



~~BUSINESS~~
 UNION CARBIDE CORPORATION
~~CONFIDENTIAL~~
 NUCLEAR DIVISION

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50600

United States Energy Research and Development
 Administration, Oak Ridge Operations
 Attention: Mr. J. F. Wing, Chief
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 Safety and Environmental Control Division
 Post Office Box E
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REPOSITORY MMES / K-25
 COLLECTION Environmental Mgmt. Division
 BOX No. Document Center
 FOLDER 31g K-303-8

Gentlemen:

UF₆ Test Releases

Beginning February 25, 1976, a series of UF₆ test releases will be made in the ventilation system in the K-33 building. These tests are expected to furnish the critical design criteria for the location, mounting arrangement and quantity of UF₆ detectors needed for CIP/CUP operating conditions.

For the duct tests, the wing bypass duct between cell 7 and cell 9 in unit 902-5 will be used. Release rates will start at 5 grams per minute for not longer than thirty minutes; the rate will be increased until a significant number of sensors alarm. The maximum release rate considered at this time is 100 grams per minute for ten minutes. Not more than two releases will be made in any one day. Tails assay material will be used. The total amount of material released is not expected to exceed twenty pounds of UF₆ over a two-month period.

The Laboratory Division with the aid of the Environmental Management Group will operate three air samplers coincidental with the UF₆ releases. One of these samplers will be located at the mouth of the ventilation duct on the roof of the K-33 building. The location of the other two samplers will be determined by the environmental conditions (wind direction and speed). Six twenty-four-hour ambient air samples also will be taken during the same time period to determine any increases in normal levels of uranium and fluoride. All pertinent information regarding these UF₆ test releases will be reported to ERDA after the final tests are completed.

Very truly yours,

S. S. Stief
 S. S. Stief, Environmental Coordinator
 Oak Ridge Gaseous Diffusion Plant

SSS:MJE:mj

cc: Mr. W. O. Gentry
 Mr. R. G. Jordan
 Mr. A. J. Legeay
 File - NoRC

A-00145

1079760

Human Subjects Project

Environment Sampling during U₆ Test Releases

Date	Sample	Cutt Total air volume	soln volume	PPM U soln	total ug U	ug/3ft in air	M		PPB F in air
							PPM F soln	total ug F	PPB F in air
2/27/76	K33 roof	114 cuft	250	0.311	77.8	24.1	0.45	113	45
	Salvage yard	52.2	250	<0.001	<0.3	<0.19	<0.01	<2.5	<2
	NE. Corner K33	62.7	250	0.016	4.0	2.1	0.01	2.5	1.7
	North Hi Vol	553.8	100	0.003	3.	0.02			
2/26/76	K33 roof	35.9	250	0.119	29.8	29.3	0.10	25	32
	Salvage yard	30.2	250	0.013	3.3	3.9	0.015	3.8	5.7
	891 pump house	351.0	250	<0.001	<0.3	<0.3	<0.01	<2.5	<3.2
	South Hi Vol	912.00	100	0.031	31	0.001			
	North Hi Vol	915.00	100	0.517	51.7	0.020			
	West Hi Vol	999.00	100	0.063	6.3	0.002			
3/1/76	K33 roof	71.0	250	0.143	35.8	17.8	0.25	62.5	40
	Salvage yard	79.8	250	<0.001	<0.3	<0.2	<0.01	<2.5	<1.1
	891 Pump house	79.5	250	0.007	1.8	0.80	0.04	10	5.7
	1 K101 pump house	201.5	250		0.05	0.002		8	0.4
	2 K1206-D trailer	904.5	250		3.7	0.14		8	0.14
	3 Hortis Tower	204.5	250		<0.025	<0.001		28	1.4
	4 Blair Road	504.5	250		0.10	0.004		4	0.2
	5 Credit Union	404.5	250		0.13	0.005		6	0.3
	6 Colvin	204.5	250		<0.025	<0.001		3	0.2
3/2/76	K33 roof	691.6	250	0.093	23.3	11.8	0.03	7.5	4.0
	Salvage yard	21.4	250	0.001	0.3	0.2	0.06	15	10.4
	891 Pump house	53.9	250	<0.001	<0.3	<0.2	0.015	3.8	3.2
	South Hi Vol	945.00	100	0.006	0.6	0.0002			
	North Hi Vol	992.25	100	0.193	19.3	0.007			
	West Hi Vol	985.50	100	0.003	0.3	0.0001			

ug/m³ U

1- These samples are those from the regular fluoride sampling program.

Date	Sample	Total air volume	soln. volume	PPM u soln	Total ug u	ug/m ³ in air	PPM F soln	Total ug F	ug/F in air
3/3/76	K33 roof	64.0	250	0.363	90.8	50.1	0.50	12.5	79
	Salvage yard	42.3	250	0.001	0.3	0.2	0.04	10	9.4
	891 pump house	54.6	250	0.048	12.0	7.8	0.07	18	15
	K901 pump house	904.5	250	0.063	15.8	0.62	<0.01	<2.5	<0.12
	1206D Trailer	904.5	250	0.002	0.5	0.02	0.08	2.0	1.0
	Radio Tower	904.5	250	0.013	3.3	0.13	0.11	28	1.4
	North plain road	904.5	250	<0.001	<0.3	<0.01	0.02	5	25
3/4/76	K33 roof	37.3	250	0.067	16.8	15.9	0.17	43	52
	Salvage yard	30.3	250	0.038	9.5	11.1	0.04	10	15
	891 pump house	46.4	250	0.002	0.5	0.38	<0.01	<2.5	<0.1
Rain days	South Hi Vol	183,600	100	1.363	136.3	0.026			
	North Hi Vol	175,500	100	0.165	16.5	0.003			
	West Hi Vol	209,250	100	0.089	8.9	0.002			
3/5/76	K33 roof	27.0	250	0.056	14	18.3	0.06	15	25
	Salvage yard	20.0	250	0.004	1.0	1.8	0.04	10	22.7
	891 pump house	25.8	250	<0.001	<0.3	<0.4	0.04	10	17.6
	K901 pump house	904.5	250	<0.001	<0.3	<0.01	0.01	2.5	0.13
	1206D Trailer	904.5	250	<0.001	<0.3	<0.01	0.04	10	0.5
	Radio Tower	904.5	250	<0.001	<0.3	<0.01	0.30	75	3.8
	North plain road	904.5	250	<0.001	<0.3	<0.01	0.04	10	0.5