1125.

Harshaw Chemical Co.

717184

~~This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, U.S.C. 50:31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.~~

~~RESTRICTED~~

Belmore

BEST COPY AVAILABLE

June 11, 1948.

Mr. F. M. Belmore, Director of Production,
U. S. Atomic Energy Commission,
Office of New York Directed Operations,
P.O. Box 30, Ansonia Station,
New York 23, New York.

NYO FILE NO. Harshaw-701

Dear Mr. Belmore:

ok

This will acknowledge receipt of your letter of June 7th together with the sketches on the fume recovery at our Area "C" in Cleveland.

We have reviewed your suggestions and also have discussed this with your Messrs. Harris and Breslin at the time of their visit at this office, and believe they will take care of some of our problems. We will make the necessary drawings and secure estimates and advise you the cost of these changes as recommended by Mr. Harris.

There is one question in our mind which perhaps Mr. Harris will be able to answer, and that is in the exhausting of the reactor hoods, it is recommended that the volume of air to be removed from each hood be 5,000 C.F.M. We have a total of fourteen (14) hoods which would mean that we would be exhausting about 70,000 C.F.M. to the atmosphere. This volume of air will contain a certain amount of fumes as we do not believe we will be able to collect all the fumes by the small hood immediately over the reactor, and since the City of Cleveland has been very carefully watching air polution, we feel that this volume of air being exhausted continually we might further polute the air and a scrubbing device of some sort should be installed, although for a volume of this nature it would have to be a rather large unit. We do not have any ideas at the present time on the type of unit and thought perhaps Mr. Harris might be of assistance to us in recommending either a collector or a scrubber for this part of the installation.

As soon as we have prepared the estimates on the revision of the hoods, etc., we will contact you.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

[redacted]
Chief Engineer

CLASSIFICATION CANCELLED
~~OR CHANGED TO~~
BY AUTHORITY OF DOE
BY JKK DATE 9/4/71

REPOSITORY Oak Ridge Operations Records Holding Area
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BOX No. 4-NN-326-87-8 12 of 45 Bldg. 2714-H
FOLDER Harshaw-701

1110358

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[redacted] consisting [redacted] of 5 copies, Series [redacted]

THE HARSHAW CHEMICAL COMPANY

CLEVELAND 6, OHIO

June 7, 1948

[redacted]

Mr. W. E. Kelley
U. S. Atomic Energy Commission
Office of New York Directed Operations
P. O. Box 30, Ansonia Station
New York 3, New York

NYO FILE NO. 701 Harshaw

Dear Mr. Kelley:

Your forbearance in permitting us to delay reply to your letter of April 30th is appreciated.

As I told you by phone, we have been attempting to protect our operation from dust and fume hazards by means of packaging of the raw material in unit packages which could be slid directly into the reactors without exposing the men to our usual hazards. I very much regret to say that as of the present date, this has not been successful. The reason for this lies in the fact that the furnaces surrounding the reactors do not have sufficient heat capacity to burn off the organic material used for wrapping so that during ensuing operations oxy compounds are produced rather than the desired end product.

While experimental work surrounding this effort has been progressing, our Engineering Department and our Plant Maintenance group have both been busy building various units for mechanical loading of the reactors. Some of these units should be ready for trial the early part of this week.

Mr. Seider of the Ferguson Construction Company very kindly detailed a man to study the operation and to make recommendations as to the proper loading devices taking into consideration our space limitations. We have not yet had a report from this investigation, but judge that we will have a report shortly.

You have our assurance that we are fully aware of the need for change and of the hazards to workmen in the area. We are excluding no ideas from our consideration in the problem effecting the required improvement, but I must admit that at times our ingenuity is taxed.

TO FILE
JUN 15 1948

[redacted]

1 110359

To Mr. W. E. Kelley
U. S. Atomic Energy Commission

CONFIDENTIAL

We will keep you informed of any progress made. Meanwhile, we sincerely appreciate the efforts of Mr. Harris and others who have visited the plant in recent weeks. Mr. Harris seems to feel that if the hoods were improved and the air intake increased about five times in the duct system, we would not have a serious hazard except in the ash handling. I believe that we all agree thoroughly with Mr. Harris' ideas and will do everything we can to see that his recommendations are carried out, although it probably means the expenditure of considerable sums of money which must of course be authorized.

As you realize, we are working under serious handicaps and if there are further comments or suggestions which you have to make, we would sincerely appreciate having the benefit of same.

Very truly yours,
THE HARSHAW CHEMICAL COMPANY

P. R. Pine
General Superintendent

PRP:jg

cc Mr. W. Taussig
Mr. C. F. Dunasky
Mr. A. Michalske

CONFIDENTIAL

1110360

[redacted] of the United States [redacted]
[redacted] Espionage Act, U.S.C. 50:31 [redacted]
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COPY

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Number [redacted]

THE HARSHAW CHEMICAL COMPANY

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

~~CONFIDENTIAL~~

May 20, 1948.

U. S. Atomic Energy Commission
Office of New York Directed Operations
P.O. Box 30, Ansonia Station
New York 23, New York

Vol. Harshaw

Attention: M. Eisenbud, Chief,
Health and Safety Branch.

Dear Sir:

In answer to your telephone request of May 20 we have measured the activity of Area "C" ash using a Laurentian Electroscope and find 100 g. (100 cc. vol.) spread out in a flat dish 10 cm. dia. gives a reading of 10 div. in .2 min. at 1 meter. The electroscope calibration indicates 3 div./ min./ mg./ 1 meter.

Perhaps this will allow you to calculate the quantity required.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Manager,
New Products Department.

KELong/mm
Extra copy attached.

~~CONFIDENTIAL~~

1110361

~~RESTRICTED~~

AIR MAIL

Donnelly:ss

DR:MD 70, Hanford

May 6, 1948

The Marshaw Chemical Co.
1945 East 97th Street
Cleveland 6, Ohio

Attention: Mr. Fred Becker

Gentlemen:

The last set of Rochester type film badges which we received back from you were found to be seriously contaminated. It was not possible to re-use them so they have been replaced with Hanford style film badges, which were sent to you. Therefore, your three sets of film badges will consist of two Rochester type and one Hanford type for the time being. As soon as possible all your film badges will be replaced with the Hanford type.

Very truly yours,

H. D. LeVine
Assistant to the Chief
Radiological Laboratory

CC: J. Cherry, Medical Division
Radiological Laboratory (2)
Mail & Records

Summary
Final Determination
Unclassified
By J. R. Parson
Date 1963
F. F. Brown

~~RESTRICTED~~

OFFICE→	Rad. Lab.	AIR MAIL
SURNAME→	DL	
DATE→	5/6/48	

1110362

This document consists of 17 pages
of copies, series A

SECRET

M. Eisenbud

May 4, 1948

R. E. Hayden

NYO FILE NO. 701 Harshaw Chem. Co.

Health Survey of Harshaw Chemical Company - Area C.

During the period beginning 4-6-48 to 4-15-48 radiation readings were made and dust samples collected, the former by A. Breslin and R. Hayden, the latter mostly by R. Sterling and D. Phillips.

Dust samples were collected on a 3/4 in. diameter filter disk using the standard Fischer pump in use by the Health Group of the Office of New York Directed Operations. The usual rate of flow was 0.5 cfm for from one to thirty minutes depending on the estimated dust concentration.

Radiation readings were made with ionization chambers provided by Mr. Braestrup of the Radiological Laboratory. The gamma readings were made with bakelite cylindrical chambers with a diameter of 120.5 mm, a length of 218.5 mm and a 3.25 mm wall.

Beta readings were made with a 1 quart cardboard cylinder whose wall is about .040" thick. All chambers were calibrated with a radium source. Chambers were charged each night and left about 16 hours to check for discharge due to contamination or electrical leakage. Maximum leakage was 0.5 divisions per hour representing 0.1 mr/hr for gamma chambers and 0.3 mrep/hr for the beta and gamma chamber. This would represent the background of the office in which the chambers were left, since it had a background considerably higher than normal, producing about 0.2 mrep/hr on Victoreen 263 N.O. at desk height.

Thirty-seven points were chosen about the plant and marked so that readings could be repeated and reference made by number. These numbers were continued up to 55 for dust samples. All points are marked on drawing number 1177-131A provided by The Harshaw Chemical Company who have a duplicate with points marked. Readings were made with the base of the chamber on the floor and with the center of the chamber elevated 43".

#1 is about 5' from the SE corner of the green salt loading rack.

#2 is about 2' south of the scale used to weigh the green salt. Considerable material is spilled in this area.

#3 is about 2' from the SW corner of the west loading hood.

#4 is about 2' in front of a work bench at the west end of the loading hoods.

#5 is the superintendent's office.

Cy #2a & 1A / destroyed 5/21/51 G.C.

OFFICE → Med
SURNAME → Hayden
DATE → 5/12/48

SECRET

1110363

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical
Company - Area C.

#6 is in the center of the first reactor hood from the east end, 1' in front of the receivers. Green salt is often spilled here and ash has been spilled in the past.

#7 same as #6 but in the second hood from the east end.

#8 same as #6 for the third hood.

#9 - 1' in front of the panel board across the corridor from #7.

#10-1' in front of the panel board across the corridor from #8.

#11 same as #6 for fourth hood.

#12 same as #6 for fifth hood.

#13 - 1' in front of the panel board from #14.

#14 same as #6 for sixth hood.

#15 same as #6 for seventh hood.

#16 same as #6 for eighth hood.

#17 - 1' in front of panel board across the corridor from #16.

#18 - same as #6 for ninth hood.

#19 - same as #6 for tenth hood.

#20 - 1' in front of vat used to clean reactor tubes.

#21 - 1' in front of bench used to blow out lines with steam and air.

#22 - 1' in front of bench used to repair copper lines.

#23 - front of drinking fountain.

#24 - base of dry ice trap.

25 - outside door to ash collector room.

Classification Review
Final Determination
Unclassified
By J. R. Patton
Date 1980
P. F. Brown

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

#26 - inside ash collector room in front of first bin.

#27 - inside ash collector room in front of second bin.

#28 - west end of service corridor. No active material is brought to this area intentionally.

#29 - center of service corridor, no active material.

#30 - inside curb surrounding product container clean-out area.

#31 - corridor of brown oxide storage area.

#32 - corridor of brown oxide storage area before the locker room was installed.

#33 - front of reactor rack at reactor #54.

#34 - front center of reactor tube cooling rack.

#35, 36, and 37 - roof south of tube rack. Ash from a faulty collector blows over the roof at times.

Job Breakdown

I. Brown oxide area, second level.

1. Load trays with brown oxide and place them in reactor tubes.
2. Place the reactor tube in the furnace.
3. Remove the reactor tube from the furnace and place it in the cooling rack.
4. Purge the reactor tube with nitrogen.
5. Unload the green salt from the trays to 300 lb. drums.
6. Clean up with vacuum cleaners once per shift and with water once per week.

II. Green salt area, first level.

1. Load trays and clean lines (blow out plugs from lines with steam and dry with air).

M. Eisenbud

May 4, 1948

.. E. Hayden

Health Survey of Harshaw Chemical
Company - Area C.

2. Replace receivers and connect lines.

   (a) Empty ash, day shift only.

3. Clean up, wash with water, etc. on day shift only.
4. Clean liners once per week.

III. Redistill the hexafloride.

1. Heat the receivers with steam and collect in receivers cooled by flowing tap water. Gas not collected goes into a common manifold for a battery of stills and is passed through a dry ice trap.

Operation Time Relationship

I. 1 & 3. Two men per shift spend about 6 hours per shift loading trays, placing them in the tubes, removing them from the tubes and emptying the contents into containers. Two of the remaining hours are spent in the general area in front of the loading hoods. An estimated one hour per shift is divided among the locker room, shower room and lunch room.

2 & 3. The tube handlers spend about seven hours per shift in the general area in moving the tubes from the loading rack to the reactors, from the reactors to the cooling rack and hence to the loading rack. These operations require about 3 hours with the remaining four hours used in repairing valves and other equipment and reading instruments. About one hour is consumed in the locker room, shower room and lunch room.

II. 1 & 2. Nine men per shift on the day shift spend about 2 hours in the hood area, in two groups each doing 5 hoods at 25 minutes per hood for a total of two hours. The tray loading occurs only on the day shift, the other shifts of 9 men each spending about one hour each under the hoods manipulating lines and receivers.

3. The day shift spends about twenty minutes per man in a general clean-up.

III. Two men per shift spend about six hours per day in the general still area, one hour in levels comparable to those in the control aisle and one hour divided among the lunch, locker and shower rooms.

[redacted]

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

Table I shows the results of the radiation measurements. The gamma to beta ratio was found by subtracting the gamma reading obtained with the bakelite chambers from the reading obtained on the cardboard chamber (calibrated with a radium source) and dividing the gamma reading by the remainder.

Table II shows the average radiation for particular areas and the average of several dust samples taken in each area.

Table III shows the computed exposure in various areas as determined by the product of estimated number of hours spent in the area and the average intensity of radiation. Where time is spent in more than one area the figure given represents the sum of the exposures received in all areas. The quantity of dust inhaled each day was determined on the basis of breathing ten cubic meters of air per shift and spending given times in different areas with different average dust concentrations, the given figure representing the sum accumulated in all areas.

Table IV is a list of the dust samples taken. The preferred limit of uranium dust is 70 d/m/m^3 or 50 ugU/m^3 or 500 ugU/day. Dust samples were counted on a flat plate alpha chamber at the New York Radiological Laboratory.

Determination
Classified
R. Patton
1960
Date P. F. Brown

OFFICE→
SURNAME→ [redacted]
DATE→

1110367

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

TABLE I

POSITION	γ 4" FLOOR	γ 43" FLOOR	β+γ 4" FLOOR	β+γ 43" FLOOR	γ/β 4" FLOOR	γ/β 43" FLOOR
1	0.54	0.3	7.1	2.9	.082	.115
2	2.2	1.0	47.8	7.0	.048	.167
3	0.91	0.5	5.6	4.6	.195	.122
4	0.9	0.4	3.9	5.1	.300	.085
5	B. C. SUPERINTENDENT'S OFFICE					
6	6.8	2.4	91.4	22.6	.107	.119
7	7.4	2.4	46.4	29.0	.190	.080
8	4.8	2.1	78.3	10.4	.065	.288
9	3.6	0.6	34.8	6.8	.115	.087
10	2.4	0.7	13.0	5.2	.227	.154
11	7.7	1.9	47.9	27.1	.192	.076
12	19.2	3.0	147.9	21.6	.150	.162
13	4.0	1.4	35.1	7.0	.137	.250
14	7.6	2.8	87.0	27.8	.099	.112
15	10.4	3.2	113.1	34.8	.098	.101
16	15.5	4.0	139.2	31.3	.126	.146
17	3.7	1.0	28.7	11.1	.148	.100
18	10.8	2.4	139.2	36.7	.088	.072
19	6.7	3.6	60.9	30.6	.113	.133
20	10.4	6.4	87.0	41.8	.136	.191
21	11.5	6.7	187.1	113.0	.066	.084
22	3.12	1.2	17.4	7.3	.218	.196
23	1.5	3.4	20.9	5.2	.077	1.88
24	8.5	2.2	85.3	17.1	.110	.148
25	7.7	7.7	23.6	13.9	.642	1.24
26	108.2 *	36.0	407.2	85.3	.367	.720
27	76.8	48.0	339.3	87.0	.292	1.24
28	0.8	0.04	2.8	0.9	.400	.047
29	1.3	0.12	3.8	0.9	.380	.133
30	7.5	1.04	30.6	8.8	.323	.134
31	0.9	1.2	5.7	3.9	.187	.445
32	1.3	1.8	3.5 ****	1.4 ****	-	-
33	0.4	0.48	1.4	1.7	.400	.282
34	1.2	0.4	5.8	2.3	.261	.210

By J. H. Brown
Date 1950
P. F. Brown

OFFICE→
SURNAME→
DATE→

1110368

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

(Continued)

POSITION	4" FLOOR	43" FLOOR	4" FLOOR	43" FLOOR	4" FLOOR	43" FLOOR
35	1.6 **	0.64 ***	14.8 **	1.74 ***	.122	.580
36	2.9	0.06	28.9	5.2	.111	.087
37	NOT ACCESSIBLE DUE TO WATER ON ROOF					
				Average	.199	.298

* Pile of ash in room.
** 20 ft. east of #35.1 in. of water over 35.
*** Roof covered with 1 in. of water.
**** 20 ft. south of #32.

Special R... Final De... Unclas... By ... Date ... R. F. Brown

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

TABLE II

Average Radiation and Dust Intensity by Areas.

Area	mr/hr 4"	mr/hr 43"	mrep/hr 4"	mrep/hr 43"	d/m/m³	DUST ugU/m³
Hoods 1st level	9.9	2.8	96.1	27.1	21,000	15,000
Control Aisle 1st Level	3.4	0.93	27.4	7.5	175	125
Hoods 2nd level	1.14	.55	13.6	4.9	18,000	13,000
General 2nd level	0.95	0.97	4.1	2.3	260	185
Still Area	B.G.	B.G.	B.G.	B.G.	1,300	930
Recovery Room	-	-	-	-	36,400	26,000
Line Cleaning area	11.5	8.7	17.4	7.3	1,000	700
Lunch, Locker, Shower rooms	B.G.	B.G.	B.G.	B.G.	150	100
Office	B.G.	B.G.	B.G.	B.G.	160	110

Page Daily Exposure

MEN	1st Level Hoods	1st Level Aisle	2nd Level Hoods	2nd Level Gen'l.	Line Cleaning	Locker Lunch Etc.	Office	Still Area	Recovery room	Mult. of 500 ug/day	Total Day
1st Level Loaders											
etc. 9 on day shift.											
Time (hr.)	2	5		.2	.5	.6		.2			328
mrep/day at 4"	190	137		.8	-	-		-			92.5
mrep/day 43"	54	57		1.5		-		-			
				.5							
ug/dust	37,500	781		46		75		232		77.3	38,654
1st Level Night											
shifts, 9 each											
Time (hr)	1	3				0					
mrep/day @ 4"	95	82.2				-					177.2
mrep/day @ 43"	27.1	22.5				-					49.6
ug/dust	18,750	469				500				39.4	19,719
Office, 4 men											
Time (hr)		.6		.5	.1	.5	5	.2	.1		1[illegible]
mrep/day @4"		14.4		2.4	1.7	-	-	-	-		[illegible]
mrep/day @43"		4.5		1.4	.7	-	-	-	-		[illegible]
ug/dust		93.8		115.6	87.5	62.5	687.5	232.5		2.6	1297[illegible]
End Level											
Tray loaders											
2 men/shift											
time (hr)			5	2		1					68
mrep/day @4"			68.0	8.2		-					14
mrep/day @43"			9.8	6.6							
ug/dust			81,250	462.5		125				163.7	81,838
End Level, tube											
handlers											
2 men/shift				7		1					29
time (hr)											16
mrep/day @4"				28.7		-					
mrep/day @43"				16.1		-					
ug/dust				1620		125				3.5	1,745

1110371

TABLE III - Average Daily Exposure

MEN	1st Level Hoods	1st Level Aisle	2nd Level Hoods	2nd Level Gen'l.	Line Clean-ing	Locker Lunch Etc.	Office	Still Area	Recovery room	Mult. of 500 ug/day	Total/Day
Still Area											
2 men/shift time		1				1		6			27.4
mrep/day 64"		27.4				-		-			7.5
mrep/day 645"		7.5				-		-			
ug/dust		156				125		6,975		14.5	7,256
Recovery Room											
1 man time		5.5				1			1.5		
mrep/day 64"		151				-			15		166
mrep/day 645"		41				-			7.5		
ug/dust		859				125			48,750	99.5	49,734

Special Approval
Fuel Development Division
Date
By
J. R. Fraser
P. F. Brown

SECRET

1110372

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C

TABLE IV

Date	Number	Description	d/m/m^3	Mult. of Preferred level
4/6/48	H001	G.A. between position 27 and south end switch board.	325	4.65
"	H005	B.Z. same as above. 2 men pulling tubes.	248	3.54
"	H003	G.A. between loading booths and switchboard 5' from booth.	1440	20.6
"	H006	B.Z. at loading booth, 2 men unloading green salt from reactors.	1070	15.3
"	H007	G.A. between reactor 60 and north end of switchboard.	70.5	1.01
"	H008	G.A. in brown oxide storage between N end switchboard and N wall	105	1.5
"	H009	G.A. between reactor hoods 5 & 6 and panelboard.	270	3.86

Special Review
Final Determination
Unclassified
By J. R. Patton
Date P. F. Brown

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C

TABLE IV

DUST SAMPLES

Date	No.	Description	d/m/m³	Multiple of Preferred Level
4/7/48	H010	Position 6 - no work	25.9	0.37
"	H011	" 8 - loading tray	42,600	608.6
"	H012	" 8 - loading, bringing up, receives jackets and receivers	3,560	50.9
"	H013	Position 8 - tightening couplings after loading	852	11.9
"	H014	Position 11 - removing receivers, opening furnaces, loading trays	55,500	792.9
"	H015	Position 11 - General	388	5.4
"	H016	Small invincible vacuum cleaner exhaust	168	2.4
4/8/48	H017	G.A. Sample - position D-1, check no activity	51.8	0.74
"	H018	Pulling tubes #33 thru 37, position D-1, turning an HF-check	243.	3.5
"	HO-19	Positions D-2 & D-3 - unloading green salt from trays to cans	37,000	529.
"	H020	Positions D-3 - loading brown oxide on trays	33,400	477.
"	H021	G.A. Sample - Position D-4 No activity - check	66	0.94
"	H022	G.A. Sample - Position 5, no activity	98.8	1.41
"	H023	Position 8 - hood 7, 2 men uncapping furnaces and moving receivers	17,240	247.0
"	H024	Position 8 - hood 7, 2 men loading trays with green salt	20,400	292.
"	H025	Hood #6, removing reactor valves from furnaces	40,200	575.
"	H026	Positions 26 & 27, inside dust collector room, men collecting ash	2,710	38.7
"	H027	Positions 26 & 27 (check on above no activity)	1,820	26.0
"	H028	2 ft. from doorway on roof near stairway (GA)	97	13.9
"	H029	Same as above (check)	50.5	0.72
"	H030	Control	-	-
"	H031	Position 9, General air sample	125	1.79
"	H032	" 8, " " "	78.2	1.13

Special ... Final ... Unclassified

OFFICE→
SURNAME→
DATE→

[redacted]

By ... Date ...

1110374

[redacted]

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

TABLE IV

DUST SAMPLES (Continued)

Date	No.	Description	γ/m^3	Multiple of Preferred Level
4/8/48	H033	Position 35, General Air Sample (windy)	35.7	0.51
"	H034	" 36, " " " "	69.9	1.0
"	H035	" 37, " " " "	29.9	0.43
"	H036	" 21, " " " "	85.4	1.2
"	H037	" 15, " " "	7.76	0.11
"	H038	Front of still room while changing receivers	323	4.6
"	H039	Across control aisle from position 11 General Air sample	31.7	0.45
"	H040	Position 25, General Air Sample	38.8	0.55
4/9/48	H041	G.A. Supt's. Office, 10 min. after sweeping	166	2.37
"	H042	Cell repair room, center G.A.	29.1	0.41
"	H043	G.A. upstairs while vacuum cleaning floors	136	1.95
"	H044	G.A. Laboratory, without hood running, center of room	10.8	0.15
"	H045	G.A. west, men's locker room, 6 men [illegible]	58.2	0.83

Special Review
Determination
Declassified
By J R
Date

[redacted]

OFFICE→
SURNAME→
DATE→

1110375

M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

Date	No.	Description	d/m/m³	Mult. of Preferred Level
4-9-48	H046	Control	-	-
4-12-48	H047	Position 48, shower room, no one in room	245	3.47
"	H048	Position 49. Lunch room-no one there.	78.8	1.12
"	H049	Position 51. Shower room - no one present.	202	2.89
"	H050	Position 50, lunch room - no one present.	153	2.19
"	H051	Position 52 - outside locker room.	127	1.81
"	H052	Position 52 - inside locker room, no one present.	56.9	0.81
"	H053	Position 51, green salt storage.	51.2	0.73
"	H054	Position 53, recovery room, no one working.	56.2	0.80
"	H055	Position 54, center of recovery room.	0	-
"	H056	Position 44, near dock in still room.	64.6	0.92
"	H057	Back of position 43, between hot boxes.	136	1.94
4-13-48	H058	Unstopping a plugged line to a receiver, position 8	326	4.66
"	H059	8 trays of green salt unloaded into drum, position D-3	13,400	191.5
"	H060	Loaded 12 trays with brown oxide and into reactors, position 2.	7,550	108.
4-14-48	H061	First part of cycle in removing an ice-trap between positions 8 & 11, B.Z.	1,420	21.5
"	H062	2nd part of cycle of removing and replacing ice-trap, complete cycle, 13 min.	3,010	43.0
"	H063	Control	-	-
"	H064	Position 41, B.Z., unloading 2 trays of PPT.waste in recovery room (1 man) B.Z.	16,800	240.
"	H065	Same as above, B.Z., 3 trays of PPT.waste. Entire cycle of 32 trays about 1½ hrs.	19,600	280.

