

TECHNICAL COMMITTEE MEETING

South Seas Plantation
Captiva Island, Florida
Meyer Room

Thursday
May 10, 1990
8:30 a.m.

Attendees:

Frank Borrelli, Georgia Gulf Corporation
Chuck Bush, BFGoodrich Company
Bill Carroll, Occidental Chemical Corporation
Fred Clarke, Benjamin/Clarke Associates
Peter de la Cruz, Keller and Heckman
Lee Fishbein, Borden Chemicals and Plastics
Rick Flammer, Vista Chemical Company
Pat Gallagher, Edward Howard and Company
Thomas Goeke, Klockner-Pentaplast
Don Goodman, Occidental Chemical Corporation
Roy Gottesman, VI
Clark Graybill, PPG Industries
Bud Hall, Vista Chemical Company
Walt Hermes, Borden Chemicals and Plastics
Marcelo Hirschler, BFGoodrich Company
Bob Kelly, CertainTeed Corporation
Fred Krause, BFGoodrich Company
John Krokosky, Dow Chemical Company
Joe Ledvina, Vista Chemical Company
Gabe Lefebvre, BFGoodrich Company
Peter Lloyd, BFGoodrich Company
Dick Magee, NJIT
Doug Niewoehner, Air Products and Chemicals
Don Pearson, PPG Industries
Nancy Russotto, ECVI
Erv Schroeder, Shintech Inc.
Dave Schwartzberg, Atochem, N.A.
Dan Stanowick, Edward Howard and Company
Robert Strength, Product Safety Management
Sanford Stromberg, Atochem, N.A.
Brian Wadey, BASF Corporation

I. SELF-INTRODUCTIONS AND APPROVAL OF MINUTES

Following self-introductions, the minutes of the previous meeting of the Technical Committee held on February 1, 1990 were approved as received.

II. PROJECT REVIEWS

A. Fire and Combustion Toxicity

1. Mission Statement and Objectives

Dr. Hirschler had previously provided a mission statement and objectives for this program. They include the following:

- a. HCl Decay - Obtain a scientific model of the behavior of HCl in fires for introduction to fire hazard assessment models such as the FAST program.
- b. Combustion Toxicity - Get combustion toxicity assessed adequately in real fire situations, and avoid using toxic potency tests in isolation.
- c. Smoke Corrosivity - Establish a more meaningful test to reflect real smoke conditions, one that is based on performance of products in real fire situations. Specifications would be based on the results of these tests, rather than an acid gas titration.

After discussion, it was agreed that these represented an appropriate statement of the mission and objectives of this program.

2. NIBS - Toxic Hazard Assessment Test

Dr. Hirschler reviewed the history of the NIBS test. He noted that the working group has not met since last December and that the steering committee, which was due to meet in April, has not met. He reported that Union Carbide had "gone public" with results on PVC from the NIBS test at the last Hilado Conference. The future program of NIBS is in "a state of limbo" until the working group gives a recommendation to the steering committee. It was agreed that this subject would be discussed further at a meeting specifically to discuss policy with regard to the fire and combustion toxicity programs later on May 10th at 4:00 p.m.

3. Update/Future Program on HCl Decay Tests

Dr. Hirschler provided a paper which he proposes to present at Interflam '90 dealing with HCl decay in a small-scale apparatus.

Assignment:

Roy Gottesman has the assignment to circulate copies of this paper to the chairmen of the Technical, Legal, and Communications committees for approval prior to the submission date of June 15th.

Marcelo Hirschler indicated that he expects to complete the planned program on HCl decay during the coming fiscal year. He indicates that they have taken an empirical model and put it on a better scientific and predictive footing. The intent is to complete the current program and not carry-out any more experimental work other than to be certain that the results of this work are incorporated into the NIST model.

There is also the possibility that we might want to use this in arguing against the empirical factor of 7 suggested by Dr. Alarie in the New York City toxicity test.

