125-Plating	21	0	0.07	0.03
	B-126-Glassware Cleaning	42	0	0.25	0.02
	B-136-Bacteriology	63	0	0.09	0.01
	B-137-Genetics	42	0	0.12	0.02
	B-141-Animal Stock	21	0	0.02	0.01
	B-142-Animal Stock	21	0	0.16	0.02
	B-143-Animal Stock	21	0	0.04	0.01
	B-144-Isolation & Records	21	0	0.04	0.01
	B-119-Pathology	84	0	0.07	0.01
	R-102-Rest Room	21	0	0.04	0.01
	R-103-Study Room	21	0	0.04	0.01
	R-106-Stockroom	42	0	0.03	0.01
	R-107-Battery Room	20	0	0.04	0.01
	R-108-Decontamination Storage	19	0	0.04	0.01
	R-109-Calorimetry	20	0	0.08	0.01
	R-110-Calorimetry	21	0	0.04	0.01
	R-111-Waste Disposal	21	1	10.46	0.51
	R-112-Standards	21	0	0.04	0.01
	R-113-Mass Spectroscopy	21	0	0.04	0.01
	R-114-Cloud Chamber	42	0	0.12	0.01
	R-115-Cloud Chamber	21	0	0.05	0.01
	R-120-Physics	42	0	0.03	0.01
	R-122-Physics	21	0	0.04	0.01
	R-123-Change Room	21	0	0.03	0.01
R-127-Waste Disposal	42	0	0.31	0.06	
R-129-Waste Disposal	21	0	0.02	0.01	
R-130-Waste Disposal	20	0	0.82	0.05	

Table III-(Continued)

"G" AREA

<u>Area Classification</u>	<u>Sampling Site</u>	<u>Total Samples</u>	<u>No. Above A</u>	<u>Highest x A</u>	<u>Average x A</u>
Low Risk	R-131-Decontamination	20	0	0.07	0.01
	R-133-Decontamination	20	0	0.02	0.01
	R-134-Health Electronics	20	0	0.04	0.01
	R-136-Decontamination	20	0	0.07	0.02
	R-137-Decontamination	20	0	0.28	0.02
	R-140-Decontamination	21	0	0.03	0.01
	R-142-High Vacuum	42	0	0.16	0.02
	R-145-Fundamental Research	21	0	0.06	0.02
	R-149-Fundamental Research	21	0	0.04	0.01
	R-151-Purification	21	0	0.09	0.02
	R-152-Change Room	21	0	0.36	0.03
	R-155-Electrolytic Research	21	0	0.04	0.01
	R-156-Electrolytic Research	21	0	0.24	0.01
	R-157-Electrolytic Research	21	0	0.16	0.007
	R-159-Electrolytic Research	42	0	0.02	0.008
	R-161-Electrolytic Research	21	0	0.04	0.01
	R-162-Waste Disposal	21	0	0.03	0.01
	R-163-Waste Disposal	21	0	0.13	0.02
	R-164-Distillation Room	21	0	0.02	0.009
	R-165-LR Shop	21	0	0.04	0.01
	R-166-Fundamental Research	21	0	0.04	0.01
	R-167-Waste Disposal	19	0	0.04	0.01
	R-168-Waste Disposal	21	0	0.25	0.06
	R-169-Health Electronics	42	0	0.57	0.02
	R-170-Absorption Spectroscopy	21	0	0.03	0.01
	R-171-Fundamental Research	42	0	0.15	0.02
	R-172-Fundamental Research	21	0	0.02	0.01
	R-173-Quartz Fiber	21	0	0.05	0.01
	R-174-Quartz Fiber	21	0	0.02	0.01
	R-175-Quartz Fiber	20	0	0.02	0.01
	R-176-Balance Room	21	0	0.12	0.02
	R-177-X-Ray Diffraction	21	0	0.03	0.01
	R-178-X-Ray Diffraction	21	0	0.03	0.01
R-179-Spectroscopy	21	0	0.03	0.01	
R-181-Spectroscopy	21	0	0.02	0.01	
R-182-Rest Room	21	0	0.03	0.01	
R-202-Penthouse	20	0	0.04	0.01	
R-208-Fan Room	42	0	0.04	0.01	
R-Corridors	207	1	1.57	0.02	

Table III--(Continued)