Special Review and Determination Unclassified
By
Date

OFFICE→
SURNAME→
DATE→
1110376

[redacted]

M. Eisenbud May 4, 1948

H. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

Date	No.	Description	d/m/m³	Mult. of Preferred Level
4-14-48	H066	Supt's. Office, 4 men working - position 47 middle of room, G.A.	296	4.2
"	H067	Same as above. G.A.	132	1.9
"	H068	B.Z. position 45, loading and unloading receivers in still, complete cycle 15 minutes, 2 men, done 6 times perhr. shift B.Z.	4,650	65.4
"	H069	G.A. position 42, 3 men weighing, capping, trucking shippers, doors opening and closing	136	1.9
"	H070	B.Z. position 21, steaming lines and blowing, 2 lines blown	646	9.2
"	H071	G.A. position 21, 6 lines steamed, door to recovery room open, 4 ft. from bench	1,470	21.0
4-16-48	H072	Position 6, B.Z. removing receivers; opening furnaces, removing trays, loading salts, 2 men 5 of 7 min.	4,910	70.1
"	H073	Position 6, B.Z. one man loading 2 trays of green salt from can	44,000	629.
"	H074	B.Z. position 6, one man removing reactor valves from furnaces.	2,960	42.3
"	H075	G.A. position 47, Supt's. Office, 2 to 6 men in and out of office during period	116	1.66
"	H076	G.A. position 46. Inside guard house, guard seated, door open, clear bright day.	95	1.35
"	H077	G.A. position 46. Outside guard house. Clear bright day, east side of gate.	55.4	0.79
"	H078	B.Z. position D-3, opening furnaces, unloading green salt - 2 men.	10,950.	156.

[redacted]

OFFICE→
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DATE→

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M. Eisenbud

May 4, 1948

R. J. Hayden

Health Survey of Harshaw Chemical Company - Area C.

Date	No.	Description	d/m/m³	Mult. of Preferred Level
4-16-48	H079	B.Z. position D-3 loading 6 trays of green salt trays to cans.	17,100	244.
"	H080	B.Z. position 3, loading brown oxide (12 trays) can to trays & placing in furnace.	3,170	45.3
"	H081	G.A. position 5D, lunch room, table height. 2 to 6 men in and out, smoking, etc., window open.	95.1	1.35
"	H082	G.A. position 51, locker room middle of room, 6 ft. high, windows closed.	155	2.22
"	H083	G.A. position 51, shower room, 6 ft. high, near west wall, no activity, windows closed.	178	2.54
"	H084	G.A. position 52, locker room, 5 ft. high, middle of room, no activity.	106	1.5
"	H085	G.A. position 49, lunch room, windows closed, 4 ft. high, no activity.	202	2.89
"	H086	G.A. position 48, locker room, window open., 6 ft. high, no activity.	175	2.5
"	H087	G.A. position 48, shower room, window open, 5 ft. high, no activity.	200	2.86
"	H088	Control	-	-

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Unclassified
By J. R. Patton
Date: 1980
P. F. Brown

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M. Eisenbud

May 4, 1948

R. E. Hayden

Health Survey of Harshaw Chemical Company - Area C.

Discussion

Direct Radiation:

Some men, particularly those who work under the first level reactor hoods, should receive greater than 100 mrep/day by a factor of up to two on each working day. If any of these same men spend appreciable time in the ash collector bin room or near the trays of ash this figure may easily be increased by orders of magnitude. The principle source of radiation, except for obvious cases of trays or reactors seems to be the floor. The highest intensities are under the hoods near the reactors, in the ash bin room, in front of the bench used to clean lines, in front of the liner cleaning tank and in the receiver cleaning area. The gamma radiation appears to be from UX_1 (.092 Mev) and UX_2 (.802 Mev). A half value layer for the latter would be about 2 inches of concrete. It appears that it would be best to eliminate the source of floor contamination before trying to take steps to reduce the radiation level, lest any covering became contaminated to intensities comparable to those at present.

Dust:

The table indicates that all groups of men inhale from 2 to 150 times the maximum preferred quantity of uranium and that this is repeated each working day.

The principle sources of dust are the loading hoods on the second level, reactor hoods on the first level, drying tray dumping region and the tube blow-out and cleaning area. A large percentage of this could be eliminated by careful handling methods if each individual could be depended upon to take extreme precautions. However, the probability of reducing dust to a satisfactory level by these methods alone is very remote. Hence the best solution seems to be to devise methods of handling the material which would eliminate the present manual methods, to blow lines only into a manifold to the dust collecting system, provide a hood for handling the precipitate drying pans and eliminate accumulated dust on the floors and fixtures so it cannot become air-borne.

Distribution:
1- Eisenbud
2-4- Hayden
5. Files
6- reading file

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Final Determination
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Date 1980

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1110379

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DHsbE

NYO FILE NO. 701 Harshaw

April 30, 1948

Mr. C. E. Parks, Vice-President
The Harshaw Chemical Company
1945 East 97th Street
Cleveland 6, Ohio

Dear Mr. Parks:

Our Medical Division has recently completed a survey of your plant which was designed to evaluate the extent of hazardous exposure to external radiation and dust.

The complete details of this survey are now being assembled and a full report, including complete recommendations for long range control of environmental hazards, will soon be submitted to you. However, the data which have thus far been assembled, are sufficiently alarming to warrant my writing this letter to you for the purpose of initiating immediate action on one phase of the dust control problem which appears to be of extreme urgency.

The present method of operating the first floor reactors exposes a total of 18 men to approximately 50 times the acceptable concentration of uranium dust and fume. Superimposed on this hazardous exposure is a simultaneous exposure to the dust of UX_1 and UX_2. Data have been collected for the purpose of fully evaluating this latter problem, but it will be several days before we can accurately state the degree of exposure to these isotopes. This additional exposure will undoubtedly increase considerably our estimate of the hazard of these employees.

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Final Determination
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By
Date

On April 29, we were visited by Mr. Pine and Mr. Long, who discussed, with members of our Production and Medical Divisions, a method for mechanizing the operation of the first floor reactors. This method appears to be mechanically feasible and promises a considerable reduction in the degree of exposure to the operators of these reactors. Green salt would be loaded into a hopper on the second floor, whence it would be conveyed to a mechanical feeder for the first floor reactors. Ash would be removed pneumatically without hazard to the operators. This will immediately eliminate the need for trays, and will require the eventual replacement of the present sleeves with

OFFICE →	Eisenbud	Wolf	Belmore	Kelley
SURNAME →	Medical	Medical	Production	Manager
DATE →	4/30/48	4/30	~~CONFIDENTIAL~~ 4/30	5/3

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Mr. C. S. Parke
April 30, 1948

nickel liners. I will not go into the details of this method, as you are no doubt already familiar with the proposal.

Although the method appears to be feasible mechanically, some development work will be necessary. We appreciate the present heavy load on your research and development personnel, and it therefore seems advisable to utilize the services of a specialist in mechanical handling equipment for the development and construction of this system. We will be able to make funds available for this project under the research provisions of Contract Number W 7405 eng-276, in accordance with the discussion held with representatives of your office.

This letter authorizes the expenditure of such funds as will be necessary to obtain the engineering designs and cost estimate for the system. Our office wishes to have the opportunity to review these plans before authorizing actual construction and installation.

We attach considerable importance to this project and it is our recommendation that immediate action be taken with a view towards completing development and installation within the next four months.

Very truly yours,

W. E. Kelley
Manager

Distribution:
Cy 1 - Addressee
2 - Mr. Taussig, Cleveland Sub-Office
3 - Medical files
4 - Classified Files

U. S. Atomic Energy Commission
New York Operations
New York 16, N. Y.

50 & copy to Mr. Taussig DISPATCHED for forwarding, copy for Taussig's retention.

OFFICE→
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DATE→
1110381

~~RESTRICTED~~

LeVine:vj

DR:HDL

April 26, 1948

701 Harshaw

Harshaw Chemical Company
P. O. Box 2246
Brooklyn Station
Cleveland, Ohio

Attention: Mr. J. R. Sterling

Gentlemen:

Enclosed is the report on your dust samples, Numbers H-001, H-003, H-005 to H-030 inclusive, H-047 to H-088 inclusive.

Very truly yours,

H. D. LeVine
Assistant to the Chief
Radiological Laboratory

Encl.:
Report on dust samples

CC: R. Hayden, Medical

Special Review
Final Determination
Unclassified
By J. R. Patton
Date 1980
P. F. Brown

Office: Radiological Laboratory
Surname: HDL
Date: April 9, 1948

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REPORT ON HARSHAW DUST SAMPLES

Sample No.	Alpha $\frac{d/m}{m^3}$
H-001	325
H-003	1,440
H-005	248
H-006	1,070
H-007	70.5
H-008	105
H-009	270
H-010	25.9
H-011	42,600
H-012	3,560
H-013	832
H-014	55,500
H-015	388
H-016	168
H-017	51.8
H-018	243
H-019	37,000
H-020	33,400
H-021	66
H-022	98.8
H-023	17,240
H-024	20,400
H-025	40,200
H-026	2,710
H-027	1,820
H-028	97
H-029	50.5
H-030	Control
H-047	243
H-048	78.8
H-049	202
H-050	153
H-051	127
H-052	56.9
H-053	51.2
H-054	56.2
H-055	0
H-056	64.6
H-057	136
H-058	326
H-059	13,400
H-060	7,550
H-061	1,420
H-062	3,010
H-063	Control

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Final Determination
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Date: 1949
P. F. Brow

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Sample No.	Alpha $\frac{d/m}{m^3}$
H-064	16,800
H-065	19,600
H-066	296
H-067	132
H-068	4,650
H-069	136
H-070	646
H-071	1,470
H-072	4,910
H-073	44,000
H-074	2,960
H-075	116
H-076	95
H-077	55.4
H-078	10,950
H-079	17,100
H-080	3,170
H-081	93.1
H-082	155
H-083	178
H-084	106
H-085	202
H-086	175
H-087	200
H-088	Control

NOTE: Background at 3 c/m

Rereview
Unclas
R Patton
By
Date

1110384

This document consists of 2 page(s)
Number 1 of 4 copies, Series A

THE HARSHAW CHEMICAL COMPANY

This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, U.S.C. 50:31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

C. B. PARKE
PRESIDENT

CLEVELAND 6, OHIO

February 3, 1948

Harshaw

Mr. W. E. Kelley
United States Atomic Energy Commission
New York Operations Office
P. O. Box 42, Murray Hill Station
New York 16, N. Y.

CONFIDENTIAL

Dear Bill:

Many thanks for your letter of January 28th, which I believe clears up quite a few points and should smooth out some of our difficulties.

I don't know that I am competent to comment on the various medical points raised, but I do think that most of the hazards are caused by dust or poor housekeeping.

It seems to me that possibly we should repeat the air sampling, or at least spot check it. You and Dr. Wolf are drawing conclusions on samples taken last August, when conditions were probably at their worst. We have progressed considerably with our housekeeping methods since then, and though things are not yet perfect, they are vastly improved.

I agree absolutely with you that we should not take any unnecessary risks. I also believe that you are in accord that we should not dig up ghosts.

To clarify Bob Turner's status, which you thought was a bit ambiguous in my letter of the 19th, Bob is attached to the Personnel Department. He need not have any direct responsibility for the health program in Area C. I do think, however, that his advice is worth while and it may be necessary for us to ask him to perform some specific functions, such as making tests and maybe using instruments which we at the present time have no other personnel qualified to operate. Mr. P. R. Pine is shortly coming back into the Manufacturing Department as an assistant to me, and I have asked him to follow through on the safety matters in Area C. We would not ask him to do any of the direct work but to see that it is followed, and that the proper personnel was assigned to the job. It would be up to Mr. Pine to ask Mr. Turner's opinion, or to ask him to undertake a specific investigation.

The direct work in Area C has been assigned to Mr. D. Phillips and he will temporarily act on this problem until it is necessary for him to take over the supervision of the brown oxide operation. This

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is going to be some months and we are at the present time looking for another man for safety work, principally in Area C. We want to select the proper person and have him trained so that he can take over when Mr. Phillips would have to concern himself with brown oxide production. I do not say that Mr. Phillips is a specialist on safety work or housekeeping, but he was in Y-12 at Oak Ridge and from my discussions with him I would say that he has better than a passing knowledge of what is required. I do think he will quite adequately fill the gap temporarily caused by Mr. Lazarus' resignation.

I also note your comments regarding hazards such as HF, and this has concerned us quite a bit. We have, however, made quite extensive surveys and are, with one or two exceptions in non-working areas, within the tolerance allowed by the State. This refers to our whole plant and not specifically to Area C.

Our plant hourly safety committee has been quite concerned about our HF problems, and I believe are exaggerating them, as I believe the hazards in Area C have been exaggerated. I speak somewhat as a layman, but we have manufactured HF and fluorides for forty years. It is only lately that any occupational disease have been suspected. Two of our men are reputed to have Fluorosis, but nobody can tell us how this has harmed them. In fact, the inference by some doctors is that they have been benefited. Certainly the situation is nothing to get alarmed about.

Again, many thanks for your letter.

Yours very truly,

C. S. Parke,
Vice President.

CSP/mk

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ARCB-1 KY

January 28, 1948

Mr. C. S. Parks, Vice-President
The Harshaw Chemical Company
1945 East 97th Street
Cleveland 6, Ohio

701 - Harshaw Chem.

Dear Charlie:

As you know, we also have been giving considerable thought to evaluating the hazards at Area C. It seemed to us that the only way to do this was the collection of data, specifically air analyses and radiation measurements. It is easy to understand that extensive sample taking of this character may upset employees and cause them to wonder about their health and safety. It was for this reason that Dr. Wolf spoke to your employees at Area C at the request of Mr. Nichols to explain to them that all of our records indicated that no unusual hazard existed, but that the Harshaw Company, with the assistance of the Atomic Energy Commission, was proceeding more intensively in an effort to uncover any possibility of danger. We still believe that this is a logical method of approach although of course in each case the timing is important.

A serious difficulty in the program of evaluation is the absence of long range experience with individuals exposed as they are in Area C. A critical question is the possibility of pulmonary damage due to insoluble uranium salts deposited in the lung. In the absence of experience on exposed individuals, one must substitute knowledge of animal experimentation and general knowledge of the effects of radiation. As far as we are able to tell at the moment, the most popular figure for the amount of material which can be tolerated on a long-time basis in inhaled air is 50 micrograms per cubic meter. We have a group of 67 air samples taken in the plant in various places August 18-22, 1947; 34 of these are above 1,000 micrograms per cubic meter and 17 of these are above 10,000 micrograms per cubic meter. Admittedly, this is really not quantitative evidence, but it is obvious that concentrations considerably above the preferred level are common in Area C. I think you probably will agree that wearing of respirators is not a good answer to this problem.

Another possible hazard is the exposure to external beta and gamma radiation from the materials handled. Again, the most popular figure on the project for preferred levels on the basis of long-continued exposure is 100 milliroentgens per day of either gamma or beta radiation. I think you are aware

Wolf/tk

OFFICE→	Medical	Manager		
SURNAME→	BPW	Kelly	~~CONFIDENTIAL~~	
DATE→	1/28/48	1/27		

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By J R Patton
Date P F Brown

1110387

Mr. Parks

January 23, 1948

that the so-called ash is highly radioactive and special methods of handling and storing have been in practice in the case of this material for some time. In addition to this, however, we have a group of 165 readings taken by Mr. Turner and Mr. Teague at many areas in the plant. Again, I do not claim that these data are quantitative, but approximately 60 of these are above this figure and most of the low figures are in non-work areas. It might be well to point out in this connection that the Manhattan District during the war recommended 500 milliroentgens per day for beta radiation and that the reports you receive from Rochester on the film badges in terms of fractions of tolerance are based on this figure. Up to the present time, the Commission has not indicated what these levels should be on a pocket-time basis, but the original statement that 100 milliroentgens total beta and gamma per day is the most commonly used figure on the project is correct.

As the result of obvious lack of control of dust in Area C, many other accessory preferred limits in use elsewhere are regularly exceeded. For example, smear tests for radioactive materials have a preferred level of zero alpha counts per minute and 200 beta or gamma counts per minute. These are regularly exceeded in the operating areas. Smear tests in lunch rooms and locker rooms in Area C are in the hundreds (alpha).

On three separate occasions, urine analyses on a group of individuals working in Area C were collected to determine the amount of uranium being excreted. The only group that everyone is convinced is uncontaminated is the last group of six individuals. One of these shows 17 micrograms per liter, two were 100 plus, one 200 plus, and two, 300 plus micrograms per liter. Again, the significance of these figures will have to be evaluated in light of future experience, but these levels are as high or higher than those known to exist in any group of employed personnel anywhere in the Commission.

I believe it fair to state from the survey figures quoted above that if present popular opinion has any basis at all, a distinct hazard does exist in Area C. I suspect that the question of how serious a hazard exists is a matter of individual opinion. Unfortunately, as you are well understand, the Commission is very vulnerable when faced with problems of this type and must be conservative in protective measures when radioactive materials are involved. It is correct to state, too, that medical opinion in these matters is becoming more conservative, and in some respects, more pessimistic about the eventual mass outcome. It is extremely difficult to give complete assurance of the adequacy of

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By J R Patton
Date p 1 Blow

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protective measures to those unfamiliar with the details of the problems unless it can be demonstrated that the amounts of material involved and the levels of radiation in question are practically negligible.

As regards channels of responsibility in the Harshaw organization, I am uncertain from your letter whether you consider that Mr. Turner establishes or implements the policies in Area C on health physics problems. We believe that it is necessary to assign someone from your office to Area C with direct responsibility to follow through on a protective program. It is not clear from your letter whether such an individual would make recommendations to Mr. Turner or to your office directly.

As regards the health and safety organization of the New York Directed Operations Office of the Atomic Energy Commission, I should like to make it clear that recommendations requiring action on your part come to you officially only through myself or Mr. Belmore. Naturally, there will be discussion of problems between individuals in your group with line or advisory responsibility and similar individuals in the New York Directed Operations. As a result of such discussions, written or verbal, Harshaw personnel may on their own accord make recommendations to you. In this office, Dr. Wolf functions as my chief advisor on these problems. Your suggestion that recommendations sent to you from this office be fairly clear as to how necessary funds will be forthcoming appears reasonable, and probably can be followed in many cases.

As we discussed over the telephone, we are not concerned with the title that an individual assigned to follow through on the protective program is given. We believe that the dust problem is the most serious difficulty and that the radiation problem is second. From your letter, it is not clear what qualifications Mr. Phillips has which might be helpful to him in the problem of dust control or in survey work. It certainly would be helpful if the individual chosen for this job had such experience. There is no doubt in my mind that this job requires a very level headed man who will go about his business without exaggerating or minimizing the difficulties.

I should like to repeat my feeling expressed to you previously, that a generally satisfactory plant will not be possible without redesigning reactors and revising handling procedures. I still believe that this is the fundamental problem and one on which Harshaw Company should proceed rapidly.

All of the above comments on your letter apply to the special problems involved in Area C work. There are, of course, other hazards which might

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By J. R. Patton
Date: 1980
P. F. Brown

1110389

Mr. Parks

January 28, 1948

be commented upon, such as EF, which require separate study.

I appreciate your frank discussion of this matter and hope that I have satisfactorily answered the several questions which you put to me.

Very truly yours,

W. E. Kelley
Manager

cc: Mr. Belmore

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By
Date P. F. BRAY

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THE MARSHAW CHEMICAL COMPANY

COPY

December 1, 1947

SECRET

NYO FILE NO
701 Marshaw - ~~Secret~~

U. S. Atomic Energy Commission
New York Operations Office
P. O. Box 30, Harvey Hill Station
New York 30, New York

Attention: Mr. I. S. Wolf

Subject: Harold Richard Carroll

Dear Mr. Wolf:

Attached hereto you will find a report on the work done by the subject employee in Area "G" on an experimental basis.

The urine was collected Tuesday morning, November 18, and forwarded to Mr. Kovland at Rochester for analysis and the x-ray plates were transmitted to Mr. Kovland on Wednesday, November 26. This will complete the experiment since we find it necessary to place Carroll on other work.

During the period covered by this report, the subject employee wore the same uniform the entire time and took a shower at the end of each shift, as well as before going to bed.

We trust the information secured during this two week period may be of some value to you.

Very truly yours,

THE MARSHAW CHEMICAL COMPANY

Robert A. H. Turner
SAFETY DIRECTOR

RAHTjms

Encl.

Extra copy enclosed

[illegible] W. [illegible]

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By [illegible] F. Brown

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Second Week in Area "G"

November 17, 1957 thru November 21, 1957

SECRET

Monday, November 17, 1957

Absent from work due to sickness.

Tuesday, November 18, 1957

8:45 A.M. Entered Area "G"

10 Minutes - Dressing Room
5 " - In the Office
3 " - Dressing Room
37 " - Worked on Set 16

1. Disconnected pipes. 2. Pulled trays from oven. 3. Vacuumed ash from trays. 4. Charged trays with green salt. 5. Loaded trays into oven. 6. Connected pipes.

23 " - Office
45 " - Work on Set 16 & 17

Set 16: Disconnected pipes; pulled trays from oven; loaded trays with green salt; put trays in oven; closed ovens; connected pipes.
Set 17: Disconnected pipes; pulled trays from oven; vacuumed ash; charged with green salt and loaded into oven; connected pipes.

26 " - Outside to millman and dressing room.
12 " - Office
20 " - Dressing room for lunch
2 " - Office
47 " - Worked on Set 16

1. Disconnected pipes. 2. Changed receivers. 3. Steamed pipes. 4. Covered ovens. 5. Connected pipes.

27 " - Office
38 " - Worked on Set 15

1. Disconnected pipes. 2. Changed receivers. 3. Steamed pipes. 4. Covered ovens. 5. Put receivers in place.

4 " - Carried laundry from guard shack to office.
7 " - Office
4 " - Walked from office to set 4 and back.
[illegible] " - Office
[illegible] " - Dressing room
12 " - Guard shack
[illegible] " - Office
22 " - Dressing room changing clothes & shower

4:15 P.M. Left Area "G"

Wednesday, November 19, 1957

8:03 A.M. Entered Area "G"

10 Minutes - Dressing room
5 " - Office
25 " - Worked on Set 1 (located in extreme S.W. end of building)

1. Changed receivers. 2. Steamed lines. 3. Put receivers in place.

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Unclassified
By J. F. Patton
Date 1980
P. F. Brown

SECRET

SECRET

12 Minutes - Office
66 " - Worked on Set 2 & Set 3

Set 2: Disconnected pipes; changed receivers; connected pipes.

