

*File
Plant*

To: J. Marin
Location: Azusa
From: J. L. Boryszewski
Location: Wayne
Extension: 2074

Date: August 2, 1988
Copy to: J. Caporossi - NA
A. W. Delgado - AZ
A. Sze - NA
N. Yin - NA

Subject: IH SURVEY - AZUSA
CRITERION CATALYST CO.
Reference: -

PLAINTIFF'S EXHIBIT

ACC-19

An industrial hygiene survey was conducted at Azusa on May 10-12, 1988. During that time a total of 17 noise samples and 27 chemical exposures samples were taken. The results, listed below on Tables 2-7, show all chemical exposures well below the Permissible Exposure Limits. Exposure to noise, listed on Table 1, ranged from 79.9 to 89.6 dBA.

IH Monitoring

Area sampling was conducted for ammonia, asbestos, nuisance dust, nickel, molybdenum, aluminum, penicillin, hydrogen sulfide and chlortetracycline. Detailed results are found in the attached tables.

<u>Chemical</u>	<u>Area Result</u>	<u>PEL (8-hr.)</u>
Ammonia	<0.85 ppm - 2.79 ppm	25 ppm
Nuisance Dust	0.25 mg/M ³ - 0.52 mg/M ³	10 mg/M ³
Nickel	<0.001 mg/M ³ - 0.034 mg/M ³	1 mg/M ³
Molybdenum	<0.0004 mg/M ³ - 0.001 mg/M ³	5 mg/M ³
Aluminum	0.006 mg/M ³ - 0.056 mg/M ³	10 mg/M ³
Penicillin	0.202 mg/M ³	No PEL
Hydrogen Sulfide	<0.017 ppm	10 ppm
Chlortetracycline	<0.445 mg/M ³	5 mg/M ³
Asbestos	<0.001 f/cc - 0.004 f/cc	0.2 f/cc

Personal sampling was conducted for ammonia, nuisance dusts, nickel, molybdenum, aluminum, penicillin, and chlortetracycline.

<u>Chemical</u>	<u>Result</u>	<u>PEL (8-hr.)</u>
Ammonia	8.31 ppm	25 ppm
Nuisance Dusts	<0.13 mg/M ³ - 0.69 mg/M ³	10 mg/M ³
Nickel	<0.0008 mg/M ³ - 2.76 mg/M ³ *	1 mg/M ³
Molybdenum	0.0008 mg/M ³ - 0.024 mg/M ³	5 mg/M ³
Aluminum	0.016 mg/M ³ - 0.107 mg/M ³	10 mg/M ³
Penicillin	0.111 mg/M ³	No PEL
Chlortetracycline	<0.427 mg/M ³	5 mg/M ³

* Exceeded 8-hr. limit.

0146

IH Monitoring: Recommendations

The Solutions Operator's exposure to nickel exceed the 8-hr. PEL. Additional monitoring is required for this job to assure that this exposure is not the norm. Two 8-hr. personal samples are necessary, at least 7 days apart to establish the exposure level. If both samples are below the PEL, then no further sampling is required. If these results are not below the PEL, then engineering controls, to control exposure, are recommended.

Noise Monitoring - Hearing Conservation Program

Sound level readings were high throughout the work area. Exceptions to this were the Solution Operator (avg. 81.3 dBA) and Mechanic or Supv. (80 dBA). Higher readings of 84.6 to 89.6 dBA were found in the kiln and extrudating areas.

Noise Monitoring: Recommendations

- . Evaluate the feasibility of engineering controls to reduce noise levels in the muller, kiln, impregnator and extrudating areas.
- . Install or replace sound deadening material in the packaging and finish products area.
- . Repair or replace "whining" belts or motors in the packaging and finish products area.
- . Remonitor the affected personnel after installation of engineering controls and/or sound deadening material.

