UNION CARBIDE

INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION P.O. BOX 1029, GRAND JUNCTION, COLORADO 81502
METALS DIVISION (303) 245-3700

To (Name) D. L. Haywood
Division Metals - P2599
Location Danbury, CT
Area

Date November 29, 1982

Originating Dept. E/R-Occupational Health

Area

Copy to R. F. X. Fusaro
J. L. Myers
E. A. Piersall
R. W. Rebholz
W. C. Thurber
R. F. Wolff

Subject Reporting of "Health and Safety Studies to EPA" under TSCA Section 8(d) (4.3.12.2.2)

This confirms my telephone conversation of November 24, 1982, with Mr. R. G. Hanlon. The only potentially reportable items that have been identified by the Metals Division are as follows:

1. A 1966 report by the Mellon Institute on our California Asbestos (copy of coversheet attached).

2. A 1971 report by the Mellon Institute on R6-244 Asbestos (copy of coversheet attached).

3. Several summaries comparing the results of sputum cytology testing of employees at our King City mill to a non-mining population. Two representative examples are attached.

4. A deposition presented by Dr. Hyde in connection with a third party liability case in South Carolina where UCC was a defendant. A copy is being obtained and will be provided for your review as soon as it is available.

The first two items, i.e., the Mellon Institute studies, are presently defined as confidential. Since they are more than 10 years old, however, they do not appear to be reportable. On this basis, we do not plan to review them in terms of updated confidentiality considerations unless notified that this needs to be done.

The third item relating to sputum cytology testing appears to be "grey" in terms of reportability. Dr. Saccomanno has done no more than look over the results and conclude informally that nothing out of the ordinary is occurring at King City. (E. A. Piersall letter of November 22, 1977.)

UCC 010094

PLAINTIFF'S EXHIBIT
UC-4212

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The attempt to formalize this as shown in the January 10, 1978, letter of O. J. Malacarne is, unfortunately, misleading. The "non-miner" reference population used for the analysis was made up of persons who checked into a local hospital and were willing to provide sputum samples for analysis. It is not necessarily representative of even the general population and was not matched in any way with the King City workers. The results shown are thus largely meaningless.

This type of analysis was carried out for several years until the problem was recognized and the effort was discontinued. Please advise if these and other similar summaries need to be reported.

The final item regarding the deposition also seems to be of questionable reportability. Dr. Hyde has served as the physician for the King City asbestos mill for many years. He has operated on a fee-for-services basis and is not under contract. He has all of the medical records but beyond the deposition mentioned above has made no formal attempt to analyze the results in detail. Advise on reportability is also needed here.

Very truly yours,

H. B. Rhodes

HBR/sw

Attachment

Union Carbide trial exhibit UC-4212: H. B. Rhodes to D. L. Haywood on Reporting Health and Safety Studies to EP… Published by AsbestosClaims.Law
ACL Doc 18805 · Page 2 of 14 **asbestosclaims.law/library/18805/2**

Confidential
Special Report 34-70
7 Pages

R: 9-3-71

Chemical Hygiene Fellowship
MELLON INSTITUTE
Carnegie-Mellon University

Calidria Asbestos-Resin Grade RG 244

Tracheal Insufflation of Rat Lungs with Interpretation of Pathology after 30, 60, 90 and 180 Days

Editor: C. P. Carpenter Contributors: D. L. Geary, Jr., E. R. Kinkead, R. C. Myers, D. J. Nachreiner
For: UNION CARBIDE CORPORATION, Chemicals and Plastics Operations Division

Sample

A 500-gram sample of Resin Grade RG 244 UCC Calidria Asbestos was received 11-30-70, from King City, California, pursuant to arrangements made by Paul McDaniel of the New York Office. The sample was identified by the Chemical Hygiene Fellowship #33-251.

Tracheal Insufflation

A 1% (W/V) suspension of the RG 244 sample was prepared in 0.85% saline. All needles, syringes and suspensions were sterilized prior to use. Either 1 ml or 0.5 ml amounts of the sterile 1% suspension were injected into the rat lung through the trachea, exposed by blunt dissection, after a midline cervical incision. Following injection of these 200 to 300 gram, male albino, Harlan Wistar rats the incisions were closed with Michael wound clamps until healing ensued.