Set 3: Disconnected pipes; pulled covers & trays; vacuumed ash; filled trays with green salt & loaded into oven; connected pipes.

30 " - Worked on Set 4

1. Disconnected pipes. 2. Pulled covers. 3. Vacuumed ash. 4. Charged with green salt. 5. Loaded trays into oven. 6. Connected pipes.

60 " - Dressing room and out to milkman.
30 " - Office
30 " - Set 5:

1. Disconnected pipes. 2. Took covers off & pulled trays. 3. Vacuumed ash. 4. Charged with green salt & loaded into oven. 5. Connected pipes.

15 " - Office
30 " - Set 6

1. Disconnected pipes. 2. Took trays from oven. 3. Charged with green salt. 4. Put trays into oven. 5. Placed receivers. 6. Connected pipes.

[illegible] " - Office
[illegible] " - Dressing Room
[illegible] " - Office
[illegible] " - Changed ups

Swept and hosed floor in front of ovens, set 1 thru set 7.

20 " - Phone by fountain
15 " - Dressing room
[illegible] " - Office
[illegible] " - Dressing room for shower and changed clothes
4:20 P.M. Left Area "G".

Thursday, November [illegible], 1952

8:00 A.M. Entered Area "G"

10 Minutes - Dressing room
[illegible] " - Office
[illegible] " - Worked on Set 1 and dry ice trap.

Set 1: Disconnected pipes; pulled tray from oven and loaded with green salt; vacuumed ash; put trays into oven; connected pipes.
Set 1a trap: Changed receiver.

20 " - Office
[illegible] " - Set 2, 3, & 4

Set 2: Disconnected pipes; removed trays from oven; vacuumed ash; charged with green salt; loaded into oven; connected pipes.
Set 3: Changed receivers; steamed pipes; connected pipes.
Set 4: Disconnected pipes; changed receivers; steamed lines; connected pipes.

[illegible] " - Outside to milkman and dressing room
[illegible] " - Outside to HF building
[illegible] " - Office
[illegible] " - Dressing room
[illegible] " - Worked Set 5
[illegible] " - Phone in office
[illegible] " - Worked on set 5 again

Special Review
Final Determination
Unclassified
By: J R Patton
Date: 1980
P F Brown

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1110393

1. Disconnected pipes. 2. Pulled trays from oven. 3. Vacuumed ash. 4. Filled trays with green salt. (Called to phone). 5. Connected pipes.

27 Minutes - Office
[illegible] - Worked Set 6

1. Disconnected pipes. 2. Opened ovens. 3. Pulled trays from oven. 4. Loaded with green salt. 5. Put into oven. 6. Connected pipes.

[illegible] " - Office
[illegible] " - To lab. to clean mask
[illegible] " - Office
[illegible] " - Worked Set 7 and tried out new mask:
1. Disconnected pipes. 2. Pulled trays. 3. Loaded with green salt. 4. Put trays into oven. 5. Connected pipes.

New mask kept fumes and gases out but it was harder to breathe.

[illegible] " - Office
[illegible] " - Dressing Room
4:15 P.M. Left Area "G"

<u>Friday, November [illegible], 1[illegible]</u>
7:5[illegible] P.M. Entered Area "G"

10 Minutes - Dressing room
7 " - Office
15 " - Worked on Set 1
1. Took covers off. 2. Unloaded trays from oven. 3. Charged trays with green salt. 4. Put trays in oven.
[illegible] " - Office
[illegible] " - Loaded oven #3 in Set 1; worked on Set 2.
<u>Oven 3 in Set 1</u>: Pulled trays & loaded with green salt.
<u>Set 2</u>: Disconnected pipes; took covers off ovens; pulled trays from ovens; loaded green salt and then into oven; placed receivers; connected pipes.
[illegible] " - Office
[illegible] " - Worked on Set 3 and 4
<u>Set 3</u>: Disconnected pipes; removed covers; pulled trays from oven; loaded with green salt and put back into oven; connected pipes.
<u>Set 4</u>: Disconnected pipes; unloaded trays from ovens; charged with green salt; put into oven; placed receivers; connected pipes.
[illegible] " - Office
[illegible] " - Dressing room
[illegible] " - Office
[illegible] " - Worked on Set 5
1. Disconnected pipes. 2. Changed receivers. 3. Covered ovens. 4. Connected pipes.
[illegible] " - Office
[illegible] " - Walked up to front office.
[illegible] " - 2nd floor near lab. to hear lecture
[illegible] " - Office
[illegible] " - HP building
[illegible] " - Office
[illegible] " - In front office
[illegible] " - To walk back to Area "G"

Special Review
Final Determination
Unclassified
By: J. R. Patton
Date: 1980
P. F. Bigger

1110394

SECRET

25 Minutes - Dressing room to change clothes
12 " - Office
4:20 P.M. Left Area "G"

Lau Turner

Special Rereview
Final Determination
Unclassified
By R. Patton
Date 1980
P. F. Brown

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ATOMIC ENERGY COMMISSION

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1110395

[redacted]

4 of copies series

GLR:smh

AECPR-12 NY

November 18, 1947

TO FILE NO. 701 Harshaw Chem

Mr. K. E. Long
The Harshaw Chemical Company
1945 East 97th Street
Cleveland 6, Ohio

Dear Mr. Long:

Subject: AREA O - SECURITY OF MEDICAL AND HAZARD INFORMATION

In accordance with your request, there is inclosed a draft of the information that may be given new and old employees concerning the nature of Area O operations. You will note that the draft is based on all recommended and contemplated medical and safety recommendations being in effect. This draft may be revised as you see fit to meet present conditions, and as new installations are made to eliminate hazards, a new bulletin could be issued covering such changes.

Very truly yours,

F. M. Belmore
Chief, Production Division

Incl.:
Draft

cc: W. A. Taussig, Cleveland Sub-Office w/cy of incl.
Dr. Wolf w/cy of incl.

Cyl- Addressee
2-Taussig
3-Dr.Wolf
4-files
5-reading file

U. S. ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS
NEW YORK 16, N. Y.
NOV 19 1947
DISPATCHED

5546

1110396

SECURITY INFORMATION TO BE GIVEN EMPLOYEES OF AREA 6

Because of the nature of the material manufactured in Area 6 many safety rules, regulations and protective devices have been set up to protect the health of all our employees. The Company will furnish all of your working garments and you are required to wear them at all times in the work areas. It is necessary for you to wash your hands before eating or smoking and take a shower at the end of the work period before putting on your own clothes. You will be fully instructed as to these safety regulations by your Foreman and the Safety Engineer when you actually start to work. We wish to make it clear that these safety rules are compulsory and must be faithfully observed by you as a condition of your employment at this plant.

Area 6 is operated for the purpose of producing for the United States Atomic Energy Commission a special material which is slightly radioactive. When we say slightly radioactive it does not mean that you will be working with radium or that the radioactivity is the kind that we read about in the papers describing the after effects of the atomic bomb explosion at Hiroshima, Nagasaki and Bikini. The material processed has radioactive properties that are so slight that special instruments must be used to detect it and there will be no danger to any one's health due to radiation while working in this plant providing reasonable pre-[illegible] are taken. [illegible] given, you this information is to be sure that there will be no misunderstanding on your part about the work being done here since it is likely that you may hear the word radiation or radioactivity mentioned. We want to be sure that you know that you are in no danger and that there is no cause for fear or worry from this source. We are being super-careful in handling this material so that there can be no possibility whatsoever of any damage produced by the very slight radioactivity of this material.

We also handle material known as hydrofluoric acid. This is a powerful chemical that will cause a severe burn if it gets on your skin. Our safety rules provide for the wearing of safety goggles, rubber clothing, face shields and other protective equipment, as your Foreman directs, where this material is handled.

The protective equipment and the plant safety rules are provided for your well being. The health and safety of employees are carefully supervised by a Health Physicist and a Safety Engineer who are experts in their jobs. We want to be sure that you understand the reason for our health and safety program since we must depend on your cooperation.

1110397

Under the law this information affecting the national defense of the United States within the meaning of the Espionage Act, U.S.C. 50:31 and 32, its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

This document consists of 1 page(s)
Number 2 of 5 copies, Series

THE HARSHAW CHEMICAL COMPANY

COPY

SECRET

701

701 Harshaw

September 26, 1 947.

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolf

Dear Sir:

Transmitted herewith is report on radiation readings, Numbers 566 to and including Number 913 taken with the Victoreen 263 survey meter as requested by you.

It is expected that this phase of the Health Program will be completed Thursday night, September 25.

Just as soon as the layout of sample locations is completed we will forward a copy to you.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Safety Director.

RANTurner/mm
cc/WATaussig
Extra copy of letter & rep. enclosed.

SECRET

1110398

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947.

This document consists of 4 pages
Number 2 of 5 copies, Series a

By	Samp.	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr.
Turner	566	9/15	6:00PM	70	Ptly/cldy Wd:SebySW	1000' se. of W. 14th & Harvard on west side Jennings Rd.	2	None	.4-
"	567	"	6:10 "	"	"	1000' " "	"	100' W of centr Jennings	"
"	568	"	6:20 "	"	"	1000' " "	"	200' " "	"
"	569	"	6:30 "	"	"	1000' " "	"	300' " "	"
"	570	"	6:40 "	"	"	1000' " "	"	100' E. " "	.4
"	571	"	6:50 "	"	"	1000' " "	"	200' " " "	"
"	572	"	7:00 "	"	"	1000' " "	"	300' " " "	"
"	573	"	7:10 "	"	"	100' frm centr Jennings Rd on Valley Rd west, No. side.	"	None	.7-
"	574	"	7:20 "	"	"	200' " "	"	100' So. of centr ValleyRd	"
"	575	"	7:30 "	"	"	100' " "	"	200' " " "	.6-
"	576	"	7:40 "	"	"	100' " "	"	300' " " "	"
"	577	"	7:50 "	"	"	100' " "	"	100' No. " "	.7+
"	578	"	8:00 "	"	"	200' " "	"	None.	"
"	579	"	8:10 "	"	"	200' " "	"	100' No. " "	.7+
"	580	"	8:20 "	"	"	200' " "	"	100' So. " "	.7
"	581	"	8:30 "	"	"	200' " "	"	200' " " "	.7-
"	582	"	8:40 "	68	"	200' " "	"	300' " " "	.6-
"	583	"	8:50 "	"	"	200'		400' " " "	.6-
"	584	"	9:00 "	"	"	300'		None.	.5

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This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, U.S.C. 50:31 and 32 its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947.

SECRET

By	Samp.	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	585	9/15	9:10PM	68	Ptly/cldy Wd:So/SW	300' frm centr of Jennings Rd, So/SW on Valley Rd W., no side.	2	100' So. centr ValleyRd.	.5
"	586	"	9:20"	"	"	300' " "	"	200' " "	.5-
"	587	"	9:30"	"	"	300' " "	"	300' " "	"
"	588	"	9:40"	"	"	300' " "	"	400' " "	.4-
"	589	"	9:50"	"	"	300' " "	"	100' no. " "	.4-
"	590	"	10:00"	"	"	300' " "	"	200' " " "	.4-
"	591	"	10:10"	"	"	400' " "	"	None.	.4-
"	592	"	10:20"	"	"	400' " "	"	100' So. " "	.4-
"	593	"	10:30"	"	"	400' " "	"	200' " " "	.4-
"	594	"	10:40"	"	"	400' " "	"	300' " " "	.4-
"	595	"	10:50"	"	"	400' " "	"	400' " " "	.3+
"	596	"	11:00"	"	"	400' " "	"	100' No. " "	.4+
"	597	"	11:10"	"	"	500' " "	"	None.	.4
"	598	"	11:20"	"	"	500' " "	"	100' So. " "	.4-
"	599	"	11:30"	"	"	500' " "	"	200' " " "	"
"	600	"	11:40"	63	"	500' " "	"	300' " " "	.3
"	601	"	11:50"	"	"	500' " "	"	400' " " "	.3
"	602	"	12:00"	"	"	600' " "	"	None.	.3
"	603	9/16	12:10AM	"	"	600' " "	"	100' So. " "	.3

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1110400

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

September 23, 1947

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	604	9/16	12:20AM	63	Ptly/cldy Wd:So/SW	600' frm centr Jennings on Valley Rd W. - no. side.	2	200' So. of centrValleyRd.	.3-
"	605	"	12:30 "	"	"	600' " "	"	300' " "	"
"	606	"	12:40 "	62	"	600' " "	"	400' " "	"
"	607	"	12:50 "	"	"	700' " "	"	None.	"
"	608	"	1:00 "	"	"	700' " "	"	100' So. "	"
"	609	"	1:10 "	"	"	700' " "	"	200' " "	"
"	610	"	1:20 "	"	"	700' " "	"	300' " "	"
"	611	"	1:30 "	"	"	700' " "	"	400' " "	"
"	612	"	1:40 "	"	"	700' " "	"	100' No. "	.3
"	613	"	1:50 "	"	"	700' " "	"	200' " "	"
"	614	"	2:00 "	"	"	800' " "	"	None.	"
"	615	"	6:00PM	70	Clear Wd:SoE.	800' " "	"	100' So. "	.3-
"	616	"	6:10 "	"	"	800' " "	"	200' " "	.3-
"	617	"	6:20 "	"	"	800' " "	"	300' " "	.2
"	618	"	6:30 "	"	"	800' " "	"	400' " "	"
"	619	"	6:40 "	"	"	800' " "	"	100' No. "	.3-
"	620	"	6:50 "	"	"	800' " "	"	200' " "	.3-
"	621	"	7:00 "	"	"	900' " "	"	None.	.2
"	622	"	7:10 "	"	"	900' " "	"	100' So. "	"
"	623	"	7:20 "	"	"	900' " "	"	200' " "	"

SECRET

1110401

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947.

SECRET

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr.
Turner	624	9/16	7:30 PM	70	Clear Wd: SeN.	900' from centr Jennings on Valley Rd. W. - no. side.	2	100' so. of centr ValleyRd.	.2-
"	625	"	7:40 "	56	"	900' " "	"	400' " "	.2-
"	626	"	7:50 "	"	"	900' " "	"	100' No. "	.2
"	627	"	8:00 "	"	"	900' " "	"	200' " "	.2
"	628	"	8:10 "	"	"	900' " "	"	300' " "	.2+
"	629	"	8:20 "	"	"	1000' " "	"	None.	.2-
"	630	"	8:30 "	"	"	1000' " "	"	100' " "	.2-
"	631	"	8:40 "	"	"	1000' " "	"	200' " "	.2-
"	632	"	8:50 "	"	"	1000' " "	"	300' " "	.2-
"	633	"	9:00 "	"	"	1000' " "	"	400' " "	.2-
"	634	"	9:10 "	55	"	1000' " "	"	100' " "	.2-
"	635	"	9:20 "	"	"	1000' " "	"	200' " "	.2-
"	636	"	9:30 "	"	"	1000' " "	"	300' " "	.2-
"	637	"	9:40 "	"	"	100' No. centr Harvard, East side, Jennings Road.	"	None.	1.0
"	638	"	9:50 "	"	"	100' " "	"	100' E. of centr Jennings	1.0
"	639	"	10:00"	"	"	100' " "	"	200' " "	1.0+
"	640	"	10:10"	"	"	100' " "	"	300' " "	1.0+
"	641	"	10:20"	"	"	100' " "	"	100' W. "	1.0
"	642	"	10:30"	"	"	100' " "	"	200' " "	1.0-

1110402

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947.

SECRET

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	643	9/16	10:40PM	55	Clear Wd:Sel.	100' No. of centr Harvard, east side, Jennings Rd.	2	300' West of centrJennings	.9
"	644	"	10:50 "	"	"	100' " "	"	400' " "	.9
"	645	"	11:00 "	"	"	200' " "	"	None.	1.0
"	646	"	11:10 "	"	"	200' " "	"	100' E. "	1.0-
"	647	"	11:20 "	"	"	200' " "	"	200' E. "	1.0
"	648	"	11:30 "	"	"	200' " "	"	300' E. "	1.0
"	649	"	11:40 "	"	"	200' " "	"	100' W. "	1.0
"	650	"	11:50 "	"	"	200' " "	"	200' " "	1.0-
"	651	"	12:00 "	"	"	200' " "	"	300' " "	.9
"	652	9/17	12:10 AM	"	"	200' " "	"	400' " "	.9
"	653	"	12:20 "	"	"	300' " "	"	None.	1.0
"	654	"	12:30 "	"	"	300' " "	"	100' W. "	1.0
"	655	"	12:40 "	54	"	300' " "	"	200' W. "	1.0-
"	656	"	12:50 "	"	"	300' " "	"	300' " "	1.0-
"	657	"	1:00 "	"	"	300' " "	"	400' " "	1.0-
"	658	"	1:10 "	"	"	300' " "	"	100' E. "	1.0
"	659	"	1:20 "	"	"	400' " "	"	None	1.0
"	660	"	1:30 "	"	"	400' " "	"	100' W. "	1.0
"	661	"	1:40 "	"	"	400' " "	"	200' W. "	1.0-

1110403

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RADIATION READINGS TAKEN WITH VICTOREEN 263 • OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947.

SECRET

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	662	9/17	1:50 AM	54	Clear Wd:SoE	400' No. of centr Harvard east side Jennings Rd.	2	300' W. of centr Jennings	1.0-
"	663	"	2:00 "	"	"	400' " "	"	400' " " "	1.0-
"	664	"	6:00 PM	70	Hazy Wd: SoE.	400' " "	"	100' E. " "	1.0
"	665	"	6:10 "	"	"	400' " "	"	200' " " "	1.0+
"	666	"	6:20 "	"	"	400' " "	"	300' " " "	1.0+
"	667	"	6:30 "	"	"	500' " "	"	None.	1.0
"	668	"	6:40 "	"	"	500' " "	"	100' W. " "	1.0
"	669	"	6:50 "	"	"	500' " "	"	200' W. " "	1.0-
"	670	"	7:00 "	"	"	500' " "	"	300' " " "	1.0-
"	671	"	7:10 "	"	"	500' " "	"	400' " " "	1.0-
"	672	"	7:20 "	"	"	500' " "	"	100' E. " "	1.0
"	673	"	7:30 "	"	"	500' " "	"	200' " " "	1.0+
"	674	"	7:40 "	59	"	500' " "	"	300' " " "	1.0+
"	675	"	7:50 "	"	"	600' " "	"	None.	1.0
"	676	"	8:00 "	"	"	600' "	"	100' W. " "	1.0
"	677	"	8:10 "	"	"	600' " "	"	200' " " "	1.0-
"	678	"	8:20 "	"	"	600' " "	"	300' " " "	1.0-
"	679	"	8:30 "	"	"	600' " "	"	400' " " "	.9-
"	680	"	8:40 "	57	"	600'	"	100' E. " "	1.0

SECRET

404 111

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio.

September 23, 1947

SECRET

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	681	9/17	8:50 PM	57	Hazy Wd: SsE.	600' No. of centr Harvard, east side Jennings Rd.	2	200' E. of centr Jennings	1.0+
"	682	"	9:00 "	"	"	600' " "	"	300' " " "	1.0+
"	683	"	9:10 "	"	"	700' " "	"	None.	1.0
"	684	"	9:20 "	"	"	700' " "	"	100' E. " "	1.0
"	685	"	9:30 "	"	"	700' " "	"	200' " " "	1.0+
"	686	"	9:40 "	"	"	700' " "	"	300' " " "	1.0+
"	687	"	9:50 "	"	"	700' " "	"	100' W. " "	1.0
"	688	"	10:00"	"	"	700' " "	"	200' " " "	.9
"	689	"	10:10"	"	"	700' " "	"	300' " " "	.8
"	690	"	10:20"	"	"	800' " "	"	None.	.9+
"	691	"	10:30 "	"	"	800' " "	"	100' E. " "	.9+
"	692	"	10:40"	63	"	800' " "	"	200' E. " "	.9-
"	693	"	10:50"	"	"	800' " "	"	300' " "	.8-
"	694	"	11:00"	"	"	800' " "	"	100' W. " "	.9+
"	695	"	11:10"	63	"	800' " "	"	200' " " "	.9
"	696	"	11:20"	"	"	800' " "	"	300' " " "	.8
"	697	"	11:30"	"	"	800' " "	"	400' " " "	.7+
"	698	"	11:40"	"	"	900' " "	"	None.	.8

1110405

SECRET

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947

SECRET

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	699	9/17	11:50PM	63	Hazy Wind:SoE.	900' No. of centr of Harvard east side Jennings Rd.	2	100' E. of centr Jennings	.5
"	700	9/18	12:00 "	"	"	900' " "	"	200' E. " "	.5+
"	701	"	12:10 "	"	"	900' " "	"	300' " " "	.5+
"	702	"	12:20AM	"	"	900' " "	"	100' W. " "	.8
"	703	"	12:30"	"	"	900' " "	"	200' " " "	.7-
"	704	"	12:40 "	60	"	900' " "	"	300' " " "	.6
"	705	"	12:50 "	"	"	1000' " "	"	None.	.5-
"	706	"	1:00 "	"	"	1000' " "	"	100' W. " "	.5-
"	707	"	1:00 "	"	"	1000' " "	"	200' " " "	.5-
"	708	"	1:20 "	"	"	1000' " "	"	300' " " "	.5+
"	709	"	1:30 "	"	"	1000' " "	"	400' " " "	.4
"	710	"	1:40 "	57	"	1000' " "	"	100' E. " "	.5-
"	711	"	1:50 "	"	"	1000' " "	"	200' E. " "	.6
"	712	"	2:00 "	"	"	1000' " "	"	300' E. " "	.6+
"	713	"	6:00 "	73	Hazy Wd:SeSoE.	1100' " "	"	None	.6
"	714	"	6:10 "	"	"	1100' " "	"	100' W. " "	.6-
"	715	"	6:20 "	"	"	1100' " "	"	200' W. " "	.5-
"	716	"	6:30 "	"	"	1100' " "	"	300' W. " "	.4-
"	717	"	6:40 "	"	"	1100' " "	"	400' W. " "	.3+

SECRET

1110406

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

September 23, 1947.

SECRET

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	718	9/18	6:50 PM	73	Hazy Wd: SeSeE.	1100' No. of centr Harvard east side Jennings.	2	100' E. of centr Jennings.	.6
"	719	"	7:00 "	"	"	1100' " "	"	200' " " "	.6+
"	720	"	7:10 "	"	"	1100' " "	"	300' " " "	.7
"	721	"	7:20 "	"	"	1200' " "	"	None.	.5+
"	722	"	7:30 "	"	"	1200' " "	"	100' W. " "	.5
"	723	"	7:40 "	70	"	1200' " "	"	200' " " "	.4+
"	724	"	7:50 "	"	"	1200' " "	"	300' " " "	.4
"	725	"	8:00 "	"	"	1200' " "	"	400' " " "	.3-
"	726	"	8:10 "	"	"	1200' " "	"	100' E. " "	.6+
"	727	"	8:20 "	"	"	1200' " "	"	200' " " "	.7
"	728	"	8:30 "	"	"	1200' " "	"	300' " " "	.7+
"	729	"	8:40 "	69	"	1200' " "	"	400' " " "	.7+
"	730	"	8:50 "	"	"	1300' " "	"	None.	.5-
"	731	"	9:00 "	"	"	1300' " "	"	100' W. " "	.4+
"	732	"	9:10 "	"	"	1300' " "	"	200' " " "	.4-
"	733	"	9:20 "	"	"	1300' " "	"	300' " " "	.3-
"	734	"	9:30 "	66	"	1300' " "	"	400' " " "	.2+
"	735	"	9:40 "	"	"	1300' " "	"	100' E. " "	.7
"	736	"	9:50 "	"	"	1300' " "	"	200' E. " "	.7+

1110407

SECRET

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

[redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	737	9/18	10:00 PM	66	Hazy Wd:SSE	1300' No. of centr Harvard east side Jennings Rd.	2	300' E. of centr Jennings	.7+
"	738	"	10:10 "	"	"	1300' " "	"	400' " "	.8
"	739	"	10:20 "	"	"	1300' " "	"	500' " "	.8+
"	740	"	10:30 "	"	"	1300' " "	"	600' " "	.9
"	741	"	10:40 "	65	"	1400' " "	"	None.	.6
"	742	"	10:50 "	"	"	1400' " "	"	100' W. " "	.6
"	743	"	11:00 "	"	"	1400' " "	"	200' " "	.5-
"	744	"	11:10 "	"	"	1400' " "	"	300' " "	.4-
"	745	"	11:20 "	"	"	1400' " "	"	400' " "	.3-
"	746	"	11:30 "	"	"	1400' " "	"	500' " "	.2-
"	747	"	11:40 "	64	"	1400' " "	"	100' E. " "	.6+
"	748	"	11:50 "	"	"	1500' " "	"	None.	.5
"	749	9/19	12:00 "	"	"	1500' " "	"	100' W. " "	.5-
"	750	"	12:10 AM	"	"	1500' " "	"	200' " "	.4
"	751	"	12:20 "	"	"	1500' " "	"	300' " "	.3
"	752	"	12:30 "	"	"	1500' " "	"	400' " "	.2
"	753	"	12:40 "	63	"	1500' " "	"	500' " "	.2-
"	754	"	12:50 "	"	"	1600' " "	"	None.	.5-
"	755	"	1:00 "	"	"	1600' " "	"	100' W. " "	.4

[redacted]

1110408

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

September 23, 1947.

[redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	756	9/19	1:10 AM	63	Hazy Wd:SSE	1600' No. of centr Harvard east side Jennings Rd.	2	200' W. centr of Jennings	.3-
"	757	"	1:20 "	"	"	1600' " "	"	300' " "	.2-
"	758	"	1:30 "	"	"	1600' " "	"	400' " "	.1+
"	759	"	1:40 "	62	"	1600' " "	"	500' " "	.1
"	760	"	1:50 "	"	"	1600' " "	"	100' E. " "	.6
"	761	"	2:00 "	"	"	1600' " "	"	200' " "	.6+
"	762	"	6:00 "	73	Hazy Wd:Calm	1600' " "	"	300' " "	.7
"	763	"	6:10 "	"	"	1600' " "	"	400' " "	.8
"	764	"	6:20 "	"	"	1600' " "	"	500' " "	.8
"	765	"	6:30 "	"	"	1700' " "	"	None.	.3+
"	766	"	6:40 "	"	"	1700' " "	"	100' W. " "	.3-
"	767	"	6:50 "	"	"	1700' " "	"	200' " "	.2
"	768	"	7:00 "	"	"	1700' " "	"	300' " "	.2-
"	769	"	7:10 "	"	"	1700' " "	"	400' " "	.2-
"	770	"	7:20 "	"	"	1700' " "	"	500' " "	.1
"	771	"	7:30 "	"	"	1700' " "	"	100' E. " "	.6-
"	772	"	7:40 "	71	"	1700' " "	"	200' " "	.5
"	773	"	7:50 "	"	"	1700' " "	"	300' " "	.5
"	774	"	8:00 "	"	"	1700' " "	"	400' " "	.5+

[redacted]

1110409

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

September 23, 1947.

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	775	9/19	8:10 PM	71	Hazy Wd:Calm	1800' No. of centr Harvard east side Jennings Rd.	2	None	.3
"	776	"	8:20 "	"	"	1800' " "	"	100' W. of centr Jennings	.3-
"	777	"	8:30 "	"	"	1800' " "	"	200' " "	.2-
"	778	"	8:40 "	70	"	1800' " "	"	300' " "	.2-
"	779	"	8:50 "	"	"	1800' " "	"	400' " "	.1
"	780	"	9:00 "	"	"	1800' " "	"	500' " "	.1
"	781	"	9:10 "	"	"	1800' " "	"	100' E. " "	.4
"	782	"	9:20 "	"	"	1900' " "	"	None.	.2+
"	783	"	9:30 "	"	"	1900' " "	"	100' W. " "	.2+
"	784	"	9:40 "	69	"	1900' " "	"	200' " "	.2
"	785	"	9:50 "	"	"	1900' " "	"	300' " "	.2
"	786	"	10:00"	"	"	1900' " "	"	400' " "	.1
"	787	"	10:10"	"	"	1900' " "	"	500' " "	.1-
"	788	"	10:20"	"	"	1900' " "	"	100' E. " "	.3-
"	789	"	10:30"	"	"	2000' " "	"	None.	.2
"	790	"	10:40"	"	"	2000' " "	"	100' W. " "	.2-
"	791	"	10:50"	"	"	2000' " "	"	200' " "	.2-
"	792	"	11:00"	"	"	2000' [redacted]	"	300' " "	.1
"	793	"	11:10"	"	"	2000'	"	400' " "	.1

0 0 4 0 0 1

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947.

[redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	794	9/19	11:20 PM	69	Hazy Wd:SW	2000' No. of centr Harvard east side Jennings Rd.	2	500' W. of centr Jennings	.1-
"	795	"	11:30 "	"	"	2000' " "	"	100' E. " "	.3
"	796	"	11:40 "	"	"	2100' " "	"	None	.2-
"	797	"	11:50 "	"	"	2100' " "	"	100' W. " "	.2-
"	798	9/20	12:00	"	"	2100' " "	"	200' " "	.1+
"	799	"	12:10 "	"	"	2100' " "	"	300' " "	.1
"	800	"	12:20 "	"	"	2100' " "	"	400' " "	.1-
"	801	"	12:30 "	"	"	2100' " "	"	500' " "	.1-
"	802	"	12:40 "	68	"	2100' " "	"	100' E. " "	.2-
"	803	"	12:50 "	"	"	2100' " "	"	200' " "	.2-
"	804	"	1:00 AM	"	"	2100' " "	"	300' " "	.2-
"	805	"	1:10 "	"	"	2100' " "	"	400' " "	.2
"	806	"	1:20 "	"	"	2100' " "	"	500' " "	.1+
"	807	"	1:30 "	"	"	2200' " "	"	None.	.2-
"	808	"	1:40 "	"	"	2200' " "	"	100' W. " "	.2-
"	809	"	8:00 "	"	(Ptly/cldy	2200' " "	"	200' " "	.1
"	810	"	8:10 "	"	(Light Fog (Wd:SSW	2200' " "	"	300' " "	.1
"	811	"	8:20 "	"	"	2200' " "	"	400' " "	.1-
"	812	"	8:30 "	"	"	2200' " "	"	500' " "	.1-
"	813	"	8:40 "	"	"	2200' [redacted]	"	100' E. " "	.2-

Brown

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF PLANT AREA

September 23, 1947. [redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	814	9/20	8:50 AM	68	Ptly/cldy Light Fog Wd:SSW	2200' No. of centr Harvard east side Jennings Rd.	2	200' E. of centr Jennings	.2-
"	815	"	9:00 "	"	"	2200' " "	"	300' " "	.1
"	816	"	9:10 "	"	"	2200' " "	"	400' " "	.1
"	817	"	9:20 "	"	"	2200' " "	"	500' " "	.1
"	818	"	9:30 "	"	"	2300' " "	"	None.	.2-
"	819	"	9:40 "	69	"	2300' " "	"	100' W. of centr "	.2-
"	820	"	9:50 "	"	"	2300' " "	"	100' E. " "	.2-
"	821	"	10:00"	"	"	2300' " "	"	200' " " "	.1
"	822	"	10:10"	"	"	2300' " "	"	300' " " "	.1
"	823	"	10:20"	"	"	2300' " "	"	400' " " "	.1-
"	824	"	10:30"	"	"	2300' " "	"	500' " " "	.1-
"	825	"	10:40"	73	Clear Wd: SE	2400' " "	"	None.	.2-
"	826	"	10:50"	"	"	2400' " "	"	100' E. " "	.2-
"	827	"	11:00"	"	"	2400' " "	"	200' " " "	.1
"	828	"	11:10"	"	"	2400' " "	"	300' " " "	.1-
"	829	"	11:20"	"	"	2400' " "	"	100' W. " "	.2-
"	830	"	11:30"	"	"	2400' " "	"	200' W. " "	.2-
"	831	"	11:40"	80	Clear Wd: Calm	2400' [redacted]	"	300' " " "	.1

1110412

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947. [redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	832	9/20	11:50AM	80	Clear Wd:Calm	2400' No. of centr Harvard, east side Jennings Rd.	2	400' W. of centr Jennings	.1
"	833	"	12:00"	"	"	2400' " "	"	500' " " "	.1-
"	834	"	12:10"	"	"	2500' " "	"	None.	.2-
"	835	"	12:20"	"	"	2500' " "	"	100' W. " "	.2-
"	836	"	12:30"	"	"	2500' " "	"	200' " " "	.1
"	837	"	12:40"	83	Hazy, wind calm	2500' " "	"	100' E. " "	.2-
"	838	"	12:50"	"	"	2500' " "	"	200' " " "	.2-
"	839	"	1:00 PM	"	"	2500' " "	"	300' " " "	.1-
"	840	"	1:10 "	"	"	2500' " "	"	400' " " "	.1-
"	841	"	1:20 "	"	"	2600' " "	"	None.	.1+
"	842	"	1:30 "	"	"	2600' " "	"	100' W. " "	.1+
"	843	"	1:40 "	87	"	2600' " "	"	200' " " "	.1
"	844	"	1:50 "	"	"	2600' " "	"	300' " " "	.1
"	845	"	2:00 "	"	"	2600' " "	"	400' " " "	.1-
"	846	"	2:10 "	"	"	2600' " "	"	500' " " "	.1-
"	847	"	2:20 "	"	"	2700' " "	"	None.	.1
"	848	"	2:30 "	"	"	2700' " "	"	100' E. " "	.1
"	849	"	2:40 "	85	Hazy, Wd: NNE	2700' [redacted]	"	200' " " "	.1

Source: National Archives and Records Administration, College Park, MD

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

September 23, 1947.

SECRET

The Harshaw Chemical Company
1945 East 97 Street
Cleveland6 , Ohio

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr.
Turner	850	9/20	2:50 PM	83	Hazy Wind NNE	2700' No. of centr of Harvard east side of Jennings Rd.	2	300' E. of centr Jennings	.1-
"	851	"	3:00 "	"	"	2700' " "	"	400' E. " "	.1-
"	852	"	3:10 "	"	"	2700' " "	"	500' E. " "	.1-
"	853	"	3:20 "	"	"	2700' " "	"	100' W. " "	.1-
"	854	"	3:30 "	"	"	2700' " "	"	200' " " "	.1-
"	855	"	3:40 "	83	"	2700' " "	"	300' " " "	.1-
"	856	"	3:50 "	"	"	2700' " "	"	400' " " "	.1-
"	857	"	4:00 "	"	"	2700' " "	"	500' " " "	.1-
"	858	"	4:10 "	"	"	2800' " "	"	None.	.1-
"	859	"	4:20 "	"	"	2800' " "	"	100' E. " "	.1-
"	860	"/21	8:00 AM	79	Ptly/cldy Wind:So.	2800' " "	"	200' " " "	.1
"	861	"	8:10 "	"	"	2800' " "	"	300' " " "	.1
"	862	"	8:20 "	"	"	2800' " "	"	400' " " "	.1
"	863	"	8:30 "	"	"	2800' " "	"	500' " " "	.1-
"	864	"	8:40 "	"	"	2800' " "	"	100' W. " "	.1-
"	865	"	8:50 "	"	"	2800' " "	"	200' W. " "	.1-
"	866	"	9:00 "	"	"	2800' " "	"	300' W. " "	.1-
"	867	"	9:10 "	"	"	2800' " "	"	400' W. " "	.1-
"	868	"	9:20 "	"	"	2800' " "	"	500' W. " "	.1-

SECRET

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

September 23, 1947. [redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	869	9/21	9:30 AM	79	Ptly/cldy Wd:So	2800' No. of centr Harvard east side Jennings Rd.	2	None.	.1-
"	870	"	9:40 "	"	"	2900' " "	"	None.	.1
"	871	"	9:50 "	"	"	2900' " "	"	100' E. of centr Jennings	.1
"	872	"	10:00 "	"	"	2900' " "	"	200' " " "	.1
"	873	"	10:10 "	"	"	2900' " "	"	300' " " "	.1
"	874	"	10:20 "	"	"	2900' " "	"	400' " " "	.1-
"	875	"	10:30 "	"	"	2900' " "	"	500' " " "	.1-
"	876	"	10:40 "	81	Ptly/cldy Wd:So.	2900' " "	"	100' " " "	.1
"	877	"	10:50 "	"	"	2900' " "	"	200' " " "	.1-
"	878	"	11:00 "	"	"	2900' " "	"	300' " " "	.1-
"	879	"	11:10 "	"	"	2900' " "	"	400' " " "	.1-
"	880	"	11:20 "	"	"	2900' " "	"	500' " " "	.1-
"	881	"	11:30 "	"	"	3000' " "	"	None.	.1-
"	882	"	11:40 "	87	"	3000' " "	"	100' E. " "	.1-
"	883	"	11:50 "	"	"	3000' " "	"	200' " " "	.1-
"	884	"	12:00 "	"	"	3000' " "	"	300' " " "	.1-
"	885	"	12:10 PM	"	"	3000' " "	"	400' " " "	.1-
"	886	"	12:20 "	"	"	3000' " "	"	500' " " "	.1-
"	887	"	12:30 "	"	"	3000' [redacted]	"	100' W. " "	.1-
"	888	"	12:40 "	89	"	3000' [redacted] "	"	200' " " "	.1-

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

September 23, 1947. [redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	889	9/21	12:50 PM	89	Ptly/cldy Wd.:30.	3000' No. of centr Harvard east side, Jennings Rd.	2	300' W. of centr Jennings	.1-
"	890	"	1:00 "	"	"	3000' " "	"	400' " " "	.1-
"	891	"	1:10 "	"	"	3000' " "	"	500' " " "	.1-
"	892	"	1:20 "	"	"	3100' " "	"	None.	.1-
"	893	"	1:30 "	"	"	3100' " "	"	100' E. " "	.1-
"	894	"	1:40 "	"	"	3100' " "	"	200' " " "	.1-
"	895	"	1:50 "	"	"	3100' " "	"	300' " " "	.1-
"	896	"	2:00 "	"	"	3100' " "	"	400' " " "	.1-
"	897	"	2:10 "	"	"	3100' " "	"	500' " " "	.1-
"	898	"	2:20 "	"	"	3100' " "	"	100' W. " "	.1-
"	899	"	2:30 "	"	"	3100' " "	"	200' " " "	.1-
"	900	"	2:40 "	"	"	3100' " "	"	300' " " "	.1-
"	901	"	2:50 "	"	"	3100' " "	"	400' " " "	.1-
"	902	"	3:00 "	"	"	3100' " "	"	500' " " "	.1-
"	903	"	3:10 "	"	"	3200' " "	"	None.	.1-
"	904	"	3:20 "	"	"	3200' " "	"	100' W. " "	.1-
"	905	"	3:30 "	"	"	3200' " "	"	200' W. " "	.1-
"	906	"	3:40 "	88	"	3200' [redacted]	"	300' " " "	.1-

1110416

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

September 23, 1947. [redacted]

By	Samp	1947 Date	Time	Temp	Weather	Location	Scale	Remarks	Mr/hr
Turner	907	9/21	3:40 PM	55	Ptly/cldy Wd: So.	3200' No. of centr Harvard east side Jennings	2	400' W. of centr Jennings.	.1-
"	908	"	3:50 "	"	"	3200' " "	"	500' " " "	.1-
"	909	"	4:10 "	"	"	3200' " "	"	100' E. " "	.1-
"	910	"	4:20 "	"	"	3200' " "	"	200' " " "	.1-
"	911	"	4:30 "	"	"	3200' " "	"	300' " " "	.1-
"	912	"	4:40 "	"	"	3200' " "	"	400' " " "	.1-
"	913	"	4:50 "	"	"	3200' " "	"	500' " " "	.1-

RANTurner/mm

1110417

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THE HARSHAW CHEMICAL COMPAN

COPY

Dr. B. S. Wolf

TO Mr. Fred Becker. [redacted]

Harvard-Denison. September 22,

FROM R.A.N. Turner, Safety Director.

MEDICAL HISTORY.

NYC FILE No. 7
Col. Harsh

It is requested that Dr. Zickes be instructed to include as detailed a record as possible of previous radiation exposure, industrial and medical, in the medical history of all new employees.

RANTurner/mm
cc/DrBSWolf
WATaussig

Kaul

This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, U.S.C. 50:31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

[redacted]

TO FILE
SEP 8 1947

1110418

This document contains information affecting [redacted] defense of the [redacted] meaning of the espionage laws [redacted] its transmission [redacted] not to be [redacted] authorized person is prohibited by law.

This [redacted] page [redacted] files

THE HARSHAW CHEMICAL COMPANY

COPY

[redacted]

September 22, 1947.

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

NYO FILE NO ~~[illegible]~~
Zal. Harshaw Chem

Attention: Dr. B. S. Wolf

Subject: Health Physics Equipment

Dear Sir:

To effectively promote a comprehensive Health Physics Program in Area "C", the following additional equipment will be required, as recommended by Mr. W. E. Ray and Mr. O. D. Teague of the Monsanto Chemical Company:

(A) Two hand and foot counters.

(A gm. tube in a fixed shielded geometry plus a scale of 64 will suffice if the four (5) fold outfit as used at Clinton Laboratories is not available.)

(B) Two gm loudspeaker friskers.

(gm probe on a 6 ft. cable with a loudspeaker and 110 volt a.c. power supply for frisking personnel and equipment.)

(C) Three gm survey rate meters.

(All gm tubes should have their walls to pass beta radiation.)

(D) One fluorine sampling unit.

(E) One dust sample collector.

(F) Two long tem dust sample alpha counters.

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[redacted]

(G) Two L. and W. electroscopes.

(Improved model which will permit measurement of alpha.)

(H) Two Zontes.

(I) Two Zonnes.

(J) Two walkie peppies.

(K) Two walkie talkies.

(L) One chamber for gamma counting of beta with Geiger Mueller counter.

(M) One truck or station wagon to transport equipment.

The lack of proper and sufficient equipment and cleared personnel, plus the revisions made in the original program and additional duties, has held this program up considerably. As you know, this program was to operate for a period of six weeks, and the six weeks will end Friday night, September 26. It has been impossible for us to operate 24 hours a day, since we have no vehicle to carry the necessary sampling equipment and portable generator. At the present time we are using a truck owned by The Harshaw Chemical Company. This has proved to be very unsatisfactory since we can't get the truck until 5:30 P.M.

It is requested that the writer be advised if this temporary program of six weeks' duration will be extended beyond September 26.

Your cooperation in securing the equipment listed herein and your comments will be appreciated.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Safety Director.

RANTurner/mm
cc/WAPaussig

[redacted]

1110420

[redacted]

THE HARSHAW CHEMICAL COMPANY

COPY

Dr. B. S. Wolf

TO Mr. Fred Becker. [redacted]

Harvard-Denison.

September 22, 1947.

FROM Mr. R.A.E. Turner, Safety Director.

NYO FILE NO. ~~[redacted]~~ 701 Harshaw Chem

GLOVES.

To comply with a recent request of Dr. B. S. Wolf, Medical Director, U. S. Atomic Energy Commission, to this office over the signature of Mr. W. H. Kelley, it is recommended that gloves contaminated inside with material be removed from service until they have been decontaminated.

To decontaminate the gloves it is recommended that citric acid, alcohol or both be used.

Your cooperation in effecting compliance of the recommendation contained herein and your comments will be appreciated.

RAETurner/mm
cc/BSWolf
WAHumecig

Carl

TO FILE
SEP 2 6 1947

1110421

[redacted]

[redacted]

[redacted]

THE HARSHAW CHEMICAL COMPANY

COPY [redacted]

September 22, 1947.

701 Harshaw
K7401 Eng 49

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolf.

Subject: Active Residue Fluorine Gas from Uranium Tetrafluoride Reactors.

Dear Sir:

This is to advise you that thirty-six (36) pounds of the subject material was delivered to Dr. Joe W. Howland at the University of Rochester, September 13, 1947, as requested in his letter to you under date of August 27, 1947.
OK 7401-Eng-49

If additional material is needed please inform this office and it shall be sent on.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Safety Director.

RANTurner/mm
Extra copy enclosed.
cc/WATamasig

[redacted]

1110422

[redacted]

[redacted]

THE HARSHAW CHEMICAL COMPANY

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

[redacted]

September 22, 1947.

NYO FILE NO. ~~[illegible]~~
701 Harshaw Chem

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolf

Subject: Fingerprint Survey

Dear Sir:

Reference is made to your letter under date of September 4, 1947, in which you transmitted to this office results of fingerprint survey and requested repeat impressions.

We have just received a supply of Kerr wax from Rochester and will immediately take prints of those checked on the list, as well as of those who have been hired since the last survey.

In the future we shall take impressions on all new employees as well as on employees terminated, and forward the prints to Rochester for study.

May I have your comments, please?

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

R A N Turner
Safety Director.

RANTurner/mm
cc/WATaussig
Extra copy enclosed.

1110423

TO FILE
SEP 26 1947

[redacted]

[redacted]

This document consists of 1 page
Number [redacted]

THE [redacted]HAW CHEMICAL COMPANY

COPY

Dr. B. S. Wolf

TO Mr. Fred Becker.

Harvard-Denison. [redacted] September 22, 1947.

FROM R.A.N. Turner, Safety Director.

RESPIRATORS.

N.S FILE NO. 701 Hawkins Chem.

To comply with a recent request of Dr. B. S. Wolf, Medical Director, U. S. Atomic Energy Commission, the following recommendations are submitted for your consideration and appropriate action:

1. Adoption of standard "respirator" procedures.

2. Respirators be worn during any operation that creates dust or fumes.

3. Respirators be kept in clean dust-proof boxes, easily accessible.

4. Filters on respirators be changed daily or after any considerable dust or fume exposure.

5. Respirators be decontaminated and cleaned after each shift or more often as required.

6. Personnel be trained in correct use of respirators.

Respirators can be decontaminated by using citric acid, or alcohol or a mixture of both.

Your cooperation in effecting compliance of the recommendations contained herein and your comments will be appreciated.

RANTurner/mm
cc/BSWolf
WATomasig

By
Date: J. R. Pa
P. F. Bro

[redacted]

TO FILE
SEP 26 1947

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[redacted]

[redacted]

THE HARSHAW CHEMICAL COMPANY

COPY [redacted]

September 18, 1947.

NYC FILE NO ~~[illegible]~~
701 Harshaw Chem

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolf

Dear Sir:

Transmitted herewith is report covering radiation readings, Nos. 365, and including, 565, taken off the Plant Area with Victoreen 263 survey meter.

Very truly yours,

THE HARSHAW CHEMICAL

Safety Director.

RAFTurner/mm
cc/WATaussig
Extra copy of letter and report emiled.

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[redacted]

[redacted]

THE HARSHAW CHEMICAL COMPANY

COPY

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

[redacted]

September 12, 1947.

NYO FILE NO. 701 Harshaw [redacted]

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolf

Dear Sir:

Attached hereto is report of radiation survey readings, Nos. 214-364 inclusive, taken with the Victoreen 263 Meter, off the Plant Area.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Safety Director.

RAETurner/mm
Extra copy of letter & rep. enclosed.
cc/WATamsaig

[redacted]

RECEIVED
SEP 15 1947
NEW YORK OPERATIONS
SHERPA CORP.

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This document contains information affecting the [redacted] within the [redacted] U.S.C. 50;31 and 32 [redacted] transmission or [redacted] to an unauthorized person is prohibited by law.

This [redacted] consists of 1 page
Numb[redacted]

THE HARSHAW CHEMICAL COMPANY

[redacted]

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

September 9, 1947.

NYO FILE No.
701 Harshaw - [redacted]

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolf

Dear Sir:

Enclosed herein you will find report "RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA".