4. Smoke Corrosivity

Marcelo Hirschler noted that 4 standards organizations are moving ahead on test development. Work is going on in ISO, IEC, ASTM and CSA. He noted that there is a coordination meeting scheduled to be held in Orlando, Florida on September 14th. ISO and IEC are developing a CNET-type test, the ASTM development uses the NIBS apparatus test and CSA may be using the CNET test, although this is not certain. Dr. Hirschler estimated that approximately \$50,000 would be needed to fund a research study on smoke corrosivity. He has proposals in hand from the University of London, the University of Edinburgh and proposals are anticipated from Southwest Research Institute and UL Laboratories. The CNET test can only test materials and not products and involves corrosion of an electrical circuit. ASTM has a proposed protocol but needs work to validate and finalize the findings.

Marcelo Hirschler proposed that the Coordinating Committee on Fire Safety, Electrical Materials

Subcommittee find this, and that the VI could participate in such a funding program. Bill Carroll suggested that preliminary testing by the Vinyl Institute to assure ourselves that a joint program would not lead to results which might be difficult to live with.

Roy Gottesman suggested that Marcelo Hirschler and a subcommittee evaluate the 4 proposals and come back to the Technical Committee with a recommendation.

Assignment:

A subcommittee consisting of Marcelo Hirschler, Bud Hall, Fred Clarke and Dick Magee are to evaluate the smoke corrosivity proposals and provide a recommendation to the Technical Committee at its next meeting.

Assignment:

Marcelo Hirschler is to stay involved in the activities of the Coordinating Committee on Fire Safety to understand and guide their work on corrosivity testing.

5. Publication From Southwest Research Institute Program on Medical/Health Effects

In the absence of Bob Hinderer, Roy Gottesman reported that the papers are virtually complete and are expected to be issued by the end of May. He expressed his thanks to Bob Hinderer for shepherding this process through, coordinating the activities of SwRI and Dr. Harold Kaplan.

6. Proposal For Publication of a Book/Monograph on Toxicity and Fire Hazard of HCl and PVC

Roy Gottesman discussed a proposal from Bob Hinderer that the Vinyl Institute consider publication of a book on all of the toxicity work carried out relating to products from vinyl combustion. Marcelo Hirschler was not in favor of such a publication and Bill Carroll expressed some concerns regarding obsolescence in a book. Peter de la Cruz noted that the Styrene Institute Research Council (SIRC) had self-published a compendium on toxicity data and offered to provide a copy to Bob Hinderer for his consideration.

The consensus of the group was that a publication of all papers in one compendium was worthwhile, but there was no agreement on the best avenue to take.

Assignment:

Chuck Bush will ask Bob Hinderer to refine his proposal, taking into account concerns expressed by Marcelo Hirschler and Bill Carroll and Peter de la Cruz' past experience.

Assignment:

Bob Hinderer is to report back to the Technical Committee with a recommendation including the exploration of potential publishers.

Rick Flammer expressed his view that there is a need for an overall information package on the fire/com-bustion issue in layman's terms, which can be taken out and used in industry and marketing contacts.

Assignment:

Roy Gottesman will explore with the Communications Committee whether an updating of currently-available material is needed.

B. PVC Ecobalance

Roy Gottesman reviewed a recent statement in a new publication "Greenpak International" suggesting that PVC will gain acceptance as "an environmentally friendly" material since it is more energy efficient than other materials. He noted that a study had been carried out on an ecobalance by the Swiss plastics industry and that there was considerable discussion on the necessity for an ecobalance at the recent PVC '90 Conference in Brighton, England. He further noted that Franklin Associates had recently carried out an ecobalance study in behalf of NAPCOR, which compared PET with aluminum and glass containers. A "cradle to grave" comparison of PVC versus competitive materials is needed and the group agreed with this.

Roy Gottesman further suggested that we try to coordinate this with European groups who are active on this issue. Although there will be individual differences in inputs that are unique to a given country, he suggested that an overall protocol be developed to define those elements which should be included in such a study. Nancy Russotto indicated that ecobalances are going to be done in

Europe, possibly leading to ecolabeling. She agreed with the need to establish common methodology in such studies. The desirability of having environmentalists involved in the discussion was mentioned with the possibility of having an individual such as John Elkington, author of "The Green Consumer Guide" as a consultant.