A total of 13 rats were dosed with 1 ml and 15 with 0.5 ml of the 1% suspension while 11 control rats received 1 ml of sterile 0.85% NaCl. Three rats from each asbestos dosed group and 2 controls were killed for histopathologic examination of the lung after intervals of 30, 60 and 90 days which left groups of 4, 6 and 5 rats on the 1 ml, 0.5 ml asbestos and control for the 180 day sacrifice.

Summary of Microscopic Pathology Found 30, 60, 90 and 180 Days Following Tracheal Insufflation of Rats

The 30-day pathology was marked by the presence of granulation tissue with thickening of the structural elements of the lung (stroma) and the accumulation of giant cells often associated with foreign bodies.

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Confidential

Report 29-55

4.1.5.27

R: 7-8-66

7-12-66

12 pages

MELLON INSTITUTE

Special Report

The Fibrogenic Potential of Asbestos Products via Intraperitoneal Injection in Guinea Pigs, Rats and Rabbits and by the Intratracheal Route in the Rat

Chemicals Division, Union Carbide Corporation Industrial Fellowship 274-29

Summary

The results of intraperitoneal administration indicate that the asbestos products studied produced fibrotic lesions of the visceral organs in rats and guinea pigs regardless of fiber length. Of the three products, CMS-100 (refined fiber), produces the most severe reaction. JT-100 (standard fiber) and JM-3K (Johns Manville screened fiber) produced similar but less severe reactions. The results on rabbits were inconclusive.

Both JT-100 and CMS-100 produced specific lesions in rats by the intratracheal route but with JT-100 they were more severe. No lesions were found in the rats which received JM-3K fibers.

These results indicate that these three asbestos fibers may be fibrogenic by either route. No specific lesions were observed in the lungs of the JM-3K intratracheal rats, but only two rats survived to be examined.

Samples

The following samples were shipped to Mellon Institute at the request of Mr. Paul W. McDaniel who furnished the descriptive information.

Designation of Asbestos Product	Source	Quantity	Date Received	M. I. Sample Number
*CTS-100 Fiber (same as JT-100 Fiber) "Standard Fiber" containing impurities in the form of clay and magnetite. A short fiber.	Sterling Forest	8 oz.	8-14-63	26-220
*CMS-100 Fiber "Refined Fiber" with lesser impurities than JT-100. A short fiber.	Sterling Forest	8 oz.	8-14-63	26-219

* The individual fibers for most part had lengths of 0.9 to 10 microns, but there were some as long as 30 microns and some that were less than 0.5 micron. The diameters of the fiber were generally 0.3 to 1.2 microns, but there were smaller sizes noted. The clay-magnetite particles were mostly 0.5 to 3.0 microns in diameter but there were some present as small as 0.08 micron (by electron microscope).

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UC [illegible]

2.3.7.2

INTERNAL CORRESPONDENCE

[illegible]

P O BOX 1020, GRAND JUNCTION, COLORADO [illegible]

To (Name) Dr. H. B. Rhodes
Division Metals Division
Location P. O. Box 579
Niagara Falls, NY 14301

Date January 10, 1978

Originating Dept.

Answering letter date

Copy to Messrs. E. A. Piersall
J. W. Rawlings
E. W. Shortridge
W. C. Thurber

Subject Sputum Cytology Results - King City

Dear Harry:

As per our telephone conversation, I am attaching information regarding the Fourth Quarter 1977 sputum cytology survey results from King City. I have also included the following additional information for your use:

a) Smoking history and work history of the King City Plant population by age group (Table II)

b) A summary of a survey by Dr. Saccomanno for 2,025 non-miners giving sputum cytology results for smokers and non-smokers by age group (Table III)

c) Original data sheets prepared by Dr. Saccomanno for miners and non-miners.

In Table I, I have applied Dr. Saccomanno's data for non-miners against the King City population. I appreciate the dangers of doing this, since the King City population is small (64 people) and is not necessarily similar to Dr. Saccomanno's population in regard to sex, type of work, etc. The results in Table I are interesting, however, and indicate the following:

a) For non-smokers, where the King City population had two employees with a mild atypical and none with moderate atypical cytology, Dr. Saccomanno's data indicated that we should have had eight employees with mild atypical and one with moderate atypical cytology.

b) For employees who smoke or did smoke, the King City population had 10 employees with mild atypical and none with moderate atypical cytology. Dr. Saccomanno's data indicated that we should have had 25 employees with mild atypical and six with moderate atypical cytology.