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Robert N. Turner
Safety Director.

RANTurner/mm
cc/WATaussig
Extra copy of letter and report encld.

Special Reviewed
Final Determination
Unclassified
By
Date

[redacted]

1110427

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

September 9, 1947. [redacted]

*Turner & Lazarus.

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L*	19	9/2	6:00 PM	78	Clear	ReadingAve,deadend,centr.	3	.5	3.5	None.
"	20	"	6:10 "	78	"	" ,",25'east"	"	1.5	5.5+	"
"	21	"	6:20 "	78	"	" ,50' " "	"	3.0	7.5	"
"	22	"	6:30 "	76	"	" ,75' " "	"	3.5	8.5	"
"	23	"	6:40 "	76	"	" ,25'So. "	"	1.0	3.5	"
"	24	"	6:50 "	76	"	" ,25'No. "	"	.5	2.0	"
"	25	"	7:00 "	76	"	" ,50'W. "	"	1.0	4.5	"
"	26	"	7:10 "	76	"	" ,100'W "	"	.0	3.0+	"
"	27	"	7:20 "	76	"	13&Redman,center	"	.5	4.0+	"
"	28	"	7:30 "	76	"	Redman,50'W. of center center 13&Redman.	"	.5	3.5	"
"	29	"	7:40 "	76	"	Redman,100'W " " center 13&Redman.	"	.5	3.0	"
"	30	"	7:50 "	76	"	Redman,150'W. of center center 13&Redman.	"	.5	2.0+	"
"	31	"	8:00 "	76	"	Redman,200'W. of center 13&Redman.	"	.5	2.0+	"
"	32	"	8:10 "	76	"	13St.,50' So. of center 13&Redman.	"	.5	2.5	"
"	33	"	8:20 "	76	"	13St.,100'So. of center of 13&Redman.	"	.5	2.5	"
"	34	"	8:30 "	76	"	13St.,150' So. of center of 13&Redman.	"	1.0	3.0	"
"	35	"	8:40"	76	"	13St.,200' [redacted] of 13&Redm[redacted]	"	1.0	3.5	"

[redacted] Number 1 of 5 copies, Series A

[redacted] document contains information affecting the [redacted] national defense of the [redacted] the [redacted] Espionage [redacted] 32 [redacted] transmission of the [redacted] center [redacted] in any manner to an unauthorized person [redacted] prohibited by law.

1110428

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 St.
Cleveland 6, Ohio

SECRET

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Division From	Division To	Remarks
T&L	36	9/2	8:50 PM	76	Clear	13St. 250' So. of centr of 13&Redman.	3	1.5	4.5	None.
"	37	"	9:00 "	"	"	13St.,300'So. of centr of 13&Redman.	"	1.5	5.0	"
"	38	"	9:10 "	"	"	13St.,350'So. of centr of 13&Redman.	"	1.5	4.5	"
"	39	"	9:20 "	"	"	13St.,400' So. of centr of 13&Redman.	"	1.5	5.5	"
"	40	"	9:30 "	"	"	14St.,50'So. of centr. 14&Redman.	"	1.5	4.0	"
"	41	"	9:40 "	"	"	14St.,100'So. of centr. 14&Redman.	"	1.5	4.0	"
"	42	"	9:50 "	"	"	" ,150' "	"	2.0	5.5	"
"	43	"	10:00"	74	"	" ,200' "	"	2.0	6.0	"
"	44	"	10:10"	"	"	" ,250' "	"	2.0	6.0	"
"	45	"	10:20"	"	"	" ,300' "	"	2.0	6.0	"
"	46	"	10:30"	"	"	" ,350' "	"	1.5	4.5	"
"	47	"	10:40"	"	"	" ,400' "	"	1.5	4.0	"
"	48	"	10:50"	"	"	" ,center	"	1.5	3.5	"
"	49	"	11:00 "	"	"	" ,50'W. of center 14&Redman.	"	1.5	3.5	"
"	50	"	11:10 "	"	"	" ,100'W. " "	"	1.5	3.5	"
"	51	"	11:20 "	"	"	" ,150"W. " "	"	1.5	3.5	"
"	52	"	11:30 "	"	"	" ,200'W. " "	"	1.5	3.0	"
"	53	"	11:40 "	"	"	" ,300'W. " "	"	1.5	3.0	"

1110429

SECRET

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947. [redacted]

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Division From	Division To	Remarks
T&L	54	9/2	11:50 PM	74	Clear	14&Redman,400' W. of centr. 14&Redman.	3	1.5	3.5	None.
"	55	"	12:00	"	"	15St.&Redman,center	"	1.0	3.5	"
"	56	"/3	12:10 AM	"	"	" ,100'W. of center 15&Redman.	"	1.0	3.5	"
"	57	"	12:20 "	"	"	" ,200' W. " "	"	1.0	3.5	"
"	58	"	12:30 "	"	"	" ,300' W. " "	"	.5	3.0	"
"	59	"	12:40 "	71	"	" ,400' W. " "	"	.5	3.0	"
"	60	"	12:50 "	"	"	" ,100'E. " "	"	.5	3.0	"
"	61	9/3	1:00 AM	"	"	" ,200'E. " "	"	.5	3.0	"
"	62	"	1:10 "	"	"	" ,300'E. " "	"	.5	2.5	"
"	63	"	1:20 "	"	"	" ,400' " "	"	.5	2.5	"
"	64	"	1:30 "	"	"	" ,500' " "	"	.5	2.0	"
"	65	"	1:40 "	70	"	15&Denison,center.	"	.5	2.0	"
"	66	"	1:50 "	"	"	" ,100'E. " " 15&Denison.	"	1.0	2.5	"
"	67	"	2:00 "	"	"	" ,200'E. " "	"	1.0	2.5	"
"	68	"	6:00 "	80	"	" ,300'E. " "	"	1.0	2.5	"
"	69	"	6:10 "	"	"	" ,400'E. " "	"	1.0	3.0	"
"	70	"	6:20 "	"	Prtly cldy wnd SO.W.	" ,500'E. " "	"	1.0	3.0+	"
"	71	"	6:30 "	"	"	" ,100' no. of centr 15 and [redacted]	"	.5	1.5	"

1110430

[redacted]

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L	72	9/3	6:40 PM	80	Prly cldy Wind-So.W.	15St&Denison,200'No. of center at 15&Denison.	3	.5	1.5	None
"	73	"	6:50 "	"	"	15&Denison,300'No. of center 15&Denison.	"	.5	1.5	"
"	74	"	7:00 "	"	"	" ,100'So. " "	"	1.0	1.5+	"
"	75	"	7:10 "	"	"	" ,200'" " "	"	1.0	1.5+	"
"	76	"	7:20 "	"	"	" ,300'" " "	"	1.5	1.5+	"
"	77	"	7:30 "	"	"	" ,100'West	"	1.5	1.5+	"
"	78	"	7:40 "	79	"	" ,200' "	"	1.5	1.5	"
"	79	"	7:50 "	"	"	" ,300' "	"	1.5	2.0	"
"	80	"	8:00 "	"	"	" ,400' "	"	1.5	2.0	"
"	81	"	8:10 "	"	"	14&Denison , center	"	1.0	2.0	"
"	82	"	8:20 "	"	"	" " ,100'E.of center	"	1.0	2.5	"
"	83	"	8:30 "	"	"	" " ,200'E. " "	"	1.0	2.5	"
"	84	"	8:40 "	"	"	" ",300'E. " "	"	1.0	2.5	"
"	85	"	8:50 "	"	"	" ",400'E. " "	"	1.0	2.5	"
"	86	"	9:00 "	76	"	" ",100'W. " "	"	.5	2.5	"
"	87	"	9:10 "	"	"	" ",200'W. " "	"	.5	3.0	"
"	88	"	9:20 "	"	"	" ",300'W. " "	"	.5	3.0	"
"	89	"	9:30 "	"	"	" ",100'No. " "	"	.0	3.0	"
"	90	"	9:40 "	"	"	" ",200'" " "	"	.0	3.0	"

[redacted]

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Co.
1945 East 97 Street
Cleveland 6, Ohio

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L	91	9/3	9:50 PM	76	Ptly/cldy Wind:So.W.	14&Denison,300'No. of centr.	3	.5	3.0	None.
"	92	"	10:00 "	"	"	" " ,400' " " "	"	.5	3.0	"
"	93	"	10:10 "	"	"	" ",100' So. " "	"	.5	2.0	"
"	94	"	10:20 "	"	"	" " ,200' " " "	"	.5	2.0	"
"	95	"	10:30 "	"	"	" " ,300' " " "	"	.5	2.0	"
"	96	"	10:40 "	75	"	" ",400' " " "	"	.5	2.0	"
"	97	"	10:50 "	"	"	13&Denison,Center	"	.0	2.5	"
"	98	"	11:00 "	"	"	" ,100'E. of center.		.0	2.5	"
"	99	"	11:10 "	"	"	" ,200' " "	"	.5	2.5	"
"	100	"	11:20 "	"	"	" ,100'W. "	"	.5	2.5	"
"	101	"	11:30 "	"	"	" ,200'W. "	"	.5	2.5	"
"	102	"	11:40 "	"	"	" ,300'W. "	"	.5	2.5	"
"	103	"	11:50 "	75	"	" ,100'No. "	"	1.5	0.5	"
"	104	"	12:00 "	"	"	" ,200' " "	"	1.5	3.0	"
"	105	"/4	12:10 AM	"	"	" ,300'No. "	"	1.5	3.0+	"
"	106	"	12:20 "	"	"	" ,100'So. "	"	1.5	3.0+	"
"	107	"	12:30 "	"	"	" ,200'" "	"	1.5	3.0+	"
"	108	"	12:40 "	"	"	" ,300'" "	"	1.5	3.0+	"
"	109	"	12:50 "	"	"	" ,400'" "	"	1.5	3.0+	"
"	110	"	1:00 AM	"	"	13&Denison&Har ,Center /yard [redacted]	"	1.5	7.5	"

0043

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L	111	9/4	1:10 AM	75	Ptly/cldy Wind-SO.W.	13Denison&Harvard,100' so. of center.	3.	1.5	9.5	None
"	112	"	1:20 "	"	"	" " ,200' so. of center.	"	1.5	9.5	None.
"	113	"	1:30 "	"	"	" " ,300'	"	1.5	9.0	"
"	114	"	1:40 "	"	"	" " ,400'	"	1.5	9.5	"
"	115	"	1:50 "	"	"	" " 500'	"	1.5	10.0	"
"	116	"	2.00 "	"	"	" " 600'	"	1.5	12.0	"
"	117	"	6:00 PM	79	Ptly/cldy Wind-west	13 Denison & Harvard 100' west of center.	"	1.0	2.0	"
"	118	"	6:10 "	"	"	" " 200'	"	1.0	2.0	"
"	119	"	6:20 "	"	"	" " 300'	"	1.5	2.0	"
"	120	"	6:30 "	"	"	" " 100' no. of center	"	1.5	2.0	"
"	121	"	6:40 "	"	"	" " 200'	"	1.5	3.0	"
"	122	"	6:50 "	"	"	" " 300'	"	1.5	3.0	"
"	123	"	7:00 "	"	"	" " 100' east of center.	"	1.0	3.5	"
"	124	"	7:10 "	"	"	" " 200'	"	1.0	3.5	"
"	125	"	7:20 "	"	"	" " 300'	"	1.0	3.5	"
"	126	"	7:30 "	"	"	13&Harvard Cafe	"	1.0	4.5	"
"	127	"	7:40 "	"	"	13&Harvard, 50' east of 13&Harvard on bridge south side	"	1.0	4.5	"

[redacted]

1110433

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L	128	9/4	7:50 PM	79	Ptly/cldy Wind:west	13&Harvard,100' east of " on bridge, so. side.	3	1.0	4.5	None
"	129	"	8:00 "	"	"	" " 150' "	"	1.5	4.5	"
"	130	"	8:10 "	"	"	" " 200' "	"	1.5	4.5	"
"1	131	"	8:20 "	"	"	" " 250' "	"	1.5	5.0	"
"	132	"	8:30 "	"	"	" " 300' "	"	1.5	5.0	"
4	133	"	8:40 "	"	"	" " 350' "	"	1.0	5.5	"
"	134	"	8:50 "	"	"	" " 400' "	"	1.0	5.5	"
"	135	"	9:00 "	78	"	" " 500' "	"	1.0	5.5	"
"	136	"	9:10 "	"	"	" " 560' "	"	1.0	5.5	At top of stairs on landing.
"	137	"	9:20 "	"	"	" " 560' "	"	1.5	1.0	First landing from top.
"	138	"	9:30 "	"	"	" " 560' "	"	2.0	6.0	Second " " "
"	139	"	9:40 "	"	"	" " 560' "	"	1.0	6.0	Third " " "
"	140	"	9:50 "	"	"	" " 660' "	"	1.0	6.5	
"	141	"	10:00"	77	"	" " 760' "	"	1.0	6.5	
"	142	"	10:10"	"	"	" " 860' "	"	1.0	6.5	
"	143	"	10:20"	"	"	" " 910' "	"	1.0	6.5	
"	144	"	10:30"	"	"	" " 960' "	"	1.0	6.5	

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

September 9, 1947.

[redacted]

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L	145	9/4	10:40PM	77	Ptly/cldy Wind:west	960' east of 13&Harvard Cafe on bridge, so. side.	3	1.0	6.5	None.
"	146	"	10:50"	"	"	1010' " "	"	1.0	6.5	"
"	147	"	11:00"	76	"	1060' " "	"	1.0	7.0	"
"	148	"	11:10"	"	"	1110' " "	"	1.0	7.0	"
"	149	"	11:20"	"	"	1160' " "	"	1.0	7.0	"
"	150	"	11:30"	"	"	1210' " "	"	1.0	7.0	"
"	151	"	11:40"	"	"	1260' " "	"	1.0	7.5	"
"	152	"	11:50"	"	"	1310' " "	"	1.0	8.0	"
"	153	"	12:00	74	"	1360' " "	"	1.0	8.5	Directly opp. w.end Area C.
"	154	9/5	12:10AM	"	"	1410' " "	"	1.0	9.0	Center of Area C.
"	155	"	12:20"	"	"	1460' " "	"	1.0	9.0	Directly opp. Area C.
"	156	"	12:30"	"	"	1460' " "	"	1.0	9.5	" " " " ~~directly~~ 5' below bridge roadway.
"	157	"	12:40"	"	"	1460' " "	"	1.0	10.5	" 10' " "
"	158	"	12:50"	"	"	1460' " "	"	1.0	11.0	" 15' " "
"	159	"	1:00 "	"	"	1510' " "	"	1.0	10.0	" opp. Area C.
"	160	"	1:10"	"	"	1510' " "	"	1.0	11.5	Directoy opp. AreaC 5' below "
"	161	"	1:20"	"	"	1510' " "	"	+.5	12.5+	" " " 10' " "
"	162	"	1:30"	"	"	1510' " "	"	+.5	13.0+	" " " 15' " "

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The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

September 9, 1947.

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L	163	9/5	1:40 AM	74	Ptly/cldy Wind:west	1510'E.of 13&Harvard Cafe on bridge, no. side.	3	+ .5	11.0+	
"	164	"	1:50 "	"	"	1510' " " "	"	+ .5	11.5+	
"	165	"	2:00 "	"	"	" " " "	"	+ .5	12.5+	
"	166	"	6:00 PM	"	Wind:No.W. Overcast.	1560' " so." "	"	1.0	10.5	Directly opp.E.end Area C.
"	167	"	6:10 "	"	"	" " " " "	"	1.0	10.5	" " " 5' below bridge roadway.
"	168	"	6:20 "	"	"	" " " " "	"	1.0	9.5	10' " " "
"	169	"	6:30 "	"	"	" " " " "	"	1.0	9.5	15' " " "
"	170	"	6:40 "	"	"	" " no." "	"	1.0	9.5	Directly opp E. end Area B.
"	171	"	6:50 "	"	"	" " " " "	"	1.0	10.5+	" " " 5' below brdg.Rdway.
"	172	"	7:00 "	"	"	1660 " no." "	"	1.0	9.5+	None.
"	173	"	7:10 "	"	"	1660 " " " "	"	1.0	9.5	5' below bridge roadway.
"	174	"	7:30 "	"	"	1660 " " " "	"	1.0	9.5	10' " " "
"	175	"	7:40 "	"	"	1660 " " " "	"	1.0	9.5	15' " " "
"	176	"	7:50 "	"	"	1660 " no." "	"	1.0	9.0+	5' " " "
"	177	"	8:00 "	"	"	1660 " " " "	"	1.0	9.0+	10' " " "
"	178	"	8:10 "	"	"	1660 " " " "	"	1.0	9.0+	15' " " "
"	179	"	8:20 "	"	"	1760' " no" "	"	1.0	8.0-	None.
"	180	"	8:30 "	"	"	1810' " " " "	"	1.0	6.5	"

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READIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To.	Remarks
T&L	180	9/5	8:30 PM	74	Wind:NW Overcast	1810'E. of 13&HarvardCafe on bridge, so. side.	3	1.0	6.5	None
"	181	"	8:40 "	"	"	1860' " " "	"	1.0	6.5	None.
"	182	"	8:50 "	"	"	1910' " " "	"	1.0	6.0+	"
"	183	"	9:00 "	"	"	1960' " " "	"	1.0	6.0+	None.
"	184	"	9:10 "	"	"	1960' " " "	"	1.0	6.0	5' below bridge roadway.
"	185	"	9:20 "	"	"	1960' " " "	"	1.0	6.0+	10' " " "
"	186	"	9:30 "	"	"	1960' " " "	"	1.0	6.0+	15' " " "
"	187	"	9:40 "	73	"	2010' " " "	"	1.0	6.0	None.
"	188	"	9:50 "	"	"	2060' " " "	"	1.0	6.0	"
"	189	"	10:00 "	"	"	2060' " " "	"	1.0	6.0	5' " " "
"	190	"	10:10 "	"	"	2060' " " "	"	1.0	6.0	10' " " "
"	191	"	10:20 "	"	"	2060' " " "	"	1.0	6.0	15' " " "
"	192	"	10:30 "	"	"	2060' " no. "	"	1.0	6.0-	None.
"	193	"	10:40 "	"	"	2060' " " "	"	1.0	6.0-	5' below " "
"	194	"	10:50 "	"	"	2060' " " "	"	1.0	6.0-	10' " " "
"	195	"	11:00 "	"	"	2060' " " "	"	1.0	6.0-	15' " " "
"	196	"	11:10 "	"	"	2110' " So. "	"	1.0	5.0+	None.
"	197	"	11:20 "	"	"	2110' " " "	"	1.0	5.0+	5' " " "
"	198	"	11:30 "	"	"	2110' " " "	"	1.0	5.0+	10' " " "

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The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L	199	9/5	11:40PM	73	Wind:NW overcast	2110' E. of 13&Harvard Cafe on bridge. so. side.	3	1.0	5.0+	15' below bridge roadway.
"	200	"	11:50 "	"	"	2160' " " " "	"	1.0	5.0	None
"	201	9/6	12:00	"	"	2160' " " " "	"	1.0	5.0	5' below bridge roadway.
"	202	"	12:10 AM	70	"	2160' " " " "	"	1.0	5.0	10' " " "
"	203	"	12:20 "	"	"	2160' " " " "	"	1.5	5.0	15' " " "
"	204	"	12:30 "	"	"	2160' " no. " "	"	1.0	5.0	None.
"	205	"	12:40 "	"	"	2160' " " " "	"	1.0	4.5	5' below " "
"	206	"	12:50 "	"	"	2160' " " " "	"	1.0	4.5	15' " " "
"	207	"	1.00 "	"	"	2210' " so. " "	"	1.0	4.0+	None.
"	208	"	1:10 "	"	"	2210' " " " "	"	1.0	4.0+	5' " " "
"	209	"	1:20 "	"	"	2210' " " " "	"	1.0	4.0+	10' " " "
"	210	"	1:30 "	"	"	2210' " " " "	"	1.0	4.0-	15' " " "
"	211	"	1:40 "	"	"	2260' " " " "	"	1.0	3.5	None
"	212	"	1:50 "	"	"	2260' " " " "	"	1.0	3.5	5' below " "
"	213	"	2:00 "	"	"	2260' " " " "	"	1.0	3.5	15' " " "

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The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA

September 9, 1947 [redacted]

*Turner & Lazarus.

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T&L*	19	9/2	6:00 PM	78	Clear	ReadingAve,deadend,centr.	3	.5	3.5	None.
"	20	"	6:10 "	78	"	" ,",25'east"	"	1.5	5.5+	"
"	21	"	6:20 "	78	"	" ,50' " "	"	3.0	7.5	"
"	22	"	6:30 "	76	"	" ,75' " "	"	3.5	8.5	"
"	23	"	6:40 "	76	"	" ,25'So. "	"	1.0	3.5	"
"	24	"	6:50 "	76	"	" ,25'No. "	"	.5	2.0	"
"	25	"	7:00 "	76	"	" ,50'W. "	"	1.0	4.5	"
"	26	"	7:10 "	76	"	" ,100'W "	"	.0	3.0+	"
"	27	"	7:20 "	76	"	13&Redman,center	"	.5	4.0+	"
"	28	"	7:30 "	76	"	Redman,50'W. of center center 13&Redman.	"	.5	3.5	"
"	29	"	7:40 "	76	"	Redman,100'W " " center 13&Redman.	"	.5	3.0	"
"	30	"	7:50 "	76	"	Redman,150'W. of center center 13&Redman.	"	.5	2.0+	"
"	31	"	8:00 "	76	"	Redman,200'W. of center 13&Redman.	"	.5	2.0+	"
"	32	"	8:10 "	76	"	13St.,50' So. of center 13&Redman.	"	.5	2.5	"
"	33	"	8:20 "	76	"	13St.,100'So. of center of 13&Redman.	"	.5	2.5	"
"	34	"	8:30 "	76	"	13St.,150' So. of center of 13&Redman.	"	1.0	3.0	"
"	35	"	8:40"	76	"	13St.,200' So. " " of 13&Redman. [redacted]		1.0	3.5	"

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The Harshaw Chemical Company
1945 East 97 St.
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Division From	Division To	Remarks
[redacted]	36	9/2	8:50 PM	76	Clear	13St. 250' So. of centr of 13tRedman.	3	1.5	4.5	None.
"	37	"	9:00 "	"	"	13St.,300'So. of centr of 13tRedman.	"	1.5	5.0	"
"	38	"	9:10 "	"	"	13St.,350'So. of centr of 13tRedman.	"	1.5	4.5	"
"	39	"	9:20 "	"	"	13St.,400' So. of centr of 13tRedman.	"	1.5	5.5	"
"	40	"	9:30 "	"	"	14St.,50'So. of centr. 14tRedman.	"	1.5	4.0	"
"	41	"	9:40 "	"	"	14St.,100'So. of centr. 14tRedman.	"	1.5	4.0	"
"	42	"	9:50 "	"	"	" ,150' "	"	2.0	5.5	"
"	43	"	10:00"	"	"	" ,200' "	"	2.0	6.0	"
"	44	"	10:10"	"	"	" ,250' "	"	2.0	6.0	"
"	45	"	10:20"	"	"	" ,300' "	"	2.0	6.0	"
"	46	"	10:30"	"	"	" ,350' "	"	1.5	4.5	"
"	47	"	10:40"	"	"	" ,400' "	"	1.5	4.0	"
"	48	"	10:50"	"	"	" ,center	"	1.5	3.5	"
"	49	"	11:00 "	"	"	" ,50'W. of center 14tRedman.	"	1.5	3.5	"
"	50	"	11:10 "	"	"	" ,100'W. " "	"	1.5	3.5	"
"	51	"	11:20 "	"	"	" ,150"W. " "	"	1.5	3.5	"
"	52	"	11:30 "	"	"	" ,200'W. " "	"	1.5	3.0	"
"	53	"	11:40 "	"	"	" ,300'W. " "	"	1.5	3.0	"