"G" AREA

<u>Area Classification</u>	<u>Sampling Site</u>	<u>Total Samples</u>	<u>No. Above A</u>	<u>Highest x A</u>	<u>Average x A</u>
High Risk	R-119-Elephant Corridor	21	0	0.09	0.02
	R-121-Elephant Corridor	21	8	30.00	2.75
	R-128-Elephant Corridor	20	0	0.12	0.02
	R-132-Elephant Corridor	20	1	1.84	0.15
	R-135-Decontamination	20	0	0.09	0.03
	R-141-Elephant Corridor	21	0	0.31	0.03
	R-143-Elephant Corridor	21	2	44.80	2.27
	R-144-Elephant Corridor	21	1	1.15	0.09
	R-146-Elephant Corridor	21	0	0.46	0.06
	R-148-Elephant Corridor	21	0	0.22	0.03
	R-150-Elephant Corridor	21	0	0.09	0.02
	R-158-Elephant Corridor	21	0	0.15	0.02
	R-160-Elephant Corridor	21	0	0.06	0.02
	R-221-Filter Bank Corridor	42	0	0.07	0.01
	R-Corridor No. 5	82	3	4.42	0.14
	H-Laundry	63	15	4.28	0.77
	B-208-Filter Bank Corridor	42	0	0.03	0.01
	B-105-A-Corridor	21	0	0.03	0.01
	B-109-A-Corridor	21	0	0.50	0.05
	Exhaust Air System	H-205	21	0	0.28
H-Annex		21	0	0.08	0.02
B-209		21	0	0.05	0.01
B-212		21	0	0.01	0.002
B-213		21	0	0.04	0.01
B-214		21	0	0.01	0.002
B-215		21	0	0.03	0.01
B-216		21	0	0.04	0.01
R-209		21	0	0.02	0.01
R-210		21	0	0.02	0.01
R-211		21	0	0.02	0.005
R-212		21	0	0.02	0.003
R-213		21	0	0.02	0.005
R-214		21	0	0.02	0.005
R-215		17	0	0.03	0.01
R-216		21	0	0.03	0.01
R-217		21	0	0.02	0.004
R-218		21	0	0.07	0.01
R-219		21	0	0.03	0.005
R-220		21	0	0.03	0.004

A = 1,000 d./min./cubic meter

UNCLASSIFIED

Table IV

SPOT AIR SAMPLES

<u>Area Classification</u>	<u>Sampling Site</u>	<u>Total No. Samples</u>	<u>Average x A</u>
Low Risk	T-247-"Y"	6	0.66
	T-Dock Area	4	0.15
	T-248-"Y"	3	0.33
	T-253-"Y"	3	0.33
	R-145-Research	36	0.41
	R-147-Research	19	0.37

A = 1,000 d./min./cubic meter

Table V  
WIPE SAMPLES OVER A 40 SQUARE INCH AREA

"T" AREA

<u>Location</u>	<u>No. of Wipes</u>	<u>% White</u>	<u>% Yellow</u>	<u>% Red</u>
267-P & E	2800	95	2	3
270-P & E	2520	91	3	6
260-265-Micro Assay	1872	95	2	3
311-Control	532	98	1	1
275, 276-Concentration	320	99	1	0
277, 279-NS	684	98	0	2
230-233-Preparations	124	94	3	3
248-"Y"	482	93	0	7
250-"Y"	374	98	1	1
251-"Y"	468	99	0	1
253-"Y"	478	98	1	1
254-"Y"	288	100	0	0
256-"Y"	272	100	0	0
257-"Y"	322	100	0	0
259-"Y"	485	92	5	3
"WD"-Building	1785	98	1	1
"HH"-Building	236	82	6	12
247-Research	1012	96	1	3
13, 46, 61-Decontamination Low Risk Offices	477	84	6	10
Floor Surveys	336	97	2	1
Incinerator	1788	95	2	3
	208	60	19	21

"G" AREA

B-102-103-Chronic Exposure	98	100	0	0
B-104-Chronic Exposure	70	100	0	0
B-105-Chronic Exposure	168	93	2	5
B-106-107-Change Room & Air Lock	63	100	0	0
B-108-Physiology	133	100	0	0
B-109-Acute Exposure	147	99	0	1
B-110-111-Acute Exposure	105	100	0	0
B-112-Source	84	100	0	0
B-119-Pathology	350	100	0	0
B-122-Biochemistry	595	100	0	0
B-136-Bacteriology	196	99	1	0
B-137, 138-Genetics	77	98	1	1
B-139-Equipment Design & Repair	63	100	0	0
Breezeway	56	100	0	0
H-124-127-Laundry, Sorting, Office, Survey, etc.	464	99	1	0
H-128-132-Laundry "G" Area	264	100	0	0
H-131-134-Laundry "LR" Area	104	96	0	4
H-133-135-Laundry "H" Area	120	28	0	72