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c) Considering all the employees as a group, our incidence of 12 employees with mild atypical compares to a prediction of 33 employees with mild atypical and eight with moderate atypical cytology. The grouping comparison is not too far off base, since the ratio of smokers/non-smokers for the King City population closely parallels the non-miner population in total and by age group.

As you pointed out on the telephone, we are probably working with a "healthier" population at King City than Dr. Saccomanno used. It does seem important to me, though, that the comparisons indicate that our frequency of mild atypical cytology is no worse than Dr. Saccomanno's population of non-miners. I'm sure that, if the comparison were unfavorable, we would be greatly concerned.

I don't know if we can do much with this information in terms of outside publicity. Would you review our results or have someone well versed in the validity of these types of comparison review the data. Let me know what you find out. If you need more information, let us know.

Very truly yours,

O. J. Malacarne

OJM:gt

Encls.

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TABLE I

KING CITY SPUTUM CYTOLOGY COMPARISON

ACTUAL VERSUS PREDICTED FROM NON-MINER POPULATION
TESTED BY DR. SACCOMANNO

Age Groups	Normal Regular		Mild Atypical		Moderate Atypical		Group Totals
	A*	P*	A	P	A	P	
Non-Smokers							
20-29	9	6	1	3	0	1	10
30-39	8	4	0	4	0	0	8
40-49	1	1	1	1	0	0	2
50-59	0	0	0	0	0	0	0
60-69	0	0	0	0	0	0	0
	18	11	2	8	0	1	20
Smokers							
20-29	16	6	1	10	0	1	17
30-39	8	3	3	7	0	1	11
40-49	6	2	2	4	0	2	8
50-59	3	1	2	3	0	1	5
60-69	1	1	2	1	0	1	3
	34	13	10	25	0	6	44
Grouped Data							
20-29	25	12	2	13	0	1	27
30-39	16	6	3	11	0	2	19
40-49	7	3	3	5	0	2	10
50-59	3	1	2	3	0	1	5
60-69	1	1	2	1	0	1	3
	62	23	12	33	0	8	64

*Actual
*Predicted

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TABLE II

KING CITY SPUTUM CYTOLOGY SUMMARY

AND POPULATION DESCRIPTION

Category	Age Groups						Dist.
	20-29	30-39	40-49	50-59	60-69	Total	%
Employees	27	19	10	5	3	64	-
Distribution %	42.2	29.7	15.6	7.8	4.7	100	-
Smoking Histories							
Non-Smokers	10	8	2	0	0	20	-
Did Smoke	0	2	2	1	2	7	-
Smokers	17	9	6	4	1	37	-
Total Smokers	17	11	8	5	3	44	-
Distribution Smoke %	58.6	57.9	80.0	100.0	100.0	68.8	-
Non-Smoke %	37.0	41.1	20.0	0.0	0.0	31.2	-
King City Work Exposure							
0- 5 years	21	3	3	0	0	27	42.2%
5-10 years	5	5	1	1	0	12	18.8%
10-15 years	1	11	4	4	3	23	35.9%
15+ years	0	0	2	0	0	2	3.1%
							100.0%

Sputum Cytology Results

	NS*	S*	NS	S	NS	S	NS	S	NS	S		
Normal or Regular	9	16	8	8	1	6	0	3	0	1	52	81.2
Mild	1	1	0	3	1	2	0	2	0	2	12	18.8
Distribution Norm-Reg (%)	90	94	100	73	50	75	-	60	-	33		
Mild (%)	10	6	0	17	50	25	-	40	-	67		

Note: Two employees (3.0%) who did smoke were in the 20-29 age group and 0-5 year work exposure category gave inconclusive tests and are not included in the tabulations.