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Division From	Division To	Remarks
TML	54	9/2	11:50 PM	74	Clear	14&Redman,400' W. of centr. 14&Redman.	3	1.5	3.5	None.
"	55	"	12:00	"	"	15St.&Redman,center	"	1.0	3.5	"
"	56	"/3	12:10 AM	"	"	" ,100'W. of center 15&Redman.	"	1.0	3.5	"
"	57	"	12:20 "	"	"	" ,200' W. " "	"	1.0	3.5	"
"	58	"	12:30 "	"	"	" ,300' W. " "	"	.5	3.0	"
"	59	"	12:40 "	71	"	" ,400' W. " "	"	.5	3.0	"
"	60	"	12:50 "	"	"	" ,100'E. " "	"	.5	3.0	"
"	61	9/3	1:00 AM	"	"	" ,200'E. " "	"	.5	3.0	"
"	62	"	1:10 "	"	"	" ,300'E. " "	"	.5	2.5	"
"	63	"	1:20 "	"	"	" ,400' " "	"	.5	2.5	"
"	64	"	1:30 "	"	"	" ,500' " "	"	.5	2.0	"
"	65	"	1:40 "	70	"	15&Denison,center.	"	.5	2.0	"
"	66	"	1:50 "	"	"	" ,100'E. " " 15&Denison.	"	1.0	2.5	"
"	67	"	2:00 "	"	"	" ,200'E. " "	"	1.0	2.5	"
"	68	"	6:00 "	80	"	" ,300'E. " "	"	1.0	2.5	"
"	69	"	6:10 "	"	"	" ,400'E. " "	"	1.0	3.0	"
"	70	"	6:20 "	"	Prtlyhldy wnd SO.W.	" ,500'E. " "	"	1.0	3.0+	"
"	71	"	6:30 "	"	"	" ,100' no. of centr 15 and Denison.	"	.5	1.5	"

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
WHL	72	9/3	6:40 PM	80	Fair-Cldy Wind-Se.W.	15St&Denison,200'No. of center at 15&Denison.	3	.5	1.5	None
"	73	"	6:50 "	"	"	15&Denison,300'No. of center 15&Denison.	"	.5	1.5	"
"	74	"	7:00 "	"	"	" ,100'So. " "	"	1.0	1.5+	"
"	75	"	7:10 "	"	"	" ,200'" " "	"	1.0	1.5+	"
"	76	"	7:20 "	"	"	" ,300'" " "	"	1.5	1.5+	"
"	77	"	7:30 "	"	"	" ,100'West	"	1.5	1.5+	"
"	78	"	7:40 "	79	"	" ,200' "	"	1.5	1.5	"
"	79	"	7:50 "	"	"	" ,300' "	"	1.5	2.0	"
"	80	"	8:00 "	"	"	" ,400' "	"	1.5	2.0	"
"	81	"	8:10 "	"	"	14&Denison , center	"	1.0	2.0	"
"	82	"	8:20 "	"	"	" " ,100'E.of center	"	1.0	2.5	"
"	83	"	8:30 "	"	"	" " ,200'E. " "	"	1.0	2.5	"
"	84	"	8:40 "	"	"	" ",300'E. " "	"	1.0	2.5	"
"	85	"	8:50 "	"	"	" ",400'E. " "	"	1.0	2.5	"
"	86	"	9:00 "	76	"	" ",100'W. " "	"	.5	2.5	"
"	87	"	9:10 "	"	"	" ",200'W. " "	"	.5	3.0	"
"	88	"	9:20 "	"	"	" ",300'W. " "	"	.5	3.0	"
"	89	"	9:30 "	"	"	" ",100'No. " "	"	.0	3.0	"
"	90	"	9:40 "	"	"	" ",200'" " "	"	.0	3.0	"

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Co.
1945 East 97 Street
Cleveland 6, Ohio

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
T.[redacted]	91	9/3	9:50 PM	76	Pcly/cldy Wind:So.W.	14&Denison,300'No. of centr.	3	.[redacted]	3.0	None.
"	92	"	10:00 "	"	"	" " ,400' " " "	"	.5	3.0	"
"	93	"	10:10 "	"	"	" ",100' So. " "	"	.5	2.0	"
"	94	"	10:20 "	"	"	" " ,200' " " "	"	.5	2.0	"
"	95	"	10:30 "	"	"	" " ,300' " " "	"	.5	2.0	"
"	96	"	10:40 "	75	"	" ",400' " " "	"	.5	2.0	"
"	97	"	10:50 "	"	"	13&Denison,Center	"	.0	2.5	"
"	98	"	11:00 "	"	"	" ,100'E. of center.		.0	2.5	"
"	99	"	11:10 "	"	"	" ,200' " "	"	.5	2.5	"
"	100	"	11:20 "	"	"	" ,100'W. "	"	.5	2.5	"
"	101	"	11:30 "	"	"	" ,200'W. "	"	.5	2.5	"
"	102	"	11:40 "	"	"	" ,300'W. "	"	.5	2.5	"
"	103	"	11:50 "	75	"	" ,100'No. "	"	1.5	0.5	"
"	104	"	12:00 "	"	"	" ,200' " "	"	1.5	3.0	"
"	105	"/4	12:10 AM	"	"	" ,300'No. "	"	1.5	3.0+	"
"	106	"	12:20 "	"	"	" ,180'So. "	"	1.5	3.0+	"
"	107	"	12:30 "	"	"	" ,200'" "	"	1.5	3.0+	"
"	108	"	12:40 "	"	"	" ,300'" "	"	1.5	3.0+	"
"	109	"	12:50 "	"	"	" ,400'" "	"	1.5	3.0+	"
"	110	"	1:00 AM	"	"	13&Denison&Har /vard ,Cente[redacted]	[redacted]	[redacted]5	7.5	"

The Harshaw Chemical Company
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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

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By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
[redacted]	111	9/4	1:10 AM	75	Ptly/cldy Wind-SO.W.	13Denison&Harvard,100' so. of center.	3.9	1.5	9.5	None
"	112	"	1:20 "	"	"	" " ,200' so. of center.	"	1.5	9.5	None.
"	113	"	1:30 "	"	"	" " ,300'	"	1.5	9.0	"
"	114	"	1:40 "	"	"	" " ,400'	"	1.5	9.5	"
"	115	"	1:50 "	"	"	" " 500'	"	1.5	10.0	"
"	116	"	2.00 "	"	"	" " 600'	"	1.5	12.0	"
"	117	"	6:00 PM	79	Ptly/cldy Wind-west	13 Denison & Harvard 100' west of center.	"	1.0	2.0	"
"	118	"	6:10 "	"	"	" " 200'	"	1.0	2.0	"
"	119	"	6:20 "	"	"	" " 300'	"	1.5	2.0	"
"	120	"	6:30 "	"	"	" " 100' no. of center	N"	1.5	2.0	"
"	121	"	6:40 "	"	"	" " 200'	"	1.5	3.0	"
"	122	"	6:50 "	"	"	" " 300'	"	1.5	3.0	"
"	123	"	7:00 "	"	"	" " 100' east of center.	"	1.0	3.5	"
"	124	"	7:10 "	"	"	" " 200'	"	1.0	3.5	"
"	125	"	7:20 "	"	"	" " 300'	"	1.0	3.5	"
"	126	"	7:30 "	"	"	13&Harvard Cafe	"	2.0	4.5	"
"	127	"	7:40 "	"	"	13&Harvard, 50' east of 13&Harvard on brid[redacted]	"	1.0	4.5	"

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

SECRET

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
TSL	128	9/4	7:30 PM	79	Ptly/cldy Wind:west	13&Harvard, 100' east of " on bridge, so. side.	3	1.0	4.5	None
"	129	"	8:00 "	"	"	" " 150' "	"	1.5	4.5	"
"	130	"	8:10 "	"	"	" " 200' "	"	1.5	4.5	"
"1	131	"	8:20 "	"	"	" " 250' "	"	1.5	5.0	"
"	132	"	8:30 "	"	"	" " 300' "	"	1.5	5.0	"
"	133	"	8:40 "	"	"	" " 350' "	"	1.0	5.5	"
"	134	"	8:50 "	"	"	" " 400' "	"	1.0	5.5	"
"	135	"	9:00 "	78	"	" " 500' "	"	1.0	5.5	"
"	136	"	9:10 "	"	"	" " 560' "	"	1.0	5.5	At top of stairs on landing.
"	137	"	9:20 "	"	"	" " 560' "	"	1.5	1.0	First landing from top.
"	138	"	9:30 "	"	"	" " 560' "	"	2.0	6.0	Second " " "
"	139	"	9:40 "	"	"	" " 560' "	"	1.0	6.0	Third " " "
"	140	"	9:50 "	"	"	" " 660' "	"	1.0	6.5	
"	141	"	10:00"	77	"	" " 760' "	"	1.0	6.5	
"	142	"	10:10"	"	"	" " 860' "	"	1.0	6.5	
"	143	"	10:20"	"	"	" " 910' "	"	1.0	6.5	
"	144	"	10:30"	"	"	" " 960' "	"	1.0	6.5	

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SECRET

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
TEL	145	9/4	10:40PM	77	Ptly/cldy Wind:west	960' east of 134 Harvard Cafe on bridge, so. side.	3	1.0	6.5	None.
"	146	"	10:50"	"	"	1010' " "	"	1.0	6.5	"
"	147	"	11:00"	76	"	1060' " "	"	1.0	7.0	"
"	148	"	11:10"	"	"	1110' " "	"	1.0	7.0	"
"	149	"	11:20"	"	"	1160' " "	"	1.0	7.0	"
"	150	"	11:30"	"	"	1210' " "	"	1.0	7.5	"
"	151	"	11:40"	"	"	1260' " "	"	1.0	7.5	"
"	152	"	11:50"	"	"	1310' " "	"	1.0	8.0	"
"	153	"	12:00	74	"	1360' " "	"	1.0	8.5	Directly opp. w.end Area C.
"	154	9/5	12:10AM	"	"	1410' " "	"	1.0	9.0	Center of Area C.
"	155	"	12:20"	"	"	1460' " "	"	1.0	9.0	Directly opp. Area C.
"	156	"	12:30"	"	"	1460' " "	"	1.0	9.5	" " " "
										Directly 5' below bridge roadway.
"	157	"	12:40"	"	"	1460' " "	"	1.0	10.5	" 10' " "
"	158	"	12:50"	"	"	1460' " "	"	1.0	11.0	" 15' " "
"	159	"	1:00 "	"	"	1510' " "	"	1.0	10.0	" opp. Area C.
"	160	"	1:10"	"	"	1510' " "	"	1.0	11.5	Directly opp. Area C 5' below "
"	161	"	1:20"	"	"	1510' " "	"	+.5	12.5+	" " " 10' " "
"	162	"	1:30"	"	"	1510' " "	"	+.5	13.0+	" " " 15' "

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The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
[redacted]	163	9/5	1:40 AM	74	Ptly/cldy Wind:west	1510'E.of 134&Harvard Cafe on bridge, no. side.	3	+ .5	11.0+	
"	164	"	1:50 "	"	"	1510' " " "	"	+ .5	11.5+	
"	165	"	2:00 "	"	"	" " " "	"	+ .5	12.5+	
"	166	"	6:00 PM	"	Wind:No.W. Overcast.	1560' " so."	"	1.0	10.5	Directly opp.E.end Area C.
"	167	"	6:10 "	"	"	" " " "	"	1.0	10.5	" " " 5' below bridge roadway.
"	168	"	6:20 "	"	"	" " " "	"	1.0	9.5	10' " " "
"	169	"	6:30 "	"	"	" " " "	"	1.0	9.5	15' " " "
"	170	"	6:40 "	"	"	" " No."	"	1.0	9.5	Directly opp E. end Area B.
"	171	"	6:50 "	"	"	" " " "	"	1.0	10.5+	" " " 5' below brdg.Rdway.
"	172	"	7:00 "	"	"	1660 " So."	"	1.0	9.5+	None.
"	173	"	7:10 "	"	"	1660 " " "	"	1.0	9.5	5' below bridge roadway.
"	174	"	7:30 "	"	"	1660 " " "	"	1.0	9.5	10' " " "
"	175	"	7:40 "	"	"	1660 " " "	"	1.0	9.5	15' " " "
"	176	"	7:50 "	"	"	1660 " NE."	"	1.0	9.0+	5' " " "
"	177	"	8:00 "	"	"	1660 " " "	"	1.0	9.0+	10' " " "
"	178	"	8:10 "	"	"	1660 " " "	"	1.0	9.0+	15' " " "
"	179	"	8:20 "	"	"	1760' " So"	"	1.0	8.0-	None.
"	180	"	8:30 "	"	"	1810' " " "	"	1.0	6.5	"

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RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To.	Remarks
TEL	180	9/5	8:30 PM	74	Wind:NW Overcast	1810'S. of 134 Harvard Safe on bridge, so. side.	3	1.0	6.5	None
"	181	"	8:40 "	"	"	1860' " " "	"	1.0	6.5	None.
"	182	"	8:50 "	"	"	1910' " " "	"	1.0	6.0+	"
"	183	"	9:00 "	"	"	1960' " " "	"	1.0	6.0+	None.
"	184	"	9:10 "	"	"	1960' " " "	"	1.0	6.0	5' below bridge roadway.
"	185	"	9:20 "	"	"	1960' " " "	"	1.0	6.0+	10' " " "
"	186	"	9:30 "	"	"	1960' " " "	"	1.0	6.0+	15' " " "
"	187	"	9:40 "	73	"	2010' " " "	"	1.0	6.0	None.
"	188	"	9:50 "	"	"	2060' " " "	"	1.0	6.0	"
"	189	"	10:00 "	"	"	2060' " " "	"	1.0	6.0	5' " " "
"	190	"	10:10 "	"	"	2060' " " "	"	1.0	6.0	10' " " "
"	191	"	10:20 "	"	"	2060' " " "	"	1.0	6.0	15' " " "
"	192	"	10:30 "	"	"	2060' " no. "	"	1.0	6.0-	None.
"	193	"	10:40 "	"	"	2060' " " "	"	1.0	6.0-	5' below " "
"	194	"	10:50 "	"	"	2060' " " "	"	1.0	6.0-	10' " "
"	195	"	11:00 "	"	"	2060' " " "	"	1.0	6.0-	15' " " "
"	196	"	11:10 "	"	"	2110' " no. "	"	1.0	5.0+	None.
"	197	"	11:20 "	"	"	2110' " " "	"	1.0	5.0+	5' " " "
"	198	"	11:30 "	"	"	2110' " " "	"	1.0	5.0+	10' " " "

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The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH VICTOREEN 263 - OFF THE PLANT AREA
September 9, 1947.

[redacted]

By	No.	1947 Date	Time	Temp.	Weather	Location	Scale	Divisions From	Divisions To	Remarks
TGL	199	9/5	11:40PM	73	Wind: W overcast	2110' E. of 138 Harvard Cafe on bridge. so. side.	3	1.0	5.0+	15' below bridge roadway.
"	200	"	11:50 "	"	"	2160' " " "	"	1.0	5.0	None
"	201	9/6	12:00	"	"	2160' " " "	"	1.0	5.0	5' below bridge roadway.
"	202	"	12:10 AM	70	"	2160' " " "	"	1.0	5.0	10' " " "
"	203	"	12:20 "	"	"	2160' " " "	"	1.5	5.0	15' " " "
"	204	"	12:30 "	"	"	2160' " so. "	"	1.0	5.0	None.
"	205	"	12:40 "	"	"	2160' " " "	"	1.0	4.5	5' below " "
"	206	"	12:50 "	"	"	2160' " " "	"	1.0	4.5	15' " " "
"	207	"	1.00 "	"	"	2210' " so. "	"	1.0	4.0+	None.
"	208	"	1:10 "	"	"	2210' " " "	"	1.0	4.0+	5' " " "
"	209	"	1:20 "	"	"	2210' " " "	"	1.0	4.0+	10' " " "
"	210	"	1:30 "	"	"	2210' " " "	"	1.0	4.0-	15' " " "
"	211	"	1:40 "	"	"	2260' " " "	"	1.0	3.5	None
"	212	"	1:50 "	"	"	2260' " " "	"	1.0	3.5	5' below " "
"	213	"	2:00 "	"	"	2260' " " "	"	1.0	3.5	15' " " "

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THE HARSHAW CHEMICAL COMPANY

[redacted]

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

September 5, 1947.

701 Harshaw ~~[illegible]~~

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolfe

Dear Sir:

Attached hereto you will find report on Radiation Readings taken in Area "C", Atomic Energy Commission Plant, operated by this company.

This report covers readings taken between 2:10 P.M. August 26 and 2:30 P.M. August 28, 1947.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Robert A. Turner
Safety Director.

RANTurner/mm
Extra copy letter & report enclosed.
cc/WATaussig

By [illegible]
Date [illegible] P. F. Brown

[illegible]
SEP 17 1947

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*No Temp & Weather columns shown.

RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS

The Harshaw Chemical Co.
1945 East 97 Street
Cleveland 6, Ohio.

September 4, 1947.

By	No.	1947 Date	*Time	Location	Mrep/hr w.o.	Distance	Mrep/hr. w.o.	Distance	Remarks
Teague	1	8/26	2:10 P.M.	#15 Furnace, Tray from #1 containing ash.	6400	at 1"	600	at 3"	--
"	2	"	2:20 "	1' in frnt of receiver opp. #20 cell on floor.	60	1"	7.5	1"	--
"	3	"	2:30 "	From ice trap #69(full) 1" from top.	3	1"	--	--	--
"	4	"	2:40 "	On floor 1/2 distance between cell wall #20 and reactors(on floor).	25	1"	--	--	--
"	5	"	2:50 "	Between walls of hoods for Cells 18A & 19 on floor.	35	1"	--	--	--
"	6	"	3:00 "	On floor in front of receivers opp. Cell 18A.	60	1"	--	--	--
"	7	"	3:10 "	4' in front of receivers opp. 18A on floor.	20	30"	--	--	--
"	8	"	3:20 "	1' in front of instrument panel for Cells 18&18A.	10	30"	--	--	On floor.
"	9	"	3:30 "	Top of reactor rod rack for Crew #3.	20	1"	--	--	" "
"	10	"	3:40 "	1' in front of receiver opp. Cell 16A.	20	1"	--	--	" "
"	11	"	3:40 "	Top of loading rack for Crew #3.	240	1"	18	1"	--
"	12	"	3:50 "	Asbestos gloves for Crew #3.	20	1"	--	--	On floor.
"	13	"	4:00 "	1' east of #2 Ice Trap.	10	1"	--	--	" "

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SECRET

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

By	No.	1947 Date	Time	Location	Mrep/hr. w.o.	Distance	Mrep/hr w.c.	Distance	Remarks
Teague	14	8/26	4:20 P.M.	Top of loading rack for #2 Crew.	240	at 2"	--	--	--
"	15	"	4:30 "	On floor half way betwn reactors opp. Cell #14.	22	1"	--	--	--
Turner	16	8/26	6:00 "	2' in frnt of receiver opp. Cell 12A(some ash was spilled on floor)	20	1"	--	--	On floor.
"	17	"	6:10 "	1' in frnt of receiver opp. Cell 13A.	50	1"	--	--	" "
"	18	"	6:20 "	Drain in floor between cells 9A & 10.	22	1"	--	--	" "
"	19	"	6:30 "	6' from receiver opp. Cell 9.	25	30"	--	--	" "
"	20	"	6:40 "	Side door between nitrogen/L 2 trailer & cold water machine./		1"	--	--	" "
"	21	"	6:50 "	Supt.'s desk (office).	L 1	1"	L 1	1"	
"	22	"	7:00 "	On floor 1' in frnt of clerk's desk(office).	5	1"	L 1	1"	Floor recently painted.
"	23	"	7:10 "	On floor 1' in frnt of lavatory in Supt office.	L 1	1"	L 1	1"	" " "
"	24	"	7:20 "	On floor 1' in frnt of filing cabinet.	L 1	1"	L 1	1"	" " "
"	25	"	7:30 "	Pair rubber gloves.	5	1"	--	--	Gloves worn by operator.
"	26	"	7:40 "	Cafeteria 15" from cabinet on west side.	No reaction		--	--	On floor.

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The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

By	No.	1947 Date	Time	Location	Mrep/hr. w.o.	Distance	Mrep/hr w.c.	Distance	Remarks
Turner	27	8/26	7:50 P.M.	Northwest table.	No reaction				On floor.
"	28	"	8:00 "	" " south end.	" "				" "
"	29	"	8:10 "	Southwest " " "	" "				" "
"	30	"	8:20 "	Aisleways between tables.	" "				" "
"	31	"	8:30 "	" " " in front of kitchen.	" "				" "
"	32	"	8:40 "	Kitchen doorway.	" "				" "
"	33	"	8:50 "	Cafeteria doorway west.	" "				" "
"	34	"	9:00 "	Supt!s place at desk.	" "				" "
"	35	"	9:10 "	Under southeast table.	" "				" "
"	36	"	9:20 "	" " " south end.	" "				" "
"	37	"	9:30 "	Window sill in cafeterial	" "				" "
"	38	"	9:40 "	In kitchen facing entrance.	" "				" "
"	39	"	9:50 "	" " " sink.	" "				" "
"	40	"	10:00 "	PingPong Room doorway	" "				" "
"	41	"	10:10 "	" " " south of table.	" "				" "
"	42	"	10:20 "	PingPong Room facing locker room.	" "				" "

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RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

By	No.	1947 Date	Time	Location	Mrep/hr w.o.	Distance	Mrep/hr w.c.	Distance	Remarks
Turner	43	8/26	10:30 P.M.	In locker room.	No Reaction				On floor.
"	44	"	10:40 "	Under lavatory.	" "				" "
"	45	"	10:50 "	Hood #5 approx. 1' from receivers.	55	at 1"	7	at 1"	" "
"	46	"	11:00 "	Opposite #1 Ice Trap.	25	1"	5	1"	C-616 hydrolized.
"	47	"	11:10 "	3' west of #1 " " above floor.	12.5	--	--	--	--
"	48	"	11:20 "	Over #2 green salt tray at 3 in.	240	3"	--	--	--
"	49	"	11:30 "	Hood #4 approx. 1' from receiver.	40	1"	--	--	On floor.
"	50	"/27	12:30 A.M.	"2 Catch pan under scale.	100	1"	--	--	Green salt in pan
"	51	"	12:40	Asbestos gloves.	140	1"	--	--	On floor by #7 panel board.
"	52	"	12:50 "	Hood #3 approx 1' from receivers.	40	1"	--	--	On floor.
"	53	"	1:00 A.M.	Floor in frnt of Hood 3.	15	1"	--	--	" "
"	54	"	1:10 "	In frnt of #5 Panel Bd.	5	1"	--	--	" "
"	55	"	1:20 "	#1 Catch Pan on scale.	240	1"	--	--	Green salt in pan.
"	56	"	1:30 "	Drain in frnt of #2 Hood.	12.5	1"	--	--	On floor.
"	57	"	1:40 "	#2 Hood approx. 1' from receiver.	40	1"	--	--	" "
"	58	"	1:50 "	Opp. wall between #1 and #2 Hoods.	40	1"	--	--	" "
"	59	"	2:00 "	cap dollie	50	1"	--	--	

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The Harshaw Chemical Company
1945 East 97 Street
Cleveland 14, Ohio (6)

RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

By	No.	1947 Date	Time	Location	Mrep/hr. w.o.	Distance	Mrep/hr w.c.	Distance	Remarks
Turner	60	8/27	2:10 A.M.	#1 green salt tray.	170	1"	--	--	--
"	61	"	2:20 "	#1 Hood approx 1' from receiver.	25	1"	--	--	On floor.
"	62	"	2:30 "	West of #1 Hood about 3' south.	15	1"	--	--	" "
"	63	"	2:40 "	Storage cylinder contg. little material.	No Reaction		--	--	Two readings on each row. No reactions in any.
"	64	"	2:50 "	Storage cylinders that were clean.	"	--	--	--	One cylinder checked in each row.
"	65	"	3:00 "	Bottom of stairs.	10.5	1"	--	--	On floor.
Teague	66	"	10:00 "	Middle of steps.	10	1"	--	--	On step.
"	67	"	10:10 "	Top lndg. of steps.	L 2	1"	--	--	--
"	68	"	10:20 "	Floor under Furnace 43.	L 2	1"	--	--	Floor recently painted.
"	69	"	10:30 "	" " " 59.	No Reaction	1"	--	--	--
"	70	"	10:40 "	In Lab by west window.	" "	1"	--	--	On floor.
"	71	"	10:50 "	" " on top of lab. table.	" "	1"	--	--	--
"	72	"	11:00 "	In Lab on top of sample table.	" "	1"	--	--	--
"	73	"	11:10 "	West windows - upstairs.	" "	1"	--	--	--
"	74	"	11:20 "	In rear of Furnace 71.	" "	1"	--	--	On floor.
"	75	"	11:30 "	" " " " 34.	" "	1"	--	--	" "
"	76	"	11:40 "	Under Furnace 28	L 2	1"	--	--	" "

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RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

By	No.	1947 Date	Time	Location	Mrep/hr. w.o.	Distance	Mrep/hr. w.c.	Distance	Remarks
Teague	77	8/27	11:50 A.M.	In front of panel board.	5	1"	--	--	Green salt on floor.
"	78	"	1:00 P.M.	Under Furnace 5.	L 2	1"	--	--	On floor.
"	79	"	1:10 "	On top of repair bench.	2	1"	--	--	Covered with fine green salt.
"	80	"	1:20 "	Chapman's right shoe top.	17	1"	--	--	Green salt on shoe.
"	81	"	1:30 "	White men's locker rm. by sink.	No Reaction	1"	--	--	On floor.
"	82	"	1:40 "	" " " " lavatories.	" "	1"	--	--	On floor.
"	83	"	1:50 "	" " " " behind lockers.	" "	1"	--	--	" "
"	84	"	2:00 "	On top of carton opp. Furnace 41.	10	1"	--	--	Brown salt.
"	85	"	2:10 "	Metal cans opp Furn. 41	L 2	1"	--	--	" " .Thru metal cans.
"	86	"	2:20 "	Wooden pallets stored in storage area.	10	1"	--	--	" "
"	87	"	2:30 "	Floor between stock rm. & elevator.	No Reaction	1"	--	--	--
"	88	"	2:40 "	Burned out furnace.	" "	1"	--	--	On floor.
"	89	"	2:50 "	Fence south side, west end.	" "	1"	--	--	" "
"	90	"	3:00 "	Under furnace loading stand.	L 2	1"	--	--	" "
"	91	"	3:25 "	Put up bench covered with fine brown salt.	20	1"	--	--	On bench.
"	92	"	3:35 "	Under put up bench.	2	1"	--	--	(Sweepings) on floor.