If the employee's average exposures are at or about 85 dBA but below 90 dBA the following are required to comply with the OSHA noise standard:

- . Provide hearing protection. Use is optional unless significant threshold shifts are determined.
- . Provide annual employee training which includes the effect of noise on hearing. This also includes training on the selection, fit, use and care of protectors, and the purpose, procedure of audiometric testing.
- . Provide annual audiometric testing.
- . Retain records of monitoring for two years. Audiograms should be retained for the duration of affected employee's employment.

I am enclosing a copy of an article from the June 22, 1988 "Occupational Health & Safety Letter regarding welding fumes. According to a new NIOSH criteria document, the risk of lung cancer for worker who weld on stainless steel appears to be associated with exposure to fumes that contain nickel and chromium. NIOSH recommends that exposure be reduced to the lowest feasible levels through engineering controls and work practices. The current PEL for

welding fumes is 5 mg/M³. In reviewing our plant files, I have found very little sampling information on welding fumes. If your plant is affected, please monitor for these fumes by October 15th.

CEMIS

I met with your personnel, payroll and production departments regarding updates to CEMIS. The plant is up-to-date on all CEMIS matters.

Thank you for the time you spent with me during my visit. If you need any equipment or have any questions, please don't hesitate to call.



J. L. Boryszewski

JLB:hm
0513g/4644J

Attachments

Emissions of fumes and gases from welding represent one of the most under-publicized occupational health hazards, including a 40 percent increased risk of cancer, according to a new NIOSH criteria document.

The risk of lung cancer for workers who weld on stainless steel appears to be associated with exposure to fumes that contain nickel and chromium, NIOSH said.

The association has apparently not escaped the attention of workers and lawyers who represent them. A growing number of lawsuits have been filed against the manufacturers of the welding rods, not against their own employers.

In its criteria document, NIOSH said it could not recommend a numerical exposure limit for total welding emissions because the composition of welding fumes and gases varies for different welding processes and because the various components of an emission may interact to produce adverse health effects.

Instead, NIOSH recommended that exposures to all welding emissions be reduced to the lowest feasible concentrations using state-of-the-art engineering controls and work practices. Exposure limits for individual chemical or physical agents are to be considered upper boundaries of exposure.

"A large body of evidence from regional occupational mortality data, case control studies and cohort studies indicates that welders generally have a 40 percent increase in relative risk of developing lung cancer as a result of their work experiences," Dr. J. Donald Millar, NIOSH Director, said in the foreword.

"The basis of this excess risk is difficult to determine given uncertainties about smoking habits, possible interactions among the various components of welding emissions, and possible exposures to other occupational carcinogens such as asbestos.

"The severity and prevalence of other respiratory conditions such as chronic bronchitis, pneumonia and decrements in pulmonary function are not well characterized among welders, but these effects have been observed in both smoking and nonsmoking workers in this occupation.

"Excesses in morbidity and mortality among welders appear to exist even when exposures have been reported to be below current OSHA permissible exposure limits for the many individual components of welding emissions."

Metal fume fever and pneumonitis are the most common acute respiratory diseases associated with welding as a result of short-term exposures to high concentrations of fumes and gases, according to the criteria document.

Chronic respiratory diseases such as cancer, pneumoconiosis and bronchitis have been observed among welders exposed to welding fumes and gases, and perhaps asbestos, in some instances over long periods, NIOSH said, adding:

"Other health effects and injuries reported include cardiovascular and gastrointestinal diseases, skin sensitization, hearing loss and eye and musculoskeletal injury. Some evidence indicates a possible relationship between adverse reproductive outcomes and exposure to welding fumes. Because of the diversity of welding techniques, processes and materials used, most of these studies lack sufficient information to associate a specific chemical or physical agent with a particular health effect." It quotes estimates of 700,000 workers directly engaged in welding, but others indicate the total of welders and nearby workers with potential exposure to be closer to 2.5 million.

In one major study, Dr. Kaye Kilburn and colleagues from the Environmental Sciences Lab, University of Southern California School of Medicine, studied 148 white male welders from a shipyard in the Los Angeles harbor. Through questionnaires and spirometric examinations, their condition was compared with Michigan men.