*Non-Smokers
*Smokers or Did Smoke

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TABLE III

SPUTUM CYTOLOGY COMPARISON

DR. SACCOMANNO DATA - PULMONARY CYTOLOGY - NON-MINERS

Non-Miner Population Distribution: Percent By Age Group

Category	Age Groups 20-29		30-39		40-49		50-59		60-69		Totals	
	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S
Normal/Regular(%)	23.0	22.6	15.7	13.5	5.9	16.7	3.8	12.8	2.9	10.3	8.2	14.4
Mild (%)	13.5	35.3	17.4	42.6	10.8	41.8	6.6	42.4	7.6	36.0	10.2	40.0
Moderate (%)	2.0	3.6	1.3	8.5	2.7	18.1	2.6	20.1	4.9	21.3	2.9	16.1
Marked (%)	0.0	0.0	0.0	1.0	0.2	2.7	0.7	5.0	.7	8.3	0.4	4.0
Carcinoma (%)	0.0	0.0	0.0	0.0	0.0	1.1	1.7	4.3	1.3	6.7	0.8	3.0
Subtotal (%)	38.5	61.5	34.4	65.6	19.6	80.4	15.4	84.6	17.4	82.6	22.5	77.5
Number of Cases	97	155	105	200	87	356	89	489	78	369	456	1,569
	252		305		443		578		447		2,025	

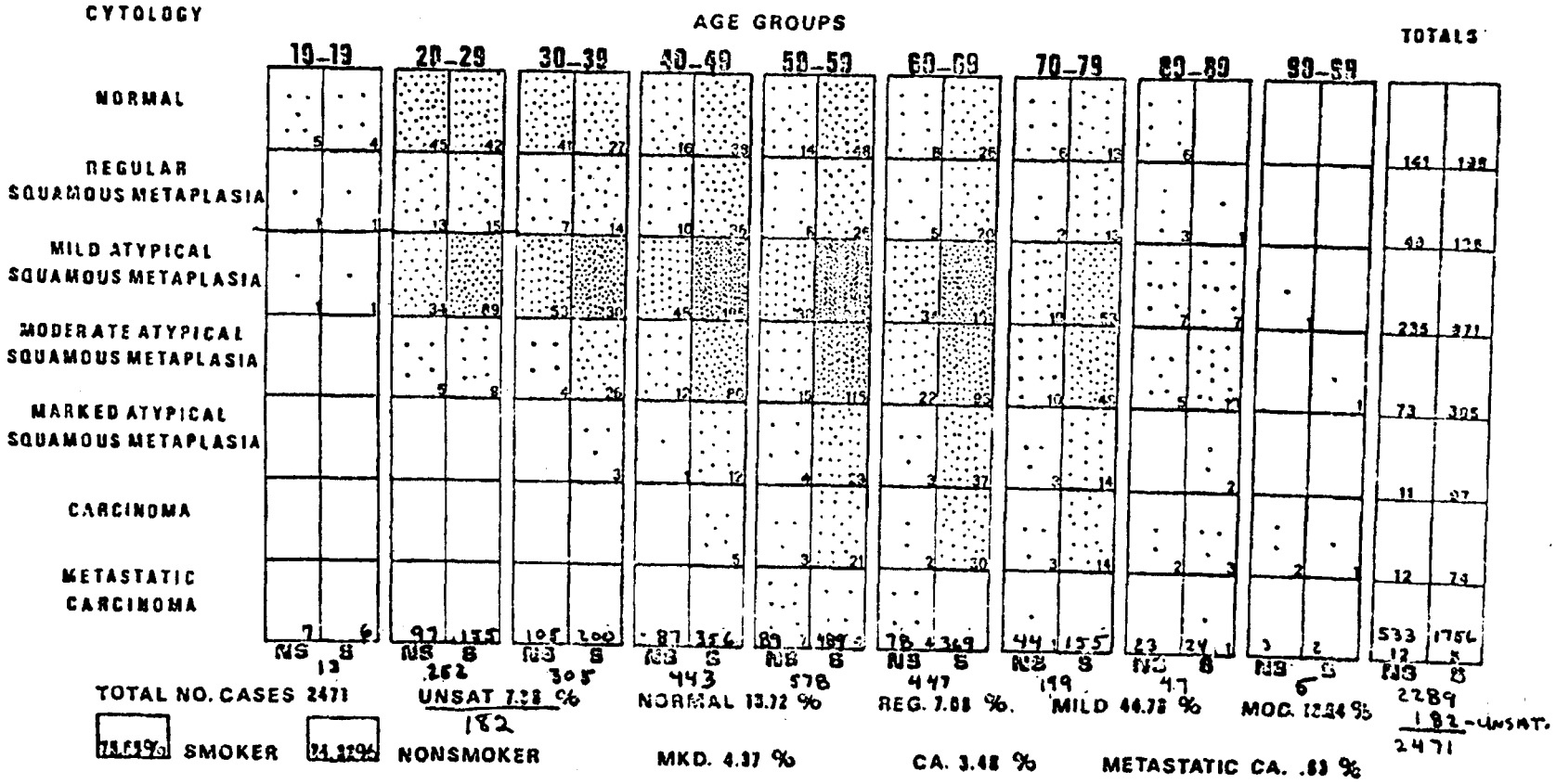
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UCC 010103

