

VI TECHNICAL COMMITTEE MEETING

Otto H. York
Center for Environmental Eng. Science
NJ Institute of Technology
Newark, New Jersey

Thursday
March 12, 1992
9:00a-3:20p

Attendees:

Larry Brecker, Witco
Bob Burnett, VI
Lee Fishbein, Borden Chemicals
Don Goodman, OxyChem
Roy Gottesman, VI Consultant
H. J. Hall, Vista Chemical
Richard Magee, NJIT
Louis Maresca, BFGoodrich
Ron McCreedy, Dow Chemical
Debbie Neale, BFGoodrich
Alan Olson, BFGoodrich

I. SELF-INTRODUCTIONS AND APPROVAL OF MINUTES OF THE DECEMBER 3, 1991 MEETING

The meeting was opened by Chairman Ron McCreedy at 9:00 a.m. with a round of self-introductions. Mr. Olson was welcomed at his first meeting of the committee and the chairman expressed thanks to Dr. Magee for making the facilities at NJIT available for this meeting.

The minutes of the December 3, 1991 meeting were approved on motion of Larry Brecker, seconded by Don Goodman.

II. OBJECTIVE OF MEETING

Chairman Ron McCreedy indicated that his objectives for this meeting were to obtain an update on the various projects, to consider new items that the committee might undertake, to identify individuals in the different companies who could help on the projects and to review the current status of the budget as well as the proposed budget for the ensuing fiscal year.

R&S 144479

III. PROJECT REVIEWS

A. Fire Sciences

1. Combustion Toxicity

Bud Hall discussed the activities of the New York City Toxicity Advisory Council. The history behind this council was briefly reviewed, including the fact that the New York City Building Code is unique and the state code does not cover it.

The Carpet and Rug Institute has proposed that a variation of the New York State Toxicity Databank filing be used for approving materials. This would be an LCA₅₀ and would be based on the area of carpeting. While the technical validity of the New York State Toxicity Test is questionable, all products approved in New York State have already undergone expensive testing and it would be undesirable to have to put materials through an alternative test.

At the last meeting of the Advisory Council, Dr. Brabauskas of the Fire Research Center at NIST discussed combustion toxicity and pointed out that toxicity testing is a small component of the overall evaluation on the performance of a product in a fire scenario. He basically pointed out that hazard analysis involving other factors such as ease of ignition, flame spread and rate of heat release must also be considered. Such testing would even be more expensive and there is, at the present time, no established protocol for such a hazard analysis.

Roy Gottesman indicated that he had discussed what action SPI and/or VI should take with regard to the activities of the New York Toxicity Advisory Council with Dr. Fred Clarke, who is on the Council as an SPI consultant. Dr. Clarke suggests that we do not do anything until the Advisory Council acts. They seem to be very interested in the NIST hazard analysis, but it must be recognized that this is not a protocol that they can adopt at the present time, and it may take years to complete. While the Advisory Council is being educated in an ongoing process, new products awaiting approval are essentially in a "hold" pattern. Included among these is CPVC, a product which Goodrich has been trying to have approved in New York City for some time.

The Advisory Council is expected to meet again in April and it was agreed that the group will wait until the April meeting to determine whether the Advisory Council takes action. If it does not, then the Technical Committee will consider whether it should recommend a position to SPI.

Action:

Bud Hall has the assignment to follow the activities of the New York City Toxicity Advisory Council and particularly its decision, if any, at its April meeting. Bud Hall is to advise the Technical Committee at its May 28th meeting of any action that the Vinyl Institute should take with regard to recommendations for the Advisory Council.

2. Corrosivity Testing

Bud Hall indicated that after much discussion, the subcommittee has decided to suspend the large scale testing program that had been the subject of a proposal from Dr. Hirschler dated October 17, 1991. The reasons for this are that the costs have escalated significantly over the original proposal, there is some question whether some of the samples to be evaluated can even be prepared and the threat from competitive materials, particularly polyolefins, does not appear to be a real one. Further, Bud Hall indicated that for general purpose building wire, there is no demand for a corrosion-free material.

3. Participation in Testing Program of the Polyolefins Fire Performance Council

This program involves evaluation of over 20 materials by the Polyolefins Fire Performance Council in an ASTM test (D 9.21) which utilizes a cone calorimeter. This process is being pushed by representatives of the Fluoropolymers Division and halogenated samples appear to perform very well in this test.