They found that ship construction welders had more chronic bronchitis, wheezing and chest heaviness or pain than did the comparison group. Furthermore, the usual smoking related increase in frequency of symptoms was absent.

"Welders had nose, throat and chest irritation, wheezing, fever, thirst, fatigue, muscle aches and a metallic taste," they reported. "Such symptoms of 'metal fume fever' occurred in over 35 percent of welders and were highest (50 percent) in nonsmoking welders of aluminum. The major finding is a reduction of 20 percent in FVC and FEV₁ in current cigarette smokers. The finding of less than half as much reduction in nonsmokers suggests synergism with exposure to welding fumes with cigarette smoke and with ambient air pollution that adversely affects lung function."

The Society of Health Executive Committee of the American Welding Society declined

TABLE 1

Results of: Noise Sampling
 Criterion Catalyst Company
 Azusa, California
 May 10-12, 1988

CEMIS #: AU00000-01-00
 PEL = 90 dBA (8-Hr. TWA)

Process: HDN-60
 #1-93652180-000

Name/S.S. No.	Date	Time (min.)	Exposure Dose % Based on 80 dB Threshold	Exposure Dose % Based on 90 dB Threshold	8-Hr. TWA dBA	Exceeded 115 dBA
H. Rolden SS#: 561-56-7317 IH Job: 20022 Maint. Mechanic Unit #: 18173	5/10/88	356	24.2	30.6	81.5	No
G. Smith SS#: 570-68-6031 IH Job: 00011 Solutions Op. Unit #: 18170	5/10/88	370	23.5	30.4	81.5	No
Area: CYCLONAIRE Hearing Protection Posted	5/10/88	346	36.1	50.1	85.0	No
R. Lewis SS#: 561-26-5435 IH Job: 00012 Impregnator Op. Unit #: 18182	5/10/88	399	76.0	91.4	89.4*	No
B. Claytor SS#: 292-54-3730 IH Job: 20014 Shift Supv. Unit #: 18172	5/10/88	370	22.5	29.3	81.2	No

* Exceeded OSHA Action Level of 85 dBA.

TABLE 1 (Cont.)

Results of: Noise Sampling
 Criterion Catalyst Company
 Azusa, California
 May 10-12, 1988

CEMIS #: AU00000-01-00
 PEL = 90 dBA (8-Hr. TWA)

Process: HDN-60
 #1-93652180-000

Name/S.S. No.	Date	Time (min.)	Exposure Dose % Based on 80 dB Threshold	Exposure Dose % Based on 90 db Threshold	8-Hr. TWA dBA	Exceeded 115 dBA
R. Lewis SS#: 561-26-5435 IH Job: 00012 Impreg. Op. Unit #: 18179	5/11/88	424	81.5	91.8	89.4*	Yes
Area: Dump Sink AFI	5/11/88	376	02.6	03.4	65.7	No
Area: Packaging AFI	5/11/88	374	01.6	02.1	62.3	No
P. Herrera SS#: 564-94-7889 IH Job: 00013 Kiln Op. Unit #: 18181 (Filling in for Kiln Op.)	5/11/88	408	74.7	87.0	89.0*	No
S. Yu SS#: 579-80-2956 IH Job: 00002 Ext. Op. Unit #: 18174	5/11/88	379	57.8	69.8	87.4*	Yes

* Exceeded OSHA Action Level of 85 dBA.

TABLE 1 (Cont.)

