



p.o. box 7027 / buffalo, new york 14240
716-827-4500

TO: QUANTITATIVE RISK
ASSESSMENT SUBCOMMITTEE
FROM: AIHC

DATE 3 September 1982

SEP 8 1982

August 13, 1982 T. BARR

Robert C. Barnard, Esq.
Cleary, Gottlieb, Steen & Hamilton
1250 Connecticut Avenue, N.W.
Washington, D.C. 20036

Dear Bob:

In response to your memorandum of July 22, 1982 on Dick Wilson's risk decision model based on LD₅₀ values, I offer the following comments.

1. When one uses NCI data for justification, it must be kept in mind that the selection of chemicals by NCI was based on prior high level of suspicion of carcinogenicity and that "toxic" chemicals frequently are hepatotoxic in rodents which are thus prone to late hepatocellular carcinoma. The high (?) correlations (lower 95% C.L. of r^2 for the Osborne-Mendel rat = ca. - 0.75; lower 95% C.L. of r^2 for Fischer 344 rat = ca. - 0.11; lower 95% C.L. r^2 for B6C3F1 mouse = ca. - 0.58) may largely reflect the well-known susceptibility of rodents to hepatotoxins. Thus the independent variable may be the potency and the dependent variable is the LD₅₀ in this analysis.
2. It seems to me that a mutagenicity battery, including some dose-response data on mammalian cells is not much more costly than a well-done accurate LD₅₀, and the correlation with CA. potency is likely to be better than using LD₅₀ data.
3. The question of thresholds at low dose is prejudged by selecting a risk model which reduces to linear through zero at low dose. If systemic toxicity is correlated with CA. potency, then the correlation should persist using LD_{5.0} or LD_{1.0} data. I doubt if such is the case.
4. The theoretical biological basis of the correlation is weak and I need not expand on this point except that it is not surprising a priori that highly toxic chemicals may be more potent carcinogens than relatively innocuous ones inasmuch as such properties as reaction kinetics, partition coefficients, detoxication mechanisms and bodily distribution are common factors in any biological model of systemic toxicity or carcinogenicity.

executive and sales offices
One Carlet Mountain Plaza
West Paterson, New Jersey 07624
201-381-1700
toll free 800-531-0171

- cont. -

AP00051373

5. I suspect that if one made an economic analysis of the cost of proceeding a la Wilson vs. proceeding on the basis of a scientific panel consensus, it would be shown that more useful positive and negative carcinogenicity data would ensue via the process of peer scientific judgement.
6. It would be interesting to have Perry Gehring's analysis of Wilson's ideas.

Bob, if the eminence of the authors is going to be important in the future use of this LD50 approach, I suggest that some good biostatisticians look the paper over for 1) built-in biases, 2) correlations using other than NCI bioassays 3) correlations involving target organs other than the rodent liver 4) potency adjusted for time-to-tumor.

In short, I don't like the idea of substituting computers for either common sense or scientific evaluation of all the evidence. I smell a rat.

Best regards,



Kelvin H. Ferber

KHF:dt

cc: D. Hughes
A. J. tenBraak (BCC)

cover page no. IVA V, per.
Air Products and Chemicals Inc. 4-11

RECEIVED

APR 15 1974

XR X top sheet only

INTEROFFICE
MEMORANDUM

① W Mayo Smith

Date APR 15, 1974
APCI CHEM. GROUP
LAW DEPT.

Ttown R & D

Subject OSHA - Emergency Temporary Standard
for Exposure to Vinyl Chloride

② H W Smith

To Distribution

From H. W. Smith

Ttown Safety

(Location, Organization, or Department)

Trexlerstown, Penna.

(Location, Organization, or Department)

③ R. Fleming

cc: E. Blades
W. M. Smith
J. Novak
H. Watson

J. Barr
T. Carey
R. Fleming
M. Spurlock

R. Mc Millan
J. Cost
R. Mc Ginnis
C. Worman

Attached is a copy of the Federal Emergency Temporary Standard for Exposure to Vinyl Chloride as issued in the April 5, 1974, edition of the Federal Register.

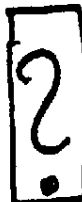
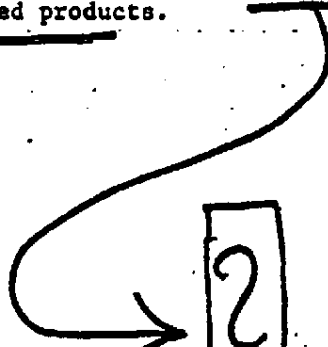
Please review this document and provide for its immediate application in all vinyl chloride processing areas exclusive of those areas concerned with fabricated products.

dhd

enclosure

RES. DIV. 100-1000000
APR 9 1974
W. M. SMITH

H. W. Smith



OK when the stage is reached

at which the VC's are in the form of fabricated products. But while VC's are being processed into such products, "this section" does apply.

