PPG INDUSTRIES

INTER-OFFICE CORRESPONDENCE

Date: September 2, 1977

From: Z. G. Bell, Jr.

Location: 10 West

Subject: Vinyl Chloride angiosarcoma cases world-wide

To: H. B. Lovejoy, M.D.
M. Perez-Roig, M.D.

As you can see by the attached comments by Dr. Stafford, ICI. There is pretty good accounting of the Vinyl Chloride Polymerization Angiosarcoma cases except for some of the communists countries. I thought you may wish to be kept informed as to the incidence of Angiosarcoma Cases that are appearing.

Zeb G. Bell, Jr.

/alc

Attachment

cc: F. C. Dehn
L. B. Grant, M.D.

SL 028898

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THE DOW CHEMICAL COMPANY

BENNETT BUILDING
2030 DOW CENTER
MIDLAND, MICHIGAN 48640

August 29, 1977

J. T. Seawell, MCA
Zeb Bell, PPG
Walt Harris, UNIROYAL
M. N. Johnson, MD., BFG
Howard Kusnetz, SHELL
Gary TerHaar, ETHYL
Mayo Smith, AIR PRODUCTS
R. N. Wheeler, UNION CARBIDE
W. E. Nichols, ORGANIZATION RESOURCES COUNSELORS, INC.
John Lawrence, SPI
John Stafford, ICI
Clark Cooper, MD., EQUITABLE ENVIRONMENTAL HEALTH

Dr. John Stafford of ICI was kind enough to send me this summary and to give me permission to send it to NIOSH. If you can help Dr. Stafford by answering some of his questions or if you find any errors please communicate to me and/or NIOSH soon.

Dr. Stafford also asked that I remind you the list is out of date already and will need constant revision. I suspect he is correct since we will be reaping the harvest of the massive exposure of years past.

T. R. Torkelson, Chairman
MCA Technical Panel on Vinyl Chloride Research

Enclosure

mh

SL 028899

THE DOW CHEMICAL COMPANY

BENNETT BUILDING
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MIDLAND, MICHIGAN 48640

August 22, 1977

Robert Spirtas, PhD.
Division of Surveillance
NIOSH
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, OH 45206

Dear Dr. Spirtas:

I recently received correspondence from Dr. John Stafford of ICI who was kind enough to send information he has collected on angiosarcoma cases associated with vinyl chloride world-wide. Since this information appears to be extremely valuable and also somewhat different from that supplied me March 31, 1977 by Rose Kaminski of your group, I've received Dr. Stafford's permission to relay some tables and comments to your group and to Dr. Johnson.

Table A has been updated to include German Case #10 described in a letter to me dated August 5, 1977.

Table A
AS Cases (Alive & Dead) in PVC Monomer & Polymerization Plants

Belgium	1	
Canada	10	
Czechoslovakia	2	
France	8	
Germany	9*	(a) 1 alive (b) NIOSH 08 is not known to CEFIC
Italy	2**	
Japan	1	
Norway	1	
Sweden	4	1 alive
UK	2***	
USA	21****	2 alive
Yugoslavia	2	
	63	
Alive	4	
Dead	59	

* Excludes Ge 03 pesticide can filler
** Excludes It 01 bag extruder
*** Excludes UK 02 which has been totally discounted in UK
**** Excludes US 14 and 15 so called non-polymerisation cases which I suspect are discounted in many US circles.

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SL 028900

The following sixteen comments concerning these cases are quoted from a letter by Dr. Stafford.

1	Belgium	This death in Belgium on 29 June 1976 is well known. I am astonished NIOSH have no record of it.
2	Canada	Like NIOSH, I have based my table on the as yet unpublished paper from Laval University. The deaths of so many men born in the 1911-1920 decade and starting work in the 1941-5 war years on VCM is remarkable and depressing.
3	Czechoslovakia	This information has been static for some years. We hear no news from this country at all.
4	France	I have missed out columns 4 and 5 in your copy. The French industry has been very good in telling me which specific factories had the cases but I do not know whether I am at liberty to pass on the information. I will check on this. France has had a bad year in 1976. NIOSH do not seem to have the 8th French case, a man who died on 30 January 1977. Also NIOSH have France 03 as alive when he died in 1975 (29 June 1975).
5	Germany	I have made some minor switches and alterations to bring my table into line with NIOSH. I am uncertain about the classification of Case 03. I am flabbergasted by Case 08 about which I know nothing and about which I will have to question my German friends. The "non-polymerisation" case 06, an "assistant factory chemist," looks like my "polyworker" from Hoechst. I will have to check this out.
6	Italy	I never know what to do with Case 01. From what I can discover the man worked in a relatively unventilated room and suffered high exposures. Maltoni claims credit for remembering man's history and the odd sections he had seen.
7	Japan	I have no further news from Japan. I suspect they have more than 1.AS;
8	Norway	I have made some small changes to take in NIOSH data.
9	Sweden	Case 02 was of man who had high exposures in VCM production and hwo, it is remembered, also worked on polymerisation. Case 04 has occured and we await full details. NIOSH do not seem to know 03 or 04.