PULMONARY CYTOLOGY

NONMINERS



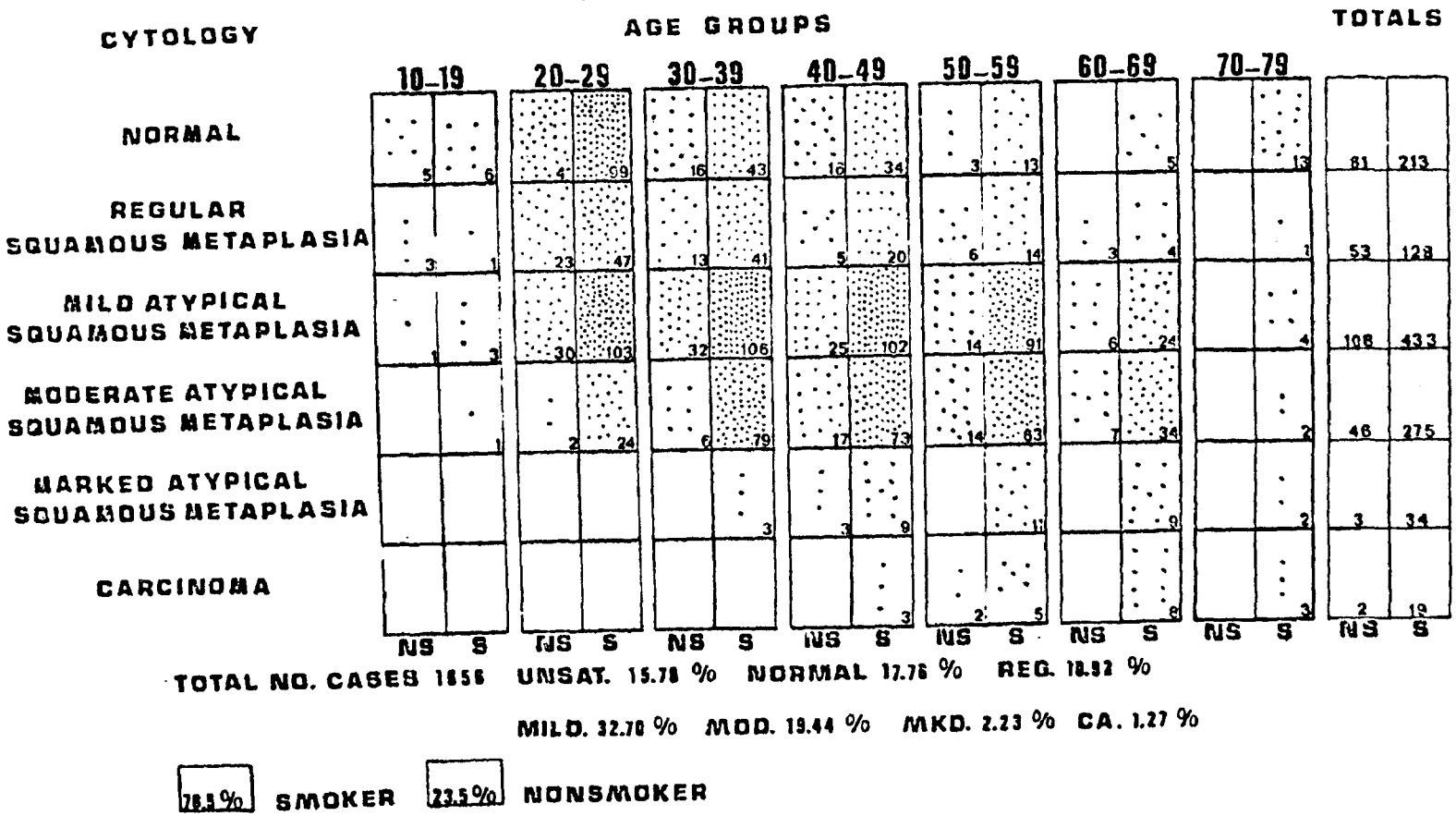
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UCC 010104