Table V

WIPE SAMPLES OVER A 40 SQUARE INCH AREA"G" AREA

<u>Location</u>	<u>No. of Wipes</u>	<u>% White</u>	<u>% Yellow</u>	<u>% Red</u>
R-102-Rest Room	60	100	0	0
R-103-Study Room	72	100	0	0
R-107-Battery Room	72	100	0	0
R-108-Decontamination Stock	92	100	0	0
R-109-Calorimetry	92	100	0	0
R-110-Calorimetry	120	100	0	0
R-111-Waste Disposal	104	100	0	0
R-112-Standards	104	100	0	0
R-113-Mass Spectroscopy	100	100	0	0
R-114, 115-Cloud Chamber	170	100	0	0
R-116-Neutron Laboratory	182	100	0	0
R-117-Vault	108	100	0	0
R-120, 122-Physics	1090	100	0	0
R-123-Change Room	130	100	0	0
R-129-Waste Disposal	320	100	0	0
R-130-Waste Disposal	336	100	0	0
R-131-Decontamination	288	100	0	0
R-133-Decontamination	288	100	0	0
R-134-Health Electronics	203	100	0	0
R-140-Decontamination	396	99	0	1
R-142-High Vacuum	891	100	0	0
R-145-Gamma Scale	770	100	0	0
R-147-Fundamental Research	760	98	0	2
R-149-Fundamental Research	750	98	0	2
R-151-Purification	324	100	0	0
R-152-Change Room	117	100	0	0
R-155, 156-Electrolytic Research	208	100	0	0
R-157-Electrolytic Research	266	100	0	0
R-159-Electrolytic Research	1023	100	0	0
R-161-Electrolytic Research	328	100	0	0
R-162-Waste Disposal	324	100	0	0
R-163-Waste Disposal	162	100	0	0
R-164-Distillation Room	72	100	0	0
R-165-IR Shop	130	100	0	0
R-166-Fundamental Research	185	100	0	0
R-169-Health Electronics	440	100	0	0
R-170-Absorption Spectroscopy	125	100	0	0
R-171, 172-Gamma Scale	205	99	0	1
R-173, 174, 175-Quartz Fiber	88	100	0	0

Table V

WIPE SAMPLES OVER A 40 SQUARE INCH AREA

"G" AREA

<u>Location</u>	<u>No. of Wipes</u>	<u>% White</u>	<u>% Yellow</u>	<u>% Red</u>
R-176-Balance Room	85	99	0	1
R-177, 178-X-Ray Diffraction	100	100	0	0
R-179, 180-Spectroscopy	124	100	0	0
R-181-Health Survey	69	100	0	0
R-182, 183, 184-Rest Room	52	100	0	0
R-Corridors	268	100	0	0
R-Doors	312	100	0	0

### 3. General Surveys

One hundred and thirty maintenance work permits were issued during October. For each permit issued, a complete survey of area conditions was made and proper protective measures were recommended.

Three outgoing shipments were surveyed at the request of the Atomic Energy Commission. All readings were below the prescribed levels for such shipments.

Four truck loads of contaminated waste material were shipped to Oak Ridge for burial.

A total of 624 trips were made into the high risk areas during this period. Each person was supplied with protective clothing consisting of coveralls, underclothes, socks, shoes, respirator or assault mask, goggles (if a respirator was worn), and a head covering. Personnel were required to shower before returning to the low risk areas.

The following surveys were made routinely:

- a. Weekly surveys in all clean areas.
- b. Beta and gamma surveys in all operating area. Results indicated no above tolerance levels.
- c. All materials leaving the plant site were checked for possible contamination.
- d. Hand checks were made twice daily.
- e. Shoe checks were made weekly.
- f. All plant vehicles were surveyed weekly.

### 4. Unusual Occurrences

The unusual number of people with high urine counts is due to two incidents. One was a spill of several units of polonium, which grossly contaminated one laboratory and several individuals. The room was evacuated as

soon as possible and sealed off until air levels were low enough to permit decontamination. Urine samples from the people involved showed six samples above 24 d./min./50 ml., although none were higher than twice this level. The second incident involved an unexplained reversal of pressure in the hoods of one of the "Y" lines. This reversal contaminated the individuals working in front of these hoods and a portion of the room. Two people received urine counts greater than 24 d./min./50 ml., from this, which accounts for our total of eight high counts.

### C. Decontamination Group

#### 1. Routine Decontamination

The following items were decontaminated by this group during October.

- 210 Respirators
- 414 Army assault masks
- 40 Goggles
- 152 Pairs of shoes
- 198 Gauntlet rings
- 47 Foil carriers
- 221 Foil holders
- 7579 Items of glassware
- 100 Storks
- 195 Maintenance tools
- 41 Alpha meter screens
- 9 Electronic instruments
- 14 Low geometry alpha counter sleeves
- 787 Miscellaneous items

#### 2. Decontamination Research

The one man available for this type of work is at present occupied full time with administrative and training duties, since a number of replacement Decontamination Workers have been assigned to the staff.

### D. Future Plans

1. Hire and train replacement surveyors.
2. Complete report on river surveys.

## IV. INSTRUMENT SECTION

The radon breath sample analyzing equipment recently installed in the "I" Building will be placed under the operation of the Health Counting Group by November 1, 1950.

Twelve ionization chambers to be used for the analysis of air samples for radon contamination were built by the Machine Shop. Facilities for evacuating these chambers were installed in Room R-169.

A fast neutron monitor with a linear scale range of 0-50 and 0-500 counts per second was constructed for the Survey Section.

An over-tolerance alarm system is being added to the fast neutron monitoring installation in the "Y" Operations area.

## FUTURE PLANS

1. To complete the installation of health instruments at Mound Laboratory.
2. To modify the battery operated hand counters.
3. To install equipment for the analysis of air samples for radon combination.
4. To design and build equipment for the analysis of breath samples for radon contamination.
5. To complete the health instrument installation at Scioto Laboratory.