10 UK

The non-polymerisation Case 02 was at a cloth spreading company in Glasgow, Scotland. The man had been exposed to many chemicals. The case is totally discounted in the UK and we have taken it off our lists.

11 USA

I have made some minor corrections to my listings to bring them into line with NIOSH. Is your Case 18 the Charlie Arthur of the Rolling Stone Magazine article which gives slightly different data from NIOSH? Which company and factory has Case 23? (In telephone conversation Dr. Stafford also stated that it is generally understood in Europe that NIOSH Cases 14 & 15 from non-polymerisation workers are not considered to be related to VCM because of Dr. Louis B. Thomas' histological evaluations).

12 Yugoslavia

No change for some years. No new information.

13 Reconciliation

	All AS cases by NIOSH	myself
NIOSH Table 1	56 cases	63 cases
	7 "	5 non-polymerisation cases (some dubious)
	63 Total	68*

*Additional to NIOSH

France	08
Sweden	03 & 04
Belgium	01
German	10
	5

14 PVC Producing Countries without AS Cases

So far as I know, there have been no AS Cases in Austria, Finland, Greece, Holland, Portugal, Spain, and Switzerland which produce PVC in Europe. There have been no cases in Australia. I have no data on the USSR or any other part of the World.

It would of course be necessary to examine the "no case" countries more closely with relation to date of start-up of manufacture and also build-up of scale/numbers exposed at given dates. Looking at the European no case list, I believe the start-up dates of PVC production were:

Austria	1953
Spain	1953
Holland	1950
Finland	1972
Switzerland	1945
Portugal	1962
Greece	recent?

Some factories eg Switzerland and Holland have been in action longer than the latency period. There is a lot ofwork to be done to correlate capacity build-up, process and plant nature, plant practice in past etc with incidence of AS but regrettably we still lack data here.

15 Capacity v No of AS Cases

You made the point that the AS cases in Europe are more numerous than in the USA but that capacity is in step with this. I do not know about capacity but if one takes a "normal" year for consumption (ie 1974), North America looks high in AS cases.

	PVC Consumption	AS Cases to Date
North America	2.2 m te	31
Western Europe	3.4	26

The Canadian situation does however cause a heavy distortion in the North American situation - if the Canadian cases are deducted however, I still think the US incidence looks high in relation to consumption but this may not be the correct yardstick.

16 Clustering of Results

The clustering of AS cases in a few places is a remarkable feature of this whole story.

Shawinigan	10	AS cases
BFG Louisville	10	
UCC & Charleston	4	
Kemanord	4	
Dynamit Nobel	3/4	(4 if one counts the filling operation)
French Plant	4	
German Plant	2	
BFG Avon Lake	2	
Goodyear Niagara	2	
	42	out of a total of 62!

There may be further clusters of 2 in Europe but I am uncertain of them and will not make inspired guesses here. I suspect that the Czechoslovakian and Yugoslavian deaths are also clusters of 2. However, if we could explain the clusters of 10 and 4, we could perhaps gain a lot of useful data on VCM as a human carcinogen. Similarly we could analyz why some plants have had only 1 case so far and why many have had 0. Naturally, people who have had a "cluster" will be sensitive about others probing into their affairs but I do believe that lack of such data has been a dis-service to the whole industry.

In the DuPont epidemiological survey on acrylonitrile at their Camden, SC plant, I was struck by their observaiton that the excess cancers occured among employees involved in their start-up operation 1950-52. I wonder how many of our VCM clusters were among employees who were involved in start-up or pilot plant type operations. I believe Dr. M. N. Johnson told us once that Louisville was very much a pilot plant in its early days! (End quote)

I hope the above comments by Dr. Stafford will be of use to you. Dr. Stafford has done us a great service by compiling these data.

Sincerely,

T. R. Torkelson, ScD
Corporate Medical

mh

cc: Ms. Rose Kaminski, NIOSH
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