By
Date

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RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

By	No.	1947 Date	Time	Location	Mrep/hr. w.o.	Distance	Mrep/hr. w.c.	Distance	Remarks
Teague	93	8/27	3:45 P.M.	Burned trays.	L 2	1"	--	--	On top of tray on floor.
"	94	"	3:55 "	Negro Locker Room.	L 2	1"	--	--	On floor in frnt of shower.
"	95	"	4:05 "	" " ",south wall.	L 2	1"	--	--	On floor.
"	96	"	4:15 "	" " ",near toilet.	L 2	1"	--	--	" "
"	97	"	4:25 "	" lunch room.	L 2	1"	--	--	" "
"	98	"	4:35 "	" " ", top table.	No reaction		--	--	On table.
Turner	99	"	6:00 "	" " " benches.	L 2	1"	--	--	On bench.
"	100	"	6:10 "	Furnace purging rack.	L 2	1"	--	--	On floor.
"	101	"	6:20 "	So. wall over storage boxes.	5	1"	--	--	--
"	102	"	6:30 "	Roof of new bldg., 20' from WE-61.	No reaction	1"	--	--	On roof.
"	103	"	6:40 "	Roof 10' no. of lab.	" "	1"	--	--	" "
"	104	"	6:50 "	" " east of lockerrm.	" "	1"	--	--	" "
"	105	"	7:00 "	Fence opp. trailer 4' from ground.	" "	48"	--	--	48" above ground.
"	106	"	7:10 "	Fence east side.	" "	12"	--	--	--
"	107	"	7:20 "	1' west of #1 Furnace Bk.	5	1"	--	--	On floor.
"	108	"	7:30 "	2' no. of " " "	10	1"	--	--	" "
"	109	"	7:40 "	Betwn furnace Bk. #1&2	12.5	1"	--	--	" "
"	110	"	7:50 "	2' so. of hot water	240	1"	--	--	" "

L5 40 1 5 7

SECRET

SECRET

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

By	No.	1947 Date	Time	Location	Mrep/hr. w.o.	Distance	Mrep/hr. w.c.	Distance	Remarks
Turner	111	8/27	8:00 P.M.	Under #3 furnace bank.	12.5	1"	--	--	On floor.
"	112	"	8:10 "	Opposite CuF_2 drums	70	1"	--	--	" "
"	113	"	8:20 "	2' west of steam table.	110	1"	--	--	4' above floor 1" from wall.
"	114	"	8:30 "	2' no. of #4 furnace bank.	20	1"	--	--	On floor.
"	115	"	8:40 "	Ash can from #2 center separator.	3300	6"	1800	6"	Instrument resting on top of can.
"	116	"	8:50 "	Wall directly east of steam table.	80	1"	--	--	4' above floor.
"	117	"	9:00 "	10' no. of #1 Ice Trap.	20	1"	L 1	1"	On floor.
"	118	"	9:25 "	2' in rear of #5 Cell Rm.	No reaction	1"	--	--	Floor recently painted.
"	119	"	9:35 "	" " " " #7 " "	" "	1"	--	--	" " "
"	120	"	9:45 "	Inside #9 Cell Room	" "	1"	--	--	" " "
"	121	"	9:55 "	2' in rear of #12 Cell Rm.	" "	1"	--	--	" " "
"	122	"	10:05 "	2' " " " 15 " "	" "	1"	--	--	" " "
"	123	"	10:15 "	2' " " " 19 " "	" "	1"	--	--	" " "
"	124	"	10:25 "	Main entrance to bldg.	" "	1"	--	--	On floor.
"	125	"	10:35 "	Full Cylndr storage rack	L 1	1"	--	--	On rack.
"	126	"	10:45 "	1' no. of " "	2	1"	--	--	Recently painted.

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SECRET

RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

The Harshaw Chemical Company
1945 East 97 Street
Cleveland, Ohio

By	No.	1947 Date	Time	Location	Mrep/hr. w.o.	Distance	Mrep/hr. w.c.	Distrance	Remarks
Turner	127	8/27	10:55 P.M.	Empty cylinder to be painted.	5	1"	--	--	On floor.
"	128	"	11:05 P.M.	Cylinder work table.	2	1"	--	--	On top of work table.
"	129	"	11:15 "	Drain in front of work table.	5	1"	--	--	On floor.
"	130	"	11:25 "	Doorway opp. #20 furnace bank.	10	1"	--	--	On floor.
"	131	"	11:35 "	Wall west of steam table.	110	1"	--	--	Hydrolized C-616 on wall on top of table. 4' above floor & west of table.
"	132	"/28	12:30 A.M.	Steam table.	150	1"			
"	133	"	12:40 "	Under OG vent line 3' so. of east wall.	30	1"	--	--	On floor.
"	134	"	12:50 "	Under #15 furnace bank.	5	1"	--	--	" "
"	135	"	1:00 "	Aisleway 15' west of office.	2	1"	--	--	" "
"	136	"	1:10 "	Opposite ice box.	L 2	1"	--	--	" "
"	137	"	1:20 "	Empty receiver storage area.	L 2	1"	--	--	" "
"	138	"	1:30 "	Floor 10' so. of still trap.	2	1"	--	--	" "
"	139	"	1:40 "	In front of still tra scale.	No reaction	1"	--	--	" "
"	140	"	2:00 "	Between stills.	" "	1"	--	--	" "
"	141	"	2:10 "	Behind still.	" "	1"	--	--	" "
"	142	"	2:20 "	2' in front of still room.	L 2	1"	--	--	" "

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SECRET

The Harshaw Chemical Company
1945 East 97 Street
Cleveland 6, Ohio

RADIATION READINGS TAKEN WITH ZUES IN OPERATING AREAS
September 4, 1947.

By	No.	1947 Date	Time	Location	Mrep/hr. w.c.	Distance	Mrep/hr w.c.	Distance	Remarks
Turner	143	8/28	2:30 A.M.	10' no. of door by still.	No Reaction	1"	--	--	On floor.
"	144	"	2:40 "	By elevator.	" "	1"	--	--	" "
"	145	"	2:50 "	Trough approx. 30' no. of door.	" "	1"	--	--	" "
"	146	"	3:00 "	Maintenance room.	" "	1"	--	--	" "
Teague	147	"	10:30 "	6' east of main door in Maintenance shop.	L 2	1"	--	--	" "
"	148	"	10:40 "	Leather gloves in shop (left)	10	1"	--	--	On floor, still being used.
"	149	"	10:50 "	" " "(right)	60	1"	--	--	" " "
"	150	"	11:00 "	Work bench, MaintenanceShop	No Reaction	1"	--	--	Top of bench.
"	151	"	11:10 "	3' no. of drain in shop.	L 2	1"	--	--	On floor.
"	152	"	11:20 "	End of loadng rck hood 20.	1200	1"	60	1"	Mixture of green salt & ash.
"	153	"	11:30 "	1" so. of Recvr. Hood 20.	25	1"	2	1"	Green salt on floor.
"	154	"	11:40 "	6' so. " " " 19.	2400	1"	130	1"	Ash on floor.
"	155	"	11:50 "	6' " " " " 18.	50	1"	2	1"	Ash tracked on floor.
"	156	"	1:00 P.M.	1' " " ice trap, east end Hood #6.	20	1"	2	1"	Some hydrolized C-616 on floor.
"	157	"	1:10 "	1' so. of RecvrHd. #16.	20	1"	L 2	1"	On floor.
"	158	"	1:20 "	Dolly of Hood #6.	25	1"	2	1"	Top of dolly.

SECRET

1110460

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The Harshaw Chemical Company
1945 East 97 St.
Cleveland 6, Ohio.

September 4, 1947.

RADIATION READINGS TAKEN WITH VICTOREEN 263 (NOT CALIBRATED)
OUTSIDE AREA "C" OPERATING AREA

SECRET

Taken By	Reading No.	1947 Date	Weather Temp.	Time	Location	Scale	Divisions	Remarks
Turner	1	8/28		6:00 P.M.	West end of bridge over Cuyahoga River.	3	1	Next to plant.
"	2	8/28		6:20 P.M.	East side " "	3	.5	
"	3	8/28		6:45 P.M.	" end of bridge north of plant.	3	1	
"	4	8/28		7:00 P.M.	On bridge directly north of plant.	3	3	
"	5	8/28		7:20 P.M.	At steps on bridge.	3	1.5	
"	6	8/28		7:40 P.M.	Across street from Bill&Ted's Cafe (Denison)	3	3	
"	7	8/28		8:00 P.M.	14th and Redman	3	2	
"	8	8/28		8:15 P.M.	Top of cinder road hill(14 St)	3	2	
"	9	8/28		8:30 P.M.	15th and Redman	3	2	
"	10	8/28		8:45 P.M.	At railroad tracks west of Stadler.	3	2	
"	11	8/28		8:55 P.M.	Cuyahoga Soap Co.	3	1.5	
"	12	8/28		9:05 P.M.	Under north west table	3	15	Tube was held parallel and about 1/2" above floor with window open.
"	13	8/28		9:10 P.M.	" south west "	3	10	Readings No. 12, 13, 14, 15, 16, 17 and 18 were taken in the Main Lunch Room.
"	14	8/28		9:20 P.M.	" " " north end.	3	7.5	
"	15	8/28		9:30 P.M.	M.F.Rejdak place at table.	2	8	

This document consists of 2 page(s)
Number 2 of 3 copies Series A

Special Review
Final Determination
Unclassified
By J B Patton
Date 1980
P F Brown

1110461

SECRET

[redacted]

RADIATION READINGS TAKEN WITH VICTOREEN 263 (NOT CALIBRATED)
OUTSIDE AREA "C" OPERATING AREA

The Harshaw Chemical Company
1945 East 97 St.
Cleveland 6, Ohio.

September 4, 1947.

Taken By	Reading No.	1947 Date	Weather Temp.	Time	Location	Scale	Divisions	Remarks
Turner	16	8/28		9:40 P.M.	R. Toys' place at table.	3	17	(Main Lunch Room)
"	17	8/28		9:50 P.M.	F. Becker's " " "	3	5	
"	18	8/28		10:00 P.M.	In cafeteria around table.	3	5	

RANTurner/mm
cc/WMRemsig

Special Re...
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Unclassified
By ... Reclassification
Date ... 1980
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[redacted] meaning of the Espionage Act, U.S.C. 50:31 and 32, in a manner [redacted] contents [redacted] prohibited by law.

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THE HARSHAW CHEMICAL COMPANY

COPY [redacted]

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

TO: Mr. C. S. Parke.

Cleveland. Dr. B. S. Wolfe September 4, 1947.

FROM: Mr. R.A.H. Turner, Jr., Safety Director.

NYC FILE NO. 70/Harshaw ~~7-6-47~~

PROGRESS REPORT -
Health Physics Program, Area "C".

The following has been accomplished during the period of August 12 to, and including, August 31 on the Health Physics Program in Area "C" as recommended and requested by the Rochester group and Dr. B. S. Wolfe, Medical Director, New York Operations Office, Atomic Energy Commission:

A. Uranium dust samples collected in the operating area 67.

B. Uranium floor smears collected in the operating area with #50 photo paper 4.25 cm in dia. 66.

C. Urine samples collected from employees on the 8-4 shift 24.

D. Uranium nose wipes collected in the operating area 10.

E. Radiation readings taken with Zeus in operating area 165.

F. Radiation readings taken with Victoreen 263 meter outside operating area. 18.

G. A thorough survey and study of dust-producing operations to determine whether or not industrial vacuum cleaners are needed to improve the housekeeping conditions.

H. A thorough survey and study of fume conditions to determine type of respiratory protection needed.

(A study was made to determine the type of inclosed jigs required for those operations requiring mechanical agitation of material such as hammering and cleaning of reactor trays. The type was determined and is being fabricated.)

I. Type of catch pans for spillage was determined and is now being fabricated.

J. Housekeeping program was instituted in the locker and lunch rooms. These rooms are being thoroughly cleaned on each shift.

K. Employees on all shifts are being spot checked from time to time to determine whether they are taking the required shower.

TO FILE SEP 3 1947
1110463 [redacted]

Mr. G. S. Parks.)2) September 4, 1947.

[redacted]

On September 1st the writer with Mr. Lazarus, a chap who is employed for the Health Physicist position, started to take radiation readings and uranium dust samples outside the operating area. Conditions found to date, particularly on the bridge directly opposite Area "C", were found to be rather bad. It is anticipated that this survey will be completed by September 15th. Until such time it is decided whether or not we are going to install air line system in the operating areas all employees will be constantly reminded to wear the respirators they now have and to keep them clean.

The new x-ray procedure for Area "C" employees as outlined to the writer in a letter from Dr. Wolfe dated August 26th was discussed with Dr. Zickes, who will comply with Dr. Wolfe's request on future examinations.

The Health Physics Program and the radiation and fume sampling surveys as requested by the Rochester group and Dr. Wolfe are being carried out nightly from 6 P.M. to 3 A.M., on Saturdays and Sundays from 6 A.M. to 12 midnight. Since Mr. Teague has returned to Oak Ridge this office will be unable to collect samples 24 hours a day until additional help has been cleared. At the present time this program is being carried on in addition to the writer's normal duties required by the Harshaw Safety Program.

It is the intention of the writer to submit a progress report to you every two weeks.

Safety Director.

RANTurner/mm
cc/WATanzig
BSWolfe
WDStillwell
EELong

[redacted]

1110464

[redacted]

AECM-1 NY

September 4, 1947

Mr. R. A. N. Turner, Safety Director
Harshaw Chemical Company
1945 East 97th Street
Cleveland, Ohio

Dear Bob:

Subject: TRANSMITTAL OF CORRESPONDENCE

Inclosed please find results of fingerprint survey. Please check to see that this list is complete, and repeat the impressions on those names marked with pencil notations.

Also inclosed is a letter from Dr. Howland. Please take suitable action.

Very truly yours,

B. S. Wolf
Medical Director

2 Incls.
1. Ltr 8/27/47-Russell Hayes
2. Ltr 8/27/47-Dr. Howland

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3756

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1110465

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THE HARSHAW CHEMICAL COMPANY

[redacted]

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

September 3, 1947.

NYO FILE NO. 7017 Harshaw

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolfe

Subject: Type of Mask to be used in Area "C"

Dear Sir:

Reference is made to your letter to this office dated August 28, 1947, subject above. The undersigned agrees that the respirators tested by the Rochester group are not completely satisfactory under all conditions encountered in Area "C".

On September 1, 1947, the writer made a thorough survey and study of the fume conditions in Area "C", and since the employees encounter UF_6, UF_4 and UO_2 simultaneously it is the recommendation of this office that an air line be installed in the operating buildings and Mine Safety Appliance Air Line Respirators, equipped with cartridge filters G.M.C. for protective use against light acid gases and organic vapors, and Comfo Face Piece, with B.M. Approval No. 1909 be used.

In your letter you mentioned the possibility of using the Chemax mask. This is a fine piece of protective equipment, however, the canister can only be used for one hour, then must be replaced with a new one; then, too, there is the cost factor, the Chemax costing $135.00 and the canisters $6.00 each, while the M.S.A. Air Line Respirator with fifty feet of hose, complete with couplings, costs $26.50. It is understood by the writer that to use the Air Line Respirator it will be necessary to install an air line in the operating departments. This may appear to be expensive but am sure that in the end it will prove to be more economical.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Robert A. N. Turner
Safety Director.

TO FILE

SEP 10 1947

RANTurner/mm
Extra copy cc-WATaussig [redacted]

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THE HARSHAW CHEMICAL COMPANY

[redacted]

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

September 3, 1947.

NYO FILE NO. 201 Harshaw

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolfe

Dear Sir:

On August 31, 1947, the undersigned made a thorough survey and study of the dust-producing operations in Area "C" to determine whether or not industrial vacuum cleaners are needed to improve the housekeeping conditions.

During the survey and study much dust was seen in the air, and settling on the floors, walls and equipment. To remove this dust properly and to provide a safe healthful place to work the writer is of the opinion that industrial vacuum cleaners are needed.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Robert A. N. Turner
Safety Director.

RANTurner/mm
cc/WATaussig

Special Review
Final Determination
Unclassified
By: J. R. Parrish
Date: 1950
P. F. Brown

TO FILE
SEP 8 1947

[redacted]

1110467

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THE HARSHAW CHEMICAL COMPANY

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

[redacted]

August 26, 1947.

NYO FILE NO. W. Harshaw

U. S. Atomic Energy Commission
New York Operations Office
P.O. Box 42, Murray Hill Station
New York 16, New York

Attention: Dr. B. S. Wolfe

Dear Sir:

Mr. F. A. Becker has requested information on the type respirator or gas mask canister that can be safely worn by the Area "D" employees while working in UF_6, UF_4 and UO_2 dust and fumes, simultaneously.

The undersigned contacted Mr. C. E. Hays of the Rochester group, who stated that tests were not made on the fumes and dust but made on dust only, and he recommends (1) M.S.A. All Dust, and (2) M.S.A. Composite Metal Fume respirators, with Bureau of Mines Approval, Numbers 2133 and 2139.

Since the Area "D" employees need protection from both the fumes and dust at the same time the above mentioned respirators are of no value to this project. We are, therefore, requesting that your office advise us of what type respiratory equipment can be used safely and where it can be secured.

Enclosed herewith you will find a report "Tests of Acceptability of Respiratory Protective Devices for Dusts of 10 Uranium Compounds" as prepared by the Rochester group after testing the equipment. It is requested that this report be returned to the undersigned after it has been reviewed by you.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

RAlTurner

Safety Director.

TO FILE
AUG 29 1947

RAlTurner/mm
Extra copy enclosed.
Enclosure - Table [redacted]

[redacted]

1110468

[redacted]

Hunter

AECFR-5 NY

To: Jerahow Chen

August 22, 1947

Mr. E. R. Long
Brother Chemical Company
[redacted]

Dear Mr. Long:

We have gone over a large number of reports from our library in the New York Office. We have chosen some of them as possibly being of use and interest to you in your [redacted] work [redacted] and our library will forward them to you as fast as copies can be obtained or photostatic copies made.

It is quite possible that some of these reports will be of no interest to you and can be returned to this office. In addition, there may be some phases of the projected work that are not covered in any of these reports, and we would appreciate word from you concerning any definite subjects not covered and in which you are interested. In the meantime we shall attempt to locate additional reports on subjects in which you may be interested.

Very truly yours,

E. H. Delaney, Chief
Production Division

U.S. ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS
NEW YORK 16, N.Y.
3603
AUG 22 1947
DISPATCHED

[redacted]

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THE HARSHAW CHEMICAL COMPANY

[redacted]

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

701 Harshaw

August 20, 1947.

Mr. W. E. Kelley
Manager of Operations
U. S. Atomic Energy Commission
P.O. Box 42, Murray Hill Station
New York 16, New York

Dear Sir:

In answer to your letter of August 5, 1947, Ref. AECM-1NY in regard to the Health Program at Area "C", the Harshaw Chemical Company is in general agreement with the Health and Safety Program outlined and will cooperate to bring about the desired results as rapidly as possible.

In line with previous correspondence, in this contract, we would expect capital equipment and alterations required by the program to be paid for by the Government under a supplement to the contract. We would assume operation and ordinary maintenance expenses and include them in the price per pound for the product. Expenses incurred in the preliminary health survey and for research on improved equipment were not contemplated in our present price per pound and should be covered by a supplement or separate contract. We are collecting these expenses at present in a separate account.

Covering the items in the program outlined in your letter of August 5, we have the following comments:

Long Range

1. Development of a continuous closed type reactor. - This was modified and amplified in the meeting with Messrs. Welter, Hunter and Taussig August 7 to include a development program to improve the operation mechanically from health physics, economy of material, and increase in production standpoints. The program would consist of (a) Immediate: Engineering services to design and test minor changes in existing plant equipment to improve operating conditions. (Item 2 of your letter "Study of Waste Disposal" would be included.), (b) Long Range: Design, construction and testing of a continuous or larger batch type reactor which would avoid handling, reduce losses, and increase production.

Unclassified
By J. R. [illegible]
Date [illegible]
P. F. Brown

TO FILE
SEP 2 1947

[redacted]

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It is estimated that this development program would require the equivalent of two development men for a year, charges to be made at the rate of $5.00 per man-hour for time actually spent on the job. The charge of $5.00 per hour includes overhead and normal operating supplies but does not include capital equipment. In addition to the $20,000 for labor it is suggested that $10,000 be allocated for equipment and unusual operating supplies.

2. (Included in above)

3. Construction of a change house of the "decontamination" type with separate eating facilities.

It is planned to eliminate female employees in the Area and re-arrange the existing change rooms to accomplish this end. If this plan meets the approval of the Medical Section the expense involved should be minor, but if a separate change house must be built we would expect the Government to assume all expenses, including the cost of the building.

4. Study of methods of beta monitoring under local conditions. - This study will be made by the Health Physics Group and we would expect expenses of the preliminary survey to be paid for directly by the Government, but if it becomes a permanent proposition the cost will be absorbed in the price per pound.