Results of: Noise Sampling
 Criterion Catalyst Company
 Azusa, California
 May 10-12, 1988

CEMIS #: AU00000-01-00
 PEL = 90 dBA (8-Hr. TWA)

Process: HDN-60
 #1-93652180-000

Name/S.S. No.	Date	Time (min.)	Exposure Dose		8-Hr. TWA dBA	Exceeded 115 dBA
			% Based on 80 dB Threshold	% Based on 90 dB Threshold		
P. Herrera SS#: 564-94-7889 IH Job: 00013 Kiln Op. Unit #: 18179 (Filling in for Kiln Op.)	5/12/88	429	84.7	94.1	89.6*	Yes
R. Lewis SS#: 561-26-5435 IH Job: 00012 Imp. Op. Unit #: 18170	5/12/88	431	84.1	93.4	89.5*	No
D. Grush SS#: 571-78-8285 IH Job: Z0022 Maint. Mech. Unit #: 18173	5/12/88	411	56.1	65.0	86.9*	No

* Exceeded OSHA Action Level of 85 dBA.

TABLE 2

Results of: Ammonia Sampling
 Criterion Catalyst Co.
 May 10-12, 1988

CAS #: 7664-41-70
 PEL = 25 ppm (8-HR TWA)
 35 ppm (15-min. STEL)

Process: HDN-60
 1-93652180-000

Sample #	Name Job/SS#	Date	Time (min.)	Flow Rate (cc)	Volume (l)	Results (ppm)	8-Hr. TWA Exposure (ppm)
30	Area: By Muller C Top Level	5/10/88	330	103	34.0	<0.846	<0.582
32	S. Yu SS #: 579-80-2956 IH Job: 00002 Ext. Op.	5/12/88	445	126	56.1	8.963	8.31
33	Area: By Muller's Desk Top Level	5/12/88	441	158	69.7	2.791	2.56
31	Blank						

TABLE 3

Results of: Nuisance Dusts (Total Dust) Sampling
Criterion Catalyst Co.
May 10-12, 1988

Process: HDN-60
#1-93652180-000

Sample No.	Job/Shift	Date	Time (min.)	Flow Rate (cc)	Volume (l)	Total Dust (PEL = 10mg/M ³) Result 8-Hr. TWA (mg/M ³)	Exposure (mg/M ³)	Nickel (PEL = 1mg/M ³) Result 8-Hr. TWA (mg/M ³)	Exposure (mg/M ³)	Molybdenum (PEL = 5mg/M ³) Result 8-Hr. TWA (mg/M ³)	Exposure (mg/M ³)	Aluminum (PEL = 10mg/M ³) Result 8-Hr. TWA (mg/M ³)	Exposure (mg/M ³)
1	Area: Tank 300-30 Top Level of Metal Soln.	5/10/88	339	1710	579.7	0.518	0.366	0.034	0.024	0.001	0.001	0.022	0.016
2	R. Herrera SSF: 564-94-7889 IH Job: 00013 Klin Op. (Filling in for Klin Op.)	5/10/88	403	1580	636.7	< 0.157	< 0.113	0.006	0.005	0.005	0.004	0.022	0.018
3	G. Smith SSF: 570-68-6031 IH Job: 00011 Soln. Op.	5/10/88	378	1630	616.1	—	—	3.505	2.760*	0.026	0.020	0.036	0.028
4	R. Lewis SSF: 561-26-5435 IH Job: 00012 Impreg. Op.	5/10/88	407	1740	708.2	0.226	0.192	0.022	0.019	0.01	0.008	0.034	0.046
5	B. Claytor SSF: 292-54-3730 IH Job: 20014 Shift Supv.	5/10/88	377	1360	512.7	0.195	0.153	0.001	0.001	0.002	0.002	0.028	0.021
6	Blank												
7	P. Herrera SSF: 564-94-7889 IH Job: 00013 Klin Op. (Filling in for Klin Op.)	5/11/88	485	1520	737.2	0.434	0.439	0.005	0.005	0.024	0.014	0.069	0.069
8	G. Smith SSF: 570-68-6031 IH Job: 00011 Soln. Op.	5/11/88	427	1690	721.6	0.596	0.530	0.382	0.339	0.004	0.003	0.028	0.024
9	R. Smith SSF: 561-26-5435 IH Job: 00012 Impreg. Op.	5/11/88	430	1650	709.5	0.296	0.265	0.006	0.005	0.0106	0.009	0.037	0.033
10	B. Claytor SSF: 292-54-3730 IH Job: 20014 Shift Supv.	5/11/88	427	1570	670.4	0.343	0.305	< 0.001	< 0.0008	0.0009	0.0008	0.037	0.032
11	D. Lamb SSF: 149-30-4316 IH Job: 20023 Maint. Supv.	5/12/88	433	1610	697.1	0.258	0.232	< 0.001	< 0.0009	0.0016	0.001	0.044	0.039
12	D. Grush Invalid - Pump died after 148 min.	5/12/88											
13	Area: Son Mill	5/12/88	432	1580	682.6	0.293	0.263	0.001	0.0009	0.0076	0.006	0.056	0.050
14	Area: Finished Products	5/12/88	436	1640	715.0	0.252	0.228	< 0.001	< 0.0009	< 0.0004	< 0.0003	0.006	0.005
15	M. Smith SSF: 550-74-8588 IH Job: 20014 Shipping Clerk	5/13/88	450	1450	652.5	0.736	0.69	< 0.001	< 0.0009	0.021	0.020	0.115	0.107