PULMONARY CYTOLOGY

URANIUM MINERS



TOTAL NO. CASES 1856 UNSAT. 15.78 % NORMAL 17.78 % REG. 18.82 %

MILD. 32.76 % MOD. 19.44 % MKD. 2.23 % CA. 1.27 %

76.5% SMOKER 23.5% NONSMOKER

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UC 149-2

UNION CARBIDE INTERNAL CORRESPONDENCE

2.3.2.2.3

METALS DIVISION • P.O. BOX 1029, GRAND JUNCTION, COLORADO 81501

To (Name) Mr. W. C. Thurber
Division Metals
Location 270 Park Avenue 38th Floor
New York, New York

Date November 22, 1977
Originating Dept. Safety
Answering letter date
Subject

Copy to Messrs. O. J. Malacarne
E. W. Shortridge

A summary of sputum cytology results done for King City workers in 1977 indicated that

66 people were tested
50 were totally negative
12 were classified "mild atypia" (no concern but repeat specimen in a year).

Of the 66 people involved, 37 had from 5 to ~~more than~~ 15 years employment at King City. Twenty people have quit smoking and 24 remain smokers but only away from work since the recent ban on smoking.

Dr. Saccomanno, Chief Pathologist, St. Mary's Hospital, Grand Junction, Colorado, who directed and evaluated the sputum cytology noted that results of this group of employees were comparable with the general population. He indicated that the 12 mild atypia cases was consistant with what could be expected of a similar group without asbestos exposure and that for 66 general population samples he would expect one or two classifications in the next higher category "moderate atypia" whereas none were found in the worker samples.

E. A. Piersall

EAP/brs

RECEIVED
NOV 28 1977

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GENO SACCOMANNO, M.D.
RICHARD P. SAUNDERS, M.D.
M. G. KLEIN, M.D.

OCT 24 1977

RECEIVED
OCT 20 1977
UNION CARBIDE
KING CITY, CA.

DRS. SACCOMANNO, SAUNDERS AND KLEIN
PATHOLOGISTS, P.C.
ST. MARY'S HOSPITAL
GRAND JUNCTION, COLORADO 81501

October 17, 1977

Duane F. Hyde, M.D.
Southern Monterey County Medical Group
210 Canal Street
King City, California 93930

Dear Doctor Hyde:

My suggestion on followup is as follows:

Mild atypia: No concern; repeat in a year or six months, depending on followup basis.

Moderate atypia: Repeat in six months, with no other concern.

Marked atypia: Repeat specimen immediately, take chest x-ray if second specimen is marked, then repeat sputums every three-four months and take chest x-ray every six months.

Carcinoma in situ: Repeat sputum immediately, and if positive again, take x-ray of chest and do fiberoptic for localization.

Invasive Carcinoma: Repeat sputum, chest x-ray, and possible surgery if lesion is resectable or localized.

I really don't have much of an opinion as to what stance on continued employment the company should take when the patients show a marked atypia. When we call a case marked atypia, the chances of this patient developing malignancy in five years, if he continues to smoke, are about 50:50. If he quits, I would guess it would be about 25% in five years, and these are only good estimates. You can see that the dye is cast at this point and not much can be gained, but the company has, I'm sure, their own policy.

Too, I think the company should have a non-smoking, quit smoking, on-going program continuously, and if possible, not hire cigarette smokers or smokers that started smoking prior to age 18.

I hope this is satisfactory and that you have no objection to my sending a copy of this letter to Union Carbide.

Sincerely,

Geno Saccomanno, Ph.D., M.D.
Chief Pathologist
St. Mary's Hospital and Medical Center

GS:wt

cc: Mr. R. J. Kronkhyte
Union Carbide Corporation

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