

#J Smith -> [unclear] -> [unclear]
Memorandum

**AIR 1.
PRODUCTS 1/2**

*(P)
Vinyl
Chloride*

To: Distribution Dept.:
From: J. T. Barr Dept./Ext.: Regulatory Response/8343
Date: 26 November 1986
Subject: Vinyl Chloride Safety Association Annual Meeting

Distribution:

E. H. Alkire
J. Anderson
~~M. R. Chmura~~
~~A. J. Diglio~~
R. Duggan
F. W. Fisher
B. Gebbia

B. D. Helms
D. C. Keehn
A. W. Norman
R. W. Ormsby
M. J. Sauers
J. K. Spata
L. B. Tepper
H. L. Watson

The Vinyl Chloride Safety Association held its annual meeting on 9-10 October at Washington, D.C. Sixty-four persons from 32 companies in 16 countries attended. APCI participants came from Escambia and Trexliertown. New officers for next year will be:

Chairman: H. Deuchel, Wacker Chemie
Vice Chairman: J. Young, Shintech
Program Chairman: J. Kiel, BFG
Cochairman: J. Nieuwenhuijsen, Akzo

Jim Wallace and Jim Gabbett remain Secretary and Treasurer, respectively. Acapulco was selected as the site of the next meeting.

The following notes reflect the highlights of the presentation shown on the attached agenda. Most speakers had handouts, and these are available in my VCSA file (drawer A-3). Please circulate this report to anyone in your group who may be interested. The several surveys presented this year contain considerable valuable information as to industry practice and experience in controlling reactors and preventing emissions.

Meeting Summary:

J. King, History of VCSA

Joe has compiled a list of meeting places, officers, and members of the VCSA since its inception in 1969.

TO: Distribution
FROM: J. T. Barr

Page 2
26 November 1986

True Confessions

J. Anderson reviewed the May, 1984 release and the actions taken to avoid a recurrence. He also discussed the problems arising from the recent power outage.

J. Kiel, BFG, discussed the fire and explosion of earlier this year at the Pedricktown bulk plant. Details have been given in my recent Vinyl Institute reports. Briefly, a rotating locking ring on a manway/filter housing had come loose because of failure to install retainer devices. The resulting fire burned one man and did considerable damage. He emphasized the need for good training of the various response teams, including media/public relations. The NJDEP gave them a commendation for prompt containment; OSHA cited them for failure to train the worker properly.

Stan Heath, Formosa, presented some new information on the 1983 tank car loading fire at Baton Rouge. It has been concluded that the most probable cause was that the interrupted loading schedule led to a worker disconnecting the couplings with the valves open. In addition, the check valve on the car was not assembled properly. They now have a more detailed check list and have installed Hammer couplings, so that if a pressurized line is opened it will be obvious before it is too late. They have had some problem with the "O" ring retainers in these couplings.

Hose failure is not suspected, nevertheless, they test all hoses upon receipt and after each 6 months in service.

The second car was damaged when the gas stream from the actuated RV caught fire and impinged on the car top, burning several "thumb sized" holes in the shell, despite the insulation. The vapor then burned at those holes. Efforts to transfer the contents failed due to low pump suction. An outside firm was brought in to hot tap the car, which was drained by gravity to a burn pit.

The source of ignition is not known. They were cited by OSHA for not using spark proof tools, and now do use them for some services. Of course, the Hammer couplings are not spark proof. There was general consensus that such tools are not appropriate for VC service.

In a discussion on "O" rings, most seemed to use Viton, but Esso stated that they found Buna-N better in liquid VC service. Many rotate rings in manway service to allow the swelling to subside between uses.

Bob Oubre, Dow, reported that he had obtained revision of ASME B73 to allow either cast iron or malleable steel frame adapters on pumps. This removes the last barrier to getting all of the cast iron parts out of pumps in liquid service. Past VCSA reports contain many accounts of catastrophic failure under pressure of cast iron pump bodies.

TO: Distribution
FROM: J. T. Barr

Page 3
26 November 1986

D. Nolan, Vulcan, described an unusual incident in which the application of 150# steam to the shell of a condenser (which was wet from recent cleaning) blew plugs of boiling water several feet and burned some employees. They hypothesized that localized boiling pushed a wave front of liquid ahead of it until a plug was formed that allowed a pressure build-up. They were able to repeat the event.

J. Ledvina, Solid Waste Survey

Joe summarized the results of a survey on disposal of solids by PVC plants. A copy of the results is available. Most companies used on-site disposal, and few have any firm data about VC in the groundwater or the air.