*Exceed 8-Hr. TWA.

TABLE 4

Results of: Penicillin Sampling
 Criterion Catalyst Co.
 May 10-12, 1988

Process: AFI
 2-36700000-000
 CAS#: 1406-05-90

Sample #	Name Job/SS#	Date	Time (min.)	Flow Rate (cc)	Volume (l)	Results (mg/M ³)	8-Hr. TWA (mg/M ³)
50	A. Quintana SS#: 559-42-6246 IH Job: 00050 AFI Op.	5/11/88	401	1390	557.4	0.133	0.111
51	Area: Dump Sink AFI	5/11/88	380	1540	585.2	0.202	0.160
52	Blank						

JB/hm
 5/4368J

TABLE 5

Results of: Hydrogen Sulfide Sampling
 Criterion Catalyst Co.
 May 10-12, 1988

CAS: 7783-06-4
 PEL: 10 ppm (8-Hr. TWA)
 15 ppm (15-min. STEL)
 50 ppm (Ceiling)

Sample #	Name Job/SS#	Date	Time (min.)	Flow Rate (cc)	Volume (l)	Results (ppm)	8-Hr. TWA Exposure (ppm)
60	Area: Scrubber	5/18/88	412	510	201.1	<0.017	<0.114

JB/hm
 5/4368J

TABLE 6

Results of: Chlortetracycline Sampling
 Criterion Catalyst Company
 Azusa, California
 May 10-12, 1988

CAS #: 57-62-5
 PEL = 5 mg/m³ (8-Hr. TWA)
 PROCESS = AFI
 2-36700000-000

Sample #	Name/IH Job/SS#	Date	Time (Min.)	Flow Rate (cc)	Vol. (l)	Results mg/M ³	8-Hr. TWA Results (mg/M ³)
40	A. Quintana SS#: 559-42-6246 IH Job: 00050 AFI Op.	5/11/88	395	1220	481.9	<0.519	<0.427
41	Area: Packaging Area	5/11/88	380	1480	562.4	<0.445	---
42	Blank						

JB:sa
 07/4455J

TABLE 7

Results of: Noise Sampling
 Criterion Catalyst Company
 Azusa, California
 May 10-12, 1988

CAS #: 1332-21-4
 PEL = 1 0.2 f/cc (8-hr. TWA)
 0.1 f/cc (Action Level)

Sample #	Area	Date	Time (Min.)	Flow Rate (cc)	Vol. (l)	Results (f/cc > 5 μ m)
20	Utility Area: Boiler #4	5/10/88	375	1480	555.0	0.004
21	Utility Area: South of Boiler #4	5/10/88	370	1650	610.5	0.004
22	Utility Area: East Exit Door	5/10/88	368	1570	577.8	<0.001
23	Blank					

JLB:hm
 0513g/4644J

1988 AZUSA CORRESPONDENCE