W. Vonneuman
4-16-74

(320)

AP00051403

2129B

LAW OFFICES
BEVERIDGE, FAIRBANKS & DIAMOND
ONE FARRAGUT SQUARE SOUTH
WASHINGTON, D. C. 20006

RICHARD M. FAIRBANKS, III
HENRY L. DIAMOND
ALBERT J. BEVERIDGE, III
GARY H. BAISE
A. JAMES BARNES
HAROLD HIMMELMAN
CHRISTOPHER H. BUCKLEY, JR.
JONATHAN Z. CANNON
ANDREW E. MISHKIN
CHARLES A. PATRIZIA
SCOTT W. BOWEN
CATHERINE M. GUNLAP

TELEPHONE
(202) 638-7600

CARL EARDLEY
ELLIOTT GOLDSTEIN
OF COUNSEL
CABLE ADDRESS
"INDLAW"

3 July 1978

*New file -
Sent to [unclear] -
Turns his [unclear] to
Control Unit*

Joseph E. Hadley, Jr., Esquire
Keller & Heckman
Suite 1000
1150 17 Street N.W.
Washington, D.C. 20036

Dear Joe:

Enclosed is an article from the June 30 issue of the
Houston Chronicle.

Please note the assertions made by Jim Tarr of Toxcon Engineering Company. The 36 percent of vinyl chloride emissions in Texas not being controlled is an intriguing figure. I have no idea where he came up with this figure and I am curious if anyone on the Manufacturing Technology Committee has an idea. Furthermore, I would suggest that we attempt to obtain a copy of the paper Mr. Tarr presented at the Air Pollution Control Association Convention. Someone from our Committee may want to reply to the assertions made by Mr. Tarr in a letter to the editor of the Houston Chronicle.

If you have any questions, please advise.

Cordially,

Gary
Gary H. Baise

enclosure

Vinyl chloride regulations called weak

36% of Texas emissions said free of control under EPA rules

BY CARLOS BYANS
Chronicle Science Writer

Federal air pollution regulations do not adequately protect the public from the hazards of vinyl chloride, a substance believed to cause cancer, two pollution control specialists said here.

Jim Tarr of Texcon Engineering Co., Houston, said the primary weakness of the regulations is that they do not place a ceiling on vinyl chloride emissions.

Instead, the rules limit the amount of permissible vinyl chloride in exhaust gases or liquids and apply only to certain types of processes with others not being controlled.

This means that people living downwind of a large plant get more exposure to the dangerous material than those living downwind of a smaller plant, Tarr said.

It also means that 36 percent of the vinyl chloride emissions in Texas are not controlled at all by U.S. Environmental Protection Agency regulations, he said.

Tarr, a former engineer with the Texas Air Control Board, was joined in preparing the paper by Dr. Ranny McMurry, an environmental health specialist with the air board's Bellaire office.

Their paper was presented Thursday at a technical session of the Air Pollution Control Association convention at Albert Thomas Convention Center.

In 1974, vinyl chloride was found to be the cause of a rare liver cancer in some plant workers. It also has been tentatively linked to other cancers, birth defects and chromosome damage.

Polyvinyl chloride, used in the manufacture of thousands of plastic products, is made from vinyl chloride.

Tarr said the amount of vinyl chloride released into the air has been substantially reduced since 1974 but the public still is being regularly exposed to small amounts of the material.

It is difficult if not impossible to fix a safe limit for chemical carcinogens and medical science cannot say any exposure is without risk, he said.

The amount of vinyl chloride found in the air is small, he said, "but it does not follow that those concentrations are insignificant."

"Given present knowledge, about all that can be said is that members of the public who live and work in the vicinity of plants which manufacture or utilize vinyl chloride in large quantities are at risk. The magnitude of that risk appears to be small."

In another presentation, Hal Cooper, associate professor of civil engineering at the University of Texas at Austin, said a yearlong study shows substantial amounts of radioactivity are released as some coal is burned in power plants.

Some coal beds contain uranium and thorium, both radioactive elements. The amount of uranium and thorium varies

from area to area, he said. The higher concentrations are in South and Central Texas.

Some South Texas lignite plants release up to four times the amount of radioactivity permitted for nuclear plants, Cooper said, adding that the potential health hazard from radioactivity could be worse than from other power plant pollutants.

Cooper said the San Miguel power plant, under construction about 50 miles south of San Antonio by the Brazos Electric Power Cooperative, will exceed federal guidelines for radiation unless its pollution

control equipment is extremely efficient.

A spokesman for the cooperative, W. B. Townsend, manager of engineering at Waco, said he is not aware of any radioactivity in the fuel at all.

The plant is scheduled for test operation in December 1979 and will have control equipment that the supplier guarantees will meet pollution standards, Townsend said.

Cooper contrasted this plant to one being built near Fairfield by Texas Utilities that will use North Texas lignite. He said its emissions would be below the

federal guidelines.

Cooper said the most critical limits are based on the exposure of bone marrow to radiation that people swallow in food or water.

Control equipment specified by the federal Clean Air Act for controlling sulfur and fly ash from new power plants will control most of the radioactivity and even permit its recovery for use as nuclear fuel in some cases, he said.

Some of the equipment converts sulfur pollution from exhaust gases to sulfuric acid that can be used in recovering the uranium from the fly ash.