The energy balance-type study should favor PVC over glass and other materials and would be useful in countering the Greenpeace thrust of "chlorine free in '93". The consensus of the group was that this work needs to be carried out and John Krokosky proposed that a subcommittee be established to develop the scope and plan for such a program. The following individuals volunteered to serve on such a committee:

Fred Krause, John Krokosky, Lee Fishbein, Bill Carroll, Frank Borrelli, Dick Magee, Gabe Lefebvre, and Brian Wadey

Tom Goeke volunteered Robert van Winkle from Klockner-Pentaplast.

Assignment:

Roy Gottesman and Chuck Bush will organize the first meeting of this group. (Subsequent to this Technical Committee meeting, it was agreed that this Ecobalance Subcommittee will meet at the VI offices on June 6th.)

Assignment:

Roy Gottesman is to obtain a representative from the Communications Committee, Health, Safety and Environment Committee and possible representation from Europe as this program gets underway.

C. Recycling Projects

1. Report on VIGOR Meeting

Fred Krause reported that the group had met on April 5th to review the progress on the various recycling programs. It agreed upon a mission statement and objectives, and company representatives agreed to keep other company representatives informed on their individual company activities. Critical audiences were identified and it was agreed that any communications program will be based on actual accomplishments rather than on plans.

Based on a request from Chairman Rick Flammer, the group will discuss possible joint efforts among willing parties in a joint clean-up and recovery program. Further, at its next meeting on May 17th, the public relations counsel, Ardrey Inc. will present its communciations strategy.

2. Update on NRT Project

Bill Carroll advised that the program at NRT is making very good progress and a number of companies including Wellman, St. Jude, the Plastics Recycling Alliance (Dupont) have been apprised of the progress at NRT and appear interested in it.

NRT is carrying out an evaluation of the radiation safety data and is carrying out work to establish the requirements for the air ejection system. The next meeting of the VI group that is coordinating activities at NRT will be held in Nashville on June 4th.

Rick Flammer inquired where the demonstration unit would be installed. Roy Gottesman advised that our contract with NRT provides us with our having access to the first prototype unit for two years. VIGOR will discuss and decide where the unit will be located initially.

3. Update on CPRR/Rutgers

Frank Borrelli advised that the equipment is under modification to take crushed bottles with the target date being May 23rd to have this accomplished. The next step is to prove out the entire system, and then to publicize it. Bill Carroll indicated that the approach must be to carry-out innovation at Rutgers, but to have optimization carried out in a commercial enterprise.

4. Update on Rhode Island/New England CRInc.

Lee Fishbein reported that he continues to update Steve Katz at New England CRInc. on our sortation programs and Katz has expressed a willingness to try a prototype apparatus at the earliest date. It was noted that New England CRInc. has been purchased by Wellman.

Lee Fishbein also reported that he is having problems getting the attention of the state people in Rhode Island to continue discussions concerning

collection of vinyl, but will continue such contacts.

5. Commingled Plastics

Bill Carroll reported that there is nothing further on the Rutgers activity. Commingled plastics are being successfully manufactured by Hammer Plastics, but they use approximately 80% industrial scrap and 20% post-consumer scrap. National Waste Technology apparently have 2 ET-1's with one operating. The cost versus wood continues to be a major problem and it was noted that there are fundamental differences in the United States vs. Europe. Nancy Russotto reported interest on commingled plastics is very high in Europe, being driven by anticipated legislation which will require recycling up to 50% of the materials by the year 2000.

Don Goodman indicated that the U.S. distributor of the ET-1 apparatus appears to be having second thoughts on the viability of this apparatus because of the approach being taken to isolate pure streams of individual plastics and because of the potential counter-attack by the wood lobby. Bill Carroll also noted that the synthetic plastic lumber has poor structural properties without the use of reinforcing agents, and that legislation requiring recycled contents in packaging will also impact the availability of materials for use in commingled operations. Finally, it was reported that the Recycl-plast operation has been closed down.