J. King, Economics of VC Stripping

Joe presented an estimate of cost for bringing the Pottstown PVC plant into compliance with the 1985 EPA proposal to require that VC in wastewater be reduced to 25 ppb before allowing it to enter the wastewater treatment system.

They assumed that steam stripping would be adequate, and estimated that it would cost \$1.3 MM capital plus \$677 M/year operating costs to remove and recapture (without treatment) 430 lb/year of VC from their wastewater streams.

Georgia Pacific reported that they operated a steam stripper for 3 weeks for an EPA study, and averaged 0.6-1.0 ppm. They conclude that steam stripping is not capable of 25 ppb. They did not disclose the stripper design, however.

A. E. Hamilec, Reactor Models

Archie Hamilec described his work on computer modeling of PVC reactor behavior. This is an extension of the work done while he was a consultant to us some 5-6 years ago, and the current computer program probably is quite similar to the one we have somewhere in R&D. He has tested his program against the DIERS results with styrene, and obtained very good correspondence. He has made predictions for the VC/PVC system which appear qualitatively sound, and he is looking for funding to operate a test unit he is purchasing which will allow him to make quantitative measurements of runaway PVC polymerizers.

J. Barr, Regulatory Update

The writer gave a summary of the regulatory activities affecting VC/EDC over the past year.

TO: Distribution
FROM: J. T. Barr

Page 4
26 November 1986

F. Borelli. Community Notification

Frank presented the results of a member survey on the practices for notification of the neighboring community in case of VC releases. Some European facilities are required to measure and report emissions in the low ppm range, but other than those requirements, no member responded as having a policy of notification of VC releases other than on a fire/explosion hazard basis. See my reports on recent Vinyl Institute meetings for more discussion on this subject.

H. Nieuwenhuijsen. EDC/VC Emissions

The program of quantifying VC/EDC emissions at the Akzo monomer plant was described. A cherry picker-mounted detector was used to measure the concentration at 3 elevation (0, 10, 20 m) at 8 stations downwind from their plant. They found 10-20 kg/hr as compared to the 25 kg/hr limit. About half of this was estimated to be from fugitives.

The concentration often was higher at 20 m than at ground. This was thought to be due to the use of several air-cooled condensers in the process area, which caused vertical air movement. All results were highly variable over short time periods.

B. Bennett. Anglo Update

Dr. Brian Bennett of ICI gave an update on the Anglo Registry. There have been three new cases confirmed in France, and one each in the US, UK, and Germany. There are four more under investigation. Of the six new cases, one had only three years of high exposure, and two had only four. The other three had the usual 22-25 years exposure. Details will be presented in the next annual update, scheduled for next January.

He has obtained further data on the Memice case at Pantosote, in which we are involved. He puts total exposure at 23 years, starting in 1960, with 4 years of heavy exposure, starting in 1966. The UK case with three years exposure has a first date of 1968. These are the first cases to be exposed after 1965.

There are several European epidemiological updates now nearing completion. Fox and Collier will have their report out soon, as will the Italian authorities.

Doll has a study of 5 major companies' employees near completion (some are in the USA). The French have a 1,100-person case-control study (ATOCHAM) nearly done, and so far report no significant differences. The EMAS study shows a high PMR for the brain, but many of the cases are secondary cancer.

He believes that alcohol may be an important cofactor, and will work with Tamburro at the University of Louisville on a cofactor study.

TO: Distribution
FROM: J. T. Barr

Page 5
26 November 1986

No one now at APCI is on Dr. Bennett's distribution list, or is active in the CMA Panel dealing with the epidemiology study. If anyone wants to get the annual updated Registry, they should contact Dr. Bennett directly. My Registry file is in file drawer B-1.

R. Gottesman, Vinyl Institute

Roy Gottesman addressed the group after the close of the first day's business, and described many of the activities which VI had performed on behalf of the industry over the past year.

M. Sietoff, Incinerator Survey

Mike summarized the VC destruction and/or removal procedures of the 25 respondents to his survey. There are 22 thermal incinerators, one catalytic incinerator and three liquid absorbers in use. The Service Factor generally was greater than 95%, with high temperature, instrument failure, and loss of scrub/cooling water the major concerns. Refractory generally lasts about seven years. A detailed survey analysis is available.

Several have had their thermal incinerators certified by EPA for dioxin service (99.9999% destruction). Generally, 1000°C and 2.5 secs. residence is adequate for dioxins and PCB removal.

Bj. Røle, Gaskets for VC Service

Doug reviewed the results of his survey on gaskets suitable for VC service. The conclusion was that suitable substitutes for asbestos in severe service are available, but cost considerably more and are more difficult to use. Suppliers have not been of much help, but have left the work up to the users. Over half, (17 of 31) respondents still use asbestos in some of their more critical applications. A full survey summary is available.