Immediate

1. Construction of the recovery unit will be expedited.

2. The Company will employ a full time Health Physicist as soon as one can be found and in addition will employ permanently four cleaning men. The cost of these men will be absorbed in the present price per pound of material. Four helpers will be required for the period of the preliminary health survey and their salaries and expenses will be included in preliminary health survey expenses charged directly to the Government.

3. The Company is willing to install in existing building laundry equipment to be owned by the Government, installation costs to be charged to the Government. In case a separate building is found to be necessary for health physics reasons, we would expect the Government to assume all expenses, including the cost of the building. The cost of operating the laundry will be absorbed in the price per pound of material.

4. Stairway will be constructed outside of present locker rooms. The cost of this alteration should be covered in a supplement to the contract.

5. Adoption of standard respirator procedures. - This would be the responsibility of the Health Physics Group.

Fina...
By
Date
P E Br...

1110471

6. Adoption of standard protective clothing. - The Company is willing to follow the recommendations on the basis that first cost of clothing, shoes, etc., be borne by the Government, maintenance and replacement to be the responsibility of the Company and the cost absorbed in the price per pound for material.

7. Improvement in housekeeping procedures. - This item includes work to be done under the immediate development program, capital equipment to be paid for directly by the Government and maintenance work to be absorbed in the price per pound of product.

8. Improvement in personal hygiene. - The Health Physics Group will be responsible for this program.

9.,10., 11., 12. - Medical recommendation will be taken care of by the Health Physics Group and the Plant Physician. The cost of any capital equipment required will be charged directly but maintenance and medical fees will be absorbed in the price per pound of product.

We believe this covers the points outlined in your letter but there is one more which was discussed in the meeting with Mr. Hunter on August 7. It would be desirable to include a clause in our contract to cover unusual maintenance expenses, such as complete replacement of major pieces of Government-owned equipment due to wear or accident. This would avoid the necessity of accumulating a reserve fund by Harshaw for this purpose.

To sum up the situation, we believe that a contract or a supplement to the existing contract should be drawn up to cover the following points:

1. Development program.
2. Capital equipment and expenses incurred in the preliminary Health and Safety Program.
3. Capital equipment and alterations required by the Health and Safety recommendations outlined in your letter.
4. Unusual maintenance expenses.

The cost of the following items will be absorbed in the present price per pound of the product until the next negotiating date, January 1, 1948:

1. Health Physicist.
2. Cleanup men.
3. Laundrymen and assistants.
4. Maintenance of health physics equipment and housekeeping expenses.
5. Medical fees.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

H. T. Long

Assistant to the President-
Technical Development.

Unclassified
By: J. R. Patton
Date: 1-30-
F. F. Brown

1110472

HTLong/mm
Extra copy enclosed.
cc/WATaussig

[redacted]

[redacted]

THIS DO[redacted]

WOLF/tk

AEC26-1 NY

August 5, 1947

Mr. K. E. Long
Harshaw Chemical Company
1945 East 97th Street
Cleveland, Ohio

NYO FILE NO. 701 Harshaw Chem

Dear Mr. Long:

Subject: [redacted] PROGRAM AT "AREA C"

The status of health protection at "Area C" is unsatisfactory at present in several respects:

1. Contamination of the "Area C" plant, Harshaw plant area, and an unknown amount of contamination of the surrounding neighborhood with uranium and fluorine compounds;

2. Exposure of operating personnel to uranium and fluorine compounds by direct contact and/or inhalation.

3. [redacted]ent monitoring for external beta ray exposure.

In order to remedy this situation, the Health and Safety Program should be amplified and should include the following items.

Long range:

1. Development of a continuous closed type of reactor.

2. Study of methods of waste disposal.

3. Construction of a change house of the "decontamination" type with separate eating facilities.

4. Study of methods of beta monitoring under local conditions.

Immediate:

1. Speed up of construction of the "recovery unit".

2. Hiring by Harshaw of a full time Health Physicist.

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Rv
Date 1950
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3. Installation of laundry equipment to launder all contaminated clothing locally.

4. Construction of outside stairways to present locker rooms.

5. Adoption of standard "respirator" procedures:

   a. Respirators to be worn during any operation that creates dust or fumes.

   b. Respirators to be kept in clean dust-proof boxes, easily accessible.

   c. Filters on respirators to be changed daily or after any considerable dust or fume exposure.

   d. Respirators to be decontaminated and cleaned after each shift or more often as required.

   e. Personnel to be trained in correct use of respirators.

   f. Sampling operations to determine whether facilities for use of air-supplied masks are required.

   g. Efficiency of respirator technique should be checked by "nose-wipes".

6. Adoption of standard protective clothing procedures:

   a. Complete change of clothing daily. This change should include coveralls, underwear, hat or cap, impervious gauntlet type gloves, and socks. Coveralls should be worn closed around neck and at wrists and have a minimum of pockets. All clothing should be white.

   b. Work shoes should be furnished which are worn only within Area C.

   c. Shoe covers (or rubbers), smocks, hats and gloves should be furnished visitors and personnel who must make short trips to Area B.

   d. Gloves should be changed whenever inside becomes contaminated.

7. Improvement in housekeeping procedures.

   a. Construction of enclosed jigs for those operations requiring mechanical agitation of material such as hammering and cleaning of reactor trays.

Declassified
By: J. R. Patton
Date: 1980
P. F. Brown

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Mr. K. E. Long August 5, 1947

b. Use of catch pans whenever spillage is a possibility.

c. Provision should be made for a clean-up or decontaminating enclosure or room for removing material from items to be repaired, stored, salvaged or junked.

d. Vacuum cleaning of plant area twice each shift or more frequently if necessary, followed by wet cleaning of all dusty surfaces. The vacuum cleaner should be vented to the general exhaust system.

e. The locker rooms should be cleaned at least twice daily.

f. The lunch rooms should be kept immaculately clean.

8. Improvement in personal hygiene.

a. No food should be brought into the work area.

b. No smoking or chewing should be allowed in the work area.

c. Before eating or smoking, thorough clean-up of face and hands should be required and checked by hand counts.

d. No personal possessions should be brought into the work area.

e. Thorough shower should be required after each shift.

f. Hands and clothing should be monitored before any individual leaves Area C.

9. Institution of survey program for uranium and fluorine contamination levels as outlined in discussion. It should be planned to submit the data concerning off-area contamination to competent authority outside of the Atomic Energy Commission for opinion as to completeness of data and interpretation of results.

10. Adoption of routine yearly "fingerprinting" for radiation changes. This procedure should also be included in preemployment and termination examinations.

11. Medical history of new employees should include as detailed a record as possible of previous radiation exposures, industrial and medical.

12. Routine urine testing for uranium and fluorine will be established after spot-check is completed.

Review
Final Determination
Declassified
By J. R. Patton
Date 1980
P. F. Brown

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[redacted]

Mr. K. E. Long August 5, 1947

13. Anterior-posterior radiograph of thoracic spine should be included in the preemployment and termination medical examinations (for detection of fluorosis).

It is the intention of this office to enter into negotiations with you in order to amend the present contract to include compensation for certain additional costs incurred as a result of following Atomic Energy Commission Health and Safety recommendations.

Very truly yours,

W. E. Kelley
Manager

DISTRIBUTION:

1. Addressee
2. Mr. Taussig, Cleveland
3. Mr. Belmore
4. Dictator's files
5. Classified files
6. Reading file

3464

Special Rereview,
Final Determination

[redacted]

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its transmission or the re[redacted] its contents
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This [redacted] consists of 3 pages
[redacted] Series A.

THE HARSHAW CHEMICAL COMPANY

1945 EAST 97TH STREET
CLEVELAND 6, OHIO

July 29, 1947

[redacted]

NYO FILE NO.
701 Harshaw Chem

NCN

Dr. P. S. Wolfe
Medical Department
U. S. Atomic Energy Commission
P. O. Box 42
Murray Hill Station
New York 16, New York

Dear Dr. Wolfe:

As requested by you Thursday, July 10, the writer made a health hazard survey in the Atomic Energy Commission Plant operated by the Harshaw Chemical Company.

As a result of this survey the following recommendations are submitted for [illegible] submitted for your consideration does not mean that they have the approval of the Harshaw Chemical Company.

(A) Maintenance Shop - Employees handling KF2H be required to wear rubber gloves and monogoggles

(B) Outlets on receivers be capped while in storage awaiting the distilling operation

(C) Employees handling receivers be required to wear monogoggles, [illegible] and respirator or mask approved by the Rochester group for this work

(D) Trays containing green salt on the second floor be unloaded under a hood and the employees be instructed to wear the respirator or mask approved for this work by the Rochester group

(E) Employees loading and unloading trays on the reactors on the second floor be required to wear monogoggles, rubber gloves, respirator or mask

(F) Men's locker room on the second floor be given a thorough cleaning

(G) Employees adding green salt to trays on the first floor be instructed to wear respirator, goggles and rubber gloves

(H) Employees entering cell rooms for any purpose be required to wear monogoggles and rubber gloves

Formerly Determined Unclassified
By: J. R. Beach
Date: 1980
P. F. Brown

AUG 25 1947

[redacted]

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(I) Employees placing or removing receiver from ice trap be instructed to wear [illegible], respirator and rubber [illegible]

(J) [illegible]

(1) All work areas be cleaned twice during each shift with an industrial vacum cleaner and then flushed down thoroughly with water

(2) An airline be installed throughout the plant so that the employees can use the hooded air mask

(3) The individual respirators and masks tested and approved by the Rochester group should be kept in clean dust-proof boxes easily accessible

(4) Respirator filters and face pieces be changed daily and immediately after any exposure to fumes and dust

(5) Respirators and masks be cleaned after use on each occasion with a clean soft cloth

(6) Complete change of coveralls, under-wear, [illegible] daily to keep the material off the body

(7) Thorough and complete shower after each work shift

(8) Employees be required to wear a hat or cap

(9) Employees be required to keep coveralls buttoned at the neck, sleeves down and buttoned at the wrist

(10) Two lockers for each employee be provided-one for street clothes and one for work clothes

(11) Eating and chewing tobacco be prohibited in operating areas

(12) Employee be required to wash hands and face thoroughly before eating and going to the lavatory

(13) Employees be required to change clothes before eating lunch

(14) Employees be prohibited from bringing food into work areas

(15) Employees be required to wear canvas-type rubber-dipped gauntlet gloves

(16) Employees be required to wear monogoggles or face-shield on all operations where there is a possibility of coming in contact with the slightest concentration of fumes and dust.

Special Review
Final Determination
By: J R
Date: 1980

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(17) An outside stairway be constructed to the second floor to provide a means of egress from the shower and locker rooms after the employees have taken a shower

(18) Employees be required to wear canvas aprons during all operations

(19) Employees be required to change their shoes before leaving the area and under no circumstances should they be permitted to wear their work shoes home

(20) Blood count and urine examinations be taken every three months and as indicated by pertinent findings

(21) A complete physical every year including X-ray - Dr. Friedel (It should be understood that dyspnea, chest pain, cough or other unusual symptoms require a complete physical examination)

(22) Medical examinations for the employees on this area be done by Dr. Hymer Friedel and his associates

(23) Lunchrooms, shower rooms and locker rooms be swept twice during each shift and at the same time give the floors, walls and ceilings a thorough washing

(24) Tables and benches in lunchrooms be given a thorough scrubbing after each meal using a strong disinfectant and hot soapy water.

It is very evident that the lack of personal hygiene on an operation of this type can result in serious consequences; however, with an effective personal hygiene program it is imperative that the present process be studied with the idea in mind of eliminating the present fume and dust condition.

Your comments and criticism will be appreciated.

Very truly yours,

THE HARSHAW CHEMICAL COMPANY

Robert A. N. Turner Jr.

Robert A. N. Turner, Jr.
Safety Director

RANT/dw

Special Review
Final Determination
Unclassified
By: J. R. Patton
Date: 1980
P. F. Brown

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[redacted]

July 12, 1947

Dr. B. S. Wolf
Medical Director
New York Area
Atomic Energy Commission

Survey of Harshaw Chemical Company Unit at Cleveland, Ohio
July 9-10, 1947.

Distribution

B. S. Wolf (6[redacted]
W. H. Ray (1)[redacted]

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by burning on 8/26/47
(date)

By authority of:

By
Date

Lt. Col. Corps, of Engineers

[redacted]

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This document consists of 3 pages
Copy no
No. 7 of series A

Dr. F. S. Wolf
Medical Director
New York Area
Atomic Energy Commission

July 12, 1947

Survey of Harshaw Chemical Company Unit at Cleveland, Ohio
July 9-10, 1947.

Sources of Hazard

Inspection of the unit engaged in production of UF_6 for the A.E.C. revealed a process involving handling the brown oxide and the green tetrafluoride of Uranium. In addition to the radiation exposure from these sources, considerable dust was liberated. Not only did contamination appear where this dust settled from the air, but gross quantities were spilled on the floor to such an extent that it was practical to process floor sweepings. The process also liberates F and HF as process tailings, purges, and leakage. Hoods and blowers direct these gases to the roof where water sprays (recently installed) remove to the sewer some of the offense.

Evaluation of Hazards

Measurements have been initiated by the Rochester group showing to some degree the magnitude of F and U escaping to the atmosphere about the plant. Complaints of F odors have been received from neighbors when the sprays were not in operation. Etching has been observed on windows and the glass of cars parked about the plant. But regardless of whether it can be proved that conditions have been maintained below legal tolerances or not, improvement of the operation is needed for:

1. Protection of the health of the workers.
2. Curtailment of material losses.
3. Aquisition of the good will of the neighbors.

Elimination of Hazards

Reengineering the process to a completely enclosed operation with adequate waste disposal provisions appears to be the main goal. This approach to the problem was volunteered by Mr. C. S. Parke of the Harshaw Chemical Company and it is also the independent conclusion of the writer.

Nuisance Control

While the enclosed process is being engineered certain improvements can be effected immediately. It is understood that a central waste disposal system is under construction, and that installation

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by October is expected. More localized collection of fumes with neutralization of acids before the air is discharged are the features of this system. Recovery of Uranium may also be accomplished from a central waste disposal system.

Remedial Program

Prior to this, steps can be taken to stop the spread of contamination at its source. With the present operation, material can be confined to discrete zones in which work will be permitted only with special protective clothing and devices. Off the floor catch pans where reactors are loaded and unloaded could be designed to keep bulk material from being tracked about. If it is necessary to hammer reactors, trays, and fittings, an enclosed jig in which to do this would eliminate the spread of dust and simplify recovery of material. The vacuum cleaner used in scavenging material should be vented to a waste recovery system. (Such as the central system to be installed.) External contamination of containers, equipment, and fittings should be eliminated. A clean-up enclosure for removing material from items to be repaired, stored, salvaged, or junked can be provided. The clean-up operator should wear special protective clothing, including an air supplied mask if the work is likely to become dusty.

Worker Protection

Workers may be kept immaculate by enforced wearing of impervious protective clothing where contact with material is necessary. Work clothing issued for this purpose should not leave the plant. (After the adoption of the enclosed process, protective clothing will be necessary for repair work.) Decontamination type change rooms facilities are needed to make the issuance of protective clothing effective. Two sets of lockers with showers between arranged to make cross tracking of contamination difficult are essential features. The use of paper slippers, hand counting facilities, dispensing of towels and clothing are additional considerations deserving careful study in laying plans for each specific installation. Frequent laundering of protective clothing on the plant will be needed and in conjunction a means of continually monitoring the laundry's effectiveness. The type of protective clothing to be recommended in each case is not attempted here.

Health Physicist's Job

Many details must be worked out in coordination with the operation as it is revised and develops ultimately into an enclosed process. Hence, a full time Health Physicist is needed (with perhaps, the assistance of technicians) to (1) monitor the hazards of the operation, (2) advance recommendations for improved protection as indicated by evidence he obtains, and (3) maintain a record (for legal and other purposes) of

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By

Date:

[redacted] of its contents in any manner to an [redacted] is prohibited by law.

the conditions in the plant and the exposure of the personnel.

Supervision and individuals should be jointly responsible for the individual's safety and the effecting of protective measures. The Health Physicist will supply the "know how". The Health Physicist will maintain and operate appropriate instruments to measure hazards so that protective measures may adequately be determined.

Equipment

The following instruments are suggested for a Health Physicist's immediate needs:

1 Hand and foot counter
(A GM tube in a fixed shielded geometry plus a scale of 64 will suffice if the four (5) fold outfit as used at Clinton Laboratories is not available.)

2 GM loudspeaker friskers
(GM probe on a 6 ft. cable with a loudspeaker and 110 V. A.C. power supply for frisking personnel and equipment.)

3 GM survey rate meters
(All GM tubes should have thin walls to pass beta radiation.)

2 Flourine sampling units
(Including appropriate laboratory facilities.)

2 Dust sample collectors
(Either improved electric precipitator or (Filtron) special filter paper dust sampling device.)

2 Long tom dust sample alpha counters.
(The spare is suggested if repair may be difficult to achieve in a hurry.)

1 L. and W. Electroscope
(Improved model which will permit measurement of alpha.)

1 Stop watch

Weekly film service
(Both finger and badge films should be available with Beta calibration.)

W. H. Ray
W. H. Ray

WHR:ejp

By Final Unclassified
By Date

[redacted]

[redacted]

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[redacted]

July 12, 1947

Dr. B. S. Wolf
Medical Director
New York Area
Atomic Energy Commission

COPY

Survey of Harshaw Chemical Company Unit at Cleveland, Ohio
July 9-10, 1947.

Distribution

B. S. Wolf (6)
H. H. Ray (1)

[redacted]

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This document consists of 3 pages and 2 figures. No. 3 of 7 copies, Series A

Dr. [illegible] S. Wolf
Medical Director
New York Area
Atomic Energy Commission

July 12, 1947

Survey of Harshaw Chemical Company Unit at Cleveland, Ohio
July 9-10, 1947.

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(Improved model which will permit measurement of alp

1 Stop watch

Weekly film service
(Both finger and badge films should be available with
calibration.)

W. H. Ray

W R:e/p

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UNITED STATES
ATOMIC ENERGY COMMISSION

THIS DOCUMENT CONTAINS 2 7 PAGES A

AECT-2
AEC-730 (Harshaw Chem. Co.)

Oak Ridge, Tennessee
March 28, 1947

OK

p/ Harshaw Chem

~~x 701~~

United States Atomic Energy Commission
Madison Square Area
New York, New York

Attention: Mr. J. S. Quidor, Director of Administration

Subject: MEDICAL PROGRAM - HARSHAW CHEMICAL COMPANY, CLEVELAND, OHIO

1. In reference to your letter of February 25, 1947 (EIDMA-5 MS), the policy of the Harshaw Chemical Company in giving their employees annual X-rays is approved. The nature of the hazard in that location (UF_6 and UOF_2) makes it desirable to continue this policy.

2. The above has been discussed with Dr. H. L. Friedell of Western Reserve University, Cleveland, Ohio. He concurs in this decision.

ATOMIC ENERGY COMMISSION

JOE W. HOWLAND
Major, Medical Corps
Chief, Research Branch
Medical Division

APR

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This document consists of 2 pages, No. 4 of 5 copies, Series

UNITED STATES
ATOMIC ENERGY COMMISSION

11 July 1947

701 / Harshaw - [redacted]
✓ x Cleveland - NCM

U. S. Atomic Energy Commission
Office of N. Y. Directed Operations
P.O. Box 42 Murray Hill Station
New York 16, N. Y.

Attention: Mr. W. E. Kelley, Regional Manager

Subject: MEETING ON HEALTH & SAFETY REQUIREMENTS AT HARSHAW CHEMICAL COMPANY, CLEVELAND, OHIO

(1) On Wednesday 9th of July 1947, a meeting was held in Area "C" of the Harshaw Chemical Company Plant, 1000 Harvard Avenue, Cleveland, Ohio. The following men were present: Mr. William Ray of Clinton Laboratories; Dr. Bernard Wolf and Mr. DeKoven Hunter of your office; Dr. Braestrup, Medical Consultant for your office and the writer.

(2) After carefully examining Health and Safety conditions throughout the plant the entire party met with Mr. Charles Parke, Mr. Charles Dumasky and Dr. Bosarth at the Harshaw Chemical Company offices. The writer has the following suggestions to make concerning this meeting:

(a) That construction of the Recovery Unit be completed at an earlier date than the completion date of October 31, 1947.

(b) That in accordance with the views of Mr. Parke and Dr. Wolf a research program be instigated to develop a continuous type of reactor that will handle Uranium Tetra-fluoride operations and Uranium Hexa-fluoride operations without manual transfer of the green salt to the 616 section of the plant. It has been estimated that such a program would run in the neighborhood of $25,000 and both Mr. Parke and Dr. Bosarth feel that such a reactor could be developed.

(c) That either Harshaw Chemical or the A.E.C. find a health Physicist to reduce the health hazards present now in our plant. In this connection both Mr. Parke and myself feel that it would be preferable for the Harshaw Chemical Company to obtain this man from within their own Company. Mr. Bill Ray of Clinton Laboratories advised us that the training of such a man would require from six to seven weeks. Such training would

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UNITED STATES
ATOMIC ENERGY COMMISSION

This document consists of 2 pages,
No 4 of 5 copies, Series

take place at the Clinton Laboratories at Oak Ridge, Tenn. The writer is of the opinion that it is extremely important that the A.E.C. request the loan of one of Mr. Ray's Physicists during the training period of the Harshaw man and believes that your office should ask the Monsanto Chemical Company at Clinton Laboratories to loan Harshaw such a man immediately. It is understood that the Harshaw Chemical Company will pay this individual a salary equal to the one he is now receiving.

(3) Mr. Turner, Safety man, for the Harshaw Chemical Company, will very shortly advise your office of recommendations for bettering the health standard in Area "C". During the meeting Mr. Turner suggested double lockers for work clothes, white coveralls to be used at all times, a daily change of working clothes and the installation of a shower between the double lockers and the entrance to the plant. Such a plan would force all workers to shower daily.

(4) On the 10th of July 1947, Dr. R. Smith and Mr. Russell Hayes, of the Rochester Office, joined the group mentioned above and it was decided that the Rochester method of analysis for fluorine and uranium content in air samples would be given to authorized Harshaw men cleared for the project. This will enable Mr. Turner and his associates to run approximately eight separate tests a day for one week as a check against the tests recently made by the Rochester group. It was decided that Mr. Turner would work very closely with Rochester and that his samples would be analyzed, for the present, in Rochester.

(5) It is the opinion of this office that controls on the loss of uranium products i.e. approximately 3,000 lbs. per month and the laxity of Health and Safety conditions must be immediately tightened. I am sure that Dr. Wolf and Dr. Braestrup will go "all out" to accomplish this.

W. A. Taussig,
Area Manager, Cleveland, Ohio

:jd
CC: Mr. Fred Belmore
Dr. Bernard Wolf

[redacted]

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No. 5 of 6 copies, Series A

KIDMA-5 MS

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RANT:rmd

New York, New York
February 25, 1947

701 Harshaw Chem
PT

United States Atomic Energy Commission
Oak Ridge, Tennessee

Attention: Major Jon W. Hoagland

Subject: MEDICAL PROGRAM - HARSHAW CHEMICAL COMPANY, CLEVELAND, OHIO

1. Reference is made to your letter dated August 28, 1946, KIDMA-3, subject above, [illegible] Area "C", Harshaw Chemical Company, Cleveland, Ohio, [illegible] you stated that the medical program of the various installations processing uranium ore and compounds was to be standardized, [illegible]

2. It has been the policy of this Company to give the employees in Area "C" a chest X-Ray once a year. Since this does not conform with the program outlined in your letter, they would like to be in- [illegible]

ATOMIC ENERGY COMMISSION

[illegible]

J. S. Collins
Director of Administration

Distribution:
Copies 1, 2 Addressee
3 Mr. Belmore
4 Dictator's File
5 Classified Files
6 Reading File

Copy 3 of Series 17 destroyed by burning on 3/[illegible]/47 (date)

[illegible]

[illegible] of Engineers

TO FILE

Mar 3 1947

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