6. Vermont Republic Industries (VRI)

Don Goodman reported that Al Voegelé at VRI continues to carry out work promoting the VRI concept and he is also participating in state political activities.

7. Council For Solid Waste Solutions (CSWS) Programs

In the absence of Bob Elcik, Bill Carroll reported on the following:

- a. There is a push by Coca-Cola for a virgin material tax to level the playing field with recycled material. The CSWS position is to impact legislation to be fair in this regard.
- b. The Council of Northeast Governors (CONEG) has a move to include chlorine on their list of

environmentally-undesirable materials. They have previously proposed model legislation to ban heavy metals including lead, mercury, cadmium and hexavalent chromium. The desirability of participating in the CONEG process was discussed and Roy Gottesman asked for volunteers who would want to attend an SPI-sponsored meeting on May 18th in Washington D.C.

- c. Wisconsin legislation was successfully modified for the current session, but it can be expected that the environmentalists will be back with anti-plastics legislation proposals next year.
- d. Government and industry roundtable relating to positive procurement are underway.

7. R2B2

Frank Borrelli indicated that the program is ongoing and Mr. Schedler plans to promote their concept in other locations. Frank Borrelli will continue liaison with R2B2.

8. ASTM

Frank Borrelli reported that ASTM will be accepting the SPI Voluntary Coding System. A subcommittee has been established to look at uses for PVC recycled material and how to incorporate them in an ASTM standards. In the VU-sponsored market survey, Roy Gottesman reported that Bob Bennett of the University of Toledo has advised him that the draft report will be available by the end of May. At that time, it will be circulated to members of VIGOR for their input and the final report will then issue. It is planned to have Bob Bennett present his findings at the next VIGOR meeting.

Roy Gottesman suggested that Peter Lloyd be in contact with Bob Bennett regarding ASTM standards and he has had a graduate student evaluate the current standards and determine which of these would permit the use of recycled material.

9. Recovery of Vinyl From Wire and Cable Scrap

Gabe Lefebvre reported that a team had visited RPI about 2 weeks ago and had sufficient data to make

economic projections. He indicated that the method appears to be "a longshot" but he expects to have an analysis available by the end of May.

It was noted that the problem relating to wire and cable scrap will not disappear and must continue to be pursued. It was noted that both Goodrich and Vista have programs involved here, including the investigation of possible replacements for lead stabilizers.

D. Incineration/Heavy Metals

1. European Studies By Professor Rappe

Roy Gottesman briefing reviewed his meetings in Europe which were covered in detail in a letter to Chuck Bush dated May 3rd, a copy of which was previously sent to all Technical Committee members. Based on Roy Gottesman's recommendation, the Committee approved contributing \$10,000 to the Rappe study, with the understanding that Professor Magee would participate on the expert panel that is advising Rappe on his studies.

2. Philadelphia Academy of Science Report

This report was issued.

3. Incineration Conference By The U.S. Conference of Mayors

The summary of this conference has been released and will be included in our information package.

4. Draft on Incineration

A draft on incineration which had been written by Dick Magee and edited by Roy Gottesman was provided to the members of the Technical Committee. They are asked to provide any comments or suggested changes to Roy Gottesman by May 21st, so that this paper can be published in final form and included in our information package.

5. Franklin Associates Report on "Characterization of Lead and Plastic Products in Municipal Solid Waste"

Gabe Lefebvre indicated that he is still working with Franklin Associates, as their numbers relating to the amount of lead in floppy disk jackets seems to exaggerate the amount of lead that can be

expected in the waste stream in future years. He has the continuing assignment to see that this work is completed and that a final report is issued. This report is now expected to be completed some time in June.

IV. NEXT MEETING DATE AND LOCATION

The next meeting of the Technical Committee will take place on July 26th at the Newark Airport Vista Hotel.

Respectfully submitted,

A handwritten signature in cursive script, reading "Roy T. Gottesman". The signature is written in dark ink and is positioned above the printed name.

Roy T. Gottesman