H. Waltemate, Quick-Closure Survey

Bern reported that 36 of 52 respondents use quick-closing manways or hatches, and 17 of these report some type of problems. BFG has stopped using Lenape closures because of leak problems; "O"-rings are a major source of leaks, with operator carelessness or overuse being the primary causes. Lenape closures must have some type of interlock to prevent accidental opening under pressure. A great variety of these interlocks were reported by the respondents. A complete survey analysis is available.

TO: Distribution
FROM: J. T. Barr

Page 6
26 November 1986

H. Coleman, Reactor Safety

Harold has prepared a detailed report on the survey which he conducted. There are 38 responses from 26 firms as to the type, reliability, and precision of the primary and secondary devices used at those facilities. Short stop and emergency control systems were included. This extensive survey contains much valuable information.

A. Peterson, Rupture Discs

Adolph gave an update on a survey of a few years ago that reported on the types of RDs in use and the experience with each type. There do not seem to have been any major trends toward new styles in the past few years.

D. Aas, Agitator Failure

Dla found that 77% of the 32 respondents had experienced agitator failure, but that no major damage had occurred as the result. There were many VC releases, of course. There were 79% who reported problems with false alarms. About 84% use the motor ammeter as the primary indicator. About half have manual response, the other half use computer control. Two-thirds actually take no action, but alarm only.

Half believe that their power supply is the weakest link. About 10% each say the gear box, the shaft, or some other mechanical part is a significant problem area. The majority of the respondents go through a fixed cycle of: try to restart, emergency cooling, add short stop, transfer out of reactors, and finally, manual vent.

A full survey analysis will be sent to participants.

J. King, Litigation Update

Joe passed out a table provided by the EPA which listed the status of all cases actually in litigation. Most are in settlement negotiations, and none are actually headed for court.

Miscellaneous

Several European members asked about recurring rumors that the APCI PVC facilities are for sale.

Gorge Zarate of Promociones Industriales Mexicanes asked if we were interested in licensing PVC stripping technology. He said they found our resins consistently lower than most. I suggested that he write F. W. Fisher.

TO: Distribution
FROM: J. T. Barr

Page 7
26 November 1986

John Anderson's name has been substituted for mine as permanent contact for the VCSA. Anyone wishing further information should contact him. My VCSA files are in file drawer A-3.

 ^(pbr)
J. T. Barr

JTB:pbr
1481c

Attachment

AP00022551

VINYL CHLORIDE SAFETY ASSOCIATION MEETING, 1986

ITINERARY

Thursday, October 9

0800	Registration and Coffee	
0830	History of VCSA	Joe King, Occidental
0900	True Confessions and Case Histories	
	Vinyl Release in Florida	John Anderson, Air Products
	Pedricktown, NJ Fire	J. Kiel, Goodrich
	Baton Rouge Tank Car Fire	Stan Heath, Formosa
	Vinyl Chloride Pump Failures	Bob Obre, Dow
	Open to Members	
1030	Coffee	
1100	Solid Waste Survey	J. Ledvina, Vista
1130	Economic Impact Case Study for New Effluent Standards	J. King, Occidental
1200	Lunch - Dr. A. E. Hamielec will speak about computer models for Safety Calcula- tions	
1330	Environmental Regulations Update	J. Barr, Air Products
1350	Survey: Community Relations	F. Borelli, Georgia Gulf
1410	Measurements of Emissions of EDC/VCM Production	H. Nieuwenhuijsen Akzo

Thursday, October 9 (con't.)

1430	Angio-Sarcoma Update & Discussion	Dr. B. Bennett, ICI
1600	Official Close of Meeting	
1605	Vinyl Institute Activities	R. Gottasman V. I.

Friday, October 10

0830	Business Meeting: Election of Officers Selection of 1987 Meeting Site Treasurer's Report	
0830	Survey: Incinerators for Vinyl Chloride Service	Mike Sieloff, Esso
0900	Gaskets for Vinyl Chloride Service Survey	Doug Rule, Air Products
0920	Quick Closures for Vinyl Chloride Service Survey	H. Waltemate, Goodrich
0940	Survey: Reactor Safety	H. Coleman, Air Products
1000	Coffee	
1030	Survey: Rupture Discs	Adolph Peterson, Georgia Gulf
1100	Survey: Reactor Agitation Loss	Ola Aas, Norsk Hydro
1130	Update on EPA Litigation	Joe King, Occidental
1200	Close of Meeting	