Roy Gottesman reported on a recent paper at the CCFS meeting, which described the results of the evaluation of these 20 materials in the DIN test. Copies of his memorandum describing the work carried out by the Polyolefins Fire Performance Council to evaluate ASTM test E 5.21 and the CNET test was distributed to the group.

The Vinyl Institute will participate in the test to evaluate ASTM D 9.21 proposed corrosivity test by having the Goodrich Flexel^R and Plenex^R manufactured by Vista evaluated in this test.

Action:

Lou Maresca is to follow-up on the shipment of the Flexel^R sample to UL Laboratories as it apparently has not been received.

4. Meeting with National Electrical Manufacturers Association (NEMA).

Bud Hall indicated that he, as a representative of the Vinyl Institute, Loren Caudill of DuPont representing the Fluoropolymers Division and Carl Tripp, Managing Director of the Polyolefins Fire Performance Council (PFPC) will be meeting with the National Electrical Manufacturers Association with regard to testing in the fire corrosivity area.

There is considerable sensitivity to the plastics industry carrying out tests which affect producers of wire and cable without their input. This meeting is to explore how best to cooperate with NEMA.

Action:

Bud Hall will review the results of the meeting with NEMA at the May 28th Technical Committee meeting.

5. Corrosion Testing Needs in Other Areas

Bud Hall pointed out that AT&T (Bellcore) will eliminate PVC in switching stations in favor of fiber optics. He noted that corrosivity is not a factor in building wire.

However, Lou Maresca noted that information from the marketing department at Goodrich suggests that corrosivity may be a factor limiting the use of PVC in other areas, viz. computer housing and moldings. It was agreed that a sub-group should review this and determine what work, if any, should be undertaken by the Technical Committee.

Action:

Lou Maresca agreed to chair a sub-group that will determine what additional work might be needed in corrosion testing in other use areas. He will arrange for a teleconference to involve Bud Hall and Gary Wedlake of Georgia Gulf.

6. Factory Mutual Testing

Bud Hall indicated that he had sent Archie Tewarson a letter on February 3rd regarding his proposed testing program at Factory Mutual, but has not had a response. He asked for further definition of the tests and their intended use.

Action:

Bud Hall will wait for a response from Archie Tewarson and will not initiate any further contact with him relating to the Factory Mutual testing program.

7. National Fire Protection Association/National Electrical Code

Bud Hall noted that except for action by Panel 6 of the National Electrical Code, most special designations were defeated. He indicated that SPI has written to the National Electrical Code expressing its concern about allowing special markings near the UL approval markings and indicated that the action by Panel 6 was improper.

8. NEMA Project on Fire Performance of Wire and Cable

Bud Hall noted that NEMA had commissioned the National Institute of Science and Technology (NIST) to carry-out a review of various fire performance tests used in wire and cable and to advise of their utility/applicability.

A report has now issued from NIST entitled "Fire Performance of Wire and Cable - Reaction to Fire Tests - A Critical Review of Existing Methods and of New Concepts". This program, at the cost of \$100,000, has essentially pointed out that in the view of the authors, none of the current tests are satisfactory.

A test program to evaluate either new tests or concepts given in this report would cost in excess

of \$1,000,000 and it is understood that NEMA will not carry-out any further work with NIST in view of the poor economic health of the wire and cable industry.

9. HCl Decay Modeling

Lou Maresca reported that the work is essentially completed and completion is expected by the end of March. He noted that the work on HCl decay has actually been incorporated into the Hazard One software. Don Goodman noted the importance of this activity as it would be very useful in future litigation.

Action:

Lou Maresca is to determine what costs have not yet been billed to the Vinyl Institute for this work. He will submit an invoice as soon as possible, so this can be paid in the 1991-1992 budget year.

10. National Fire Protection Association Risk Assessment Program

Lou Maresca noted that this program had support from Underwriters' Laboratories, Goodrich and DuPont, but the software was developed on hardware which is now obsolete. While it uses Hazard One software, it is difficult to use. Thus, the utility of this program for commercial purposes is not in the immediate future. No further work is planned and this item will be removed from the Technical Committee agenda.

B. Incineration/Swedish-Norwegian Studies

1. Next Meeting - May 14-15, 1992 - Umea

Dr. Magee reported on this project. His letter of January 19th was sent to Mr. Niklasson of Norsk Hydro by Roy Gottesman on January 22nd and related to fuel composition and calibration tests. No response has been received.

Dick Magee indicated that this project is going extremely slow. Criticism has generally been accepted and recommended changes have been incorporated. Even though the Norwegians have made changes