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TECHNICAL CENTER

P.O. BOX 2001 SOUTH CHARLESTON, WEST VIRGINIA 25301-0001

TO: K. O. Hopkins
 400-1
 514

December 17, 1980

IH/EP

Construction Employees Dust
 Exposure Monitoring - Alloy
 Furnace Job

cc: P. F. Bonham, 512
 W. V. Filipek, 514
 C. R. Johnson, 512
 H. McHenry, 613
 L. R. Noble, 512
 D. R. Paugh, 512
 J. W. Perry, Jr., 512
 P. P. Price, 512
 E. C. Shipley, 512
 H. L. Robinson, 511

Dear Mr. Hopkins:

Dust samples were taken over a ten-week period at the Union Carbide Alloy Plant where Carbide Construction craftspeople were dismantling and rebuilding furnaces 3 and 7. Based on the OSHA standard for nuisance particulate, i.e., 15 and 5 mg/cu.m for total and respirable dust respectively, none of the thirty-four samples showed excessive dust for people working in the area.

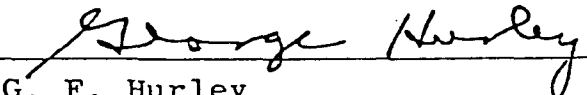
However, there is a ladle lining operation at Alloy near these furnaces which involves the use of crystalline silica. Samples taken on October 16 near the #7 furnace east and west of the furnace showed an average crystalline silica dust content of nine percent. The OSHA allowed exposure for dust containing nine percent silica is 1.5 and 0.9 mg/m³ for total and respirable dust respectively. At these lower levels some of the workers would have been overexposed.

Rather than depending on two values for crystalline silica, several more samples were taken on December 11. When these results are available the exposures will be re-examined with respect to crystalline silica content.

It should be remembered that, while some values were high for one day, the TWA allowed value is considered a safe level for day-after-day during a lifetime of work. So, even if these values found were above an OSHA value corrected for silica content, it does not mean that adverse health effects will accrue. Also, since

12/17/80

many samples were taken on different days and at different places the dust collected in each of the thirty-four samples taken may not have contained the crystalline silica indicated.


G. F. Hurley
Industrial Hygienist

GFH/sc

Attachment

ACKNOWLEDGMENT

We appreciate the excellent cooperation of the craftspeople with respect to wearing the required samplers and pumps to take the measurements. Mr. McHenry of the Alloy Plant helped in monitoring for crystalline silica which was determined by the UCC Metals Division at Niagara Falls.

DATE	SAMPLE	DESCRIPTION	SAMPLE			EXPOSURE	
			MINUTES	DUST ₃ mg/m ³	TOTAL (T) RESPIRABLE (R)	TWA	OSHA ALLOWED
<u>9/29/80</u>	Area	N. furnace 3 - mezz.	122	1.97	T	-	-
	Area	S. furnace 3 - mezz.	120	1.67	T	-	-
<u>9/30/80</u>	R.L. Ross	CF3 Bldg. west - #7 furnace - outside	387	1.89	T	1.52	2.73
	F.L. Davis	#7 West outside	398	0.40	R	0.33	0.9
	T.L. Vaughan	#7 West outside	394	.28	R	.23	.9
	R.F. Cooper	#7 West outside	393	.08	R	.07	.9
	B.A. Hambrick	#7 West outside	387	.12	R	.09	.9
<u>10/6/80</u>	C.E. McCoy	#3 First level	373	.54	R	.42	.9
	L.N. Walker	#3 First level	432	.58	R	.52	.9
	T.A. Casto	#3 Mezzanine	424	1.53	R	1.35	.9
	R.F. Cooper	#7 Roof	417	0.21	R	.18	.9
	K.J. Crites	#7 Roof	403	.37	R	.31	.9
<u>10/8/80</u>	I.D. Paul	#3 Furnace - cleanup	378	1.85	T	1.46	2.73
	Area	#3 Furnace - 1st level	368	0.82	T	-	-
	T.L. Vaughan	#7 Furnace - mezz.	362	8.2	T	6.19	2.73
	Area	#7 West - mezzanine	362	.83	T	-	-

(1) Based on 9% crystalline silica content of dust.

DATE	SAMPLE	DESCRIPTION	SAMPLE			EXPOSURE	
			MINUTES	DUST mg/m ³	TOTAL(T) RESPIRABLE(R)	TWA	OSHA ALLOWED
<u>10/8/80</u>	Area	#7 East - mezzanine	362	1.17	T	-	-
	E.L. Mitchell	#3 Furnace - 1st level	378	0.71	R	0.56	0.9
	R.F. Cooper	#7 Furnace - mezzanine	365	.41	R	.31	.9
<u>10/16/80</u>	F.L. Davis	#7 Furnace - 3rd level	388	4.21	R	3.41	.9
	R.L. Ross	#7 Furnace - 3rd level	385	2.26	R	1.81	.9
	I.D. Paul	#7 Furnace - 3rd level	382	2.30	R	1.83	.9
	B.A. Hambrick	#7 Furnace - 3rd level	375	2.52	R	1.97	.9
	T.L. Vaughan	#7 Furnace - 3rd level	362	1.12	R	0.84	.9
<u>10/24/80</u>	F.L. Davis	#7 Furnace - 2nd level	395	1.22	R	1.00	.9
	R.L. Ross	#7 Furnace - 2nd level	395	.56	R	.46	.9
	T.L. Vaughan	#7 Furnace - 2nd level	385	.95	R	.76	.9
	B.A. Hambrick	#7 Furnace - 2nd level	383	.55	R	.44	.9
	I.D. Paul	#7 Furnace - 1st level	372	.79	R	.61	.9
<u>11/13/80</u>	A.S. Nunn	#7 Second level	406	.9	R	.7	.9
	I.D. Paul	#7 Second level	405	1.2	R	1.0	.9
	C.F. Meadows	#7 Second level	401	1.2	R	1.0	.9

(1) Based on 9% crystalline silica content of dust.

<u>DATE</u>	<u>SAMPLE</u>	<u>DESCRIPTION</u>	<u>SAMPLE</u>			<u>EXPOSURE</u>	
			<u>MINUTES</u>	<u>DUST mg/m3</u>	<u>TOTAL(T) RESPIRABLE(R)</u>	<u>TWA</u>	<u>OSHA ALLOWED</u>
<u>11/13/80</u>	T.A. Casto	#7 Second level	399	0.6	R	0.5	.9
	W.P. Gilmore	#7 Second level	397	1.1	R	0.9	.9
<u>12/11/80</u>	H.L. Williams	#3 First level	402	1.06	R	0.79	.9
	C.F. Meadows	#3 First level	403	.79	R	.67	-
	E.L. Mitchell	#3 First level	402	.34	R	.28	-
	E.L. Walker	#7 First level	397	.08	R	.06	-
	W.P. Gilmore	#7 First level	394	.22	R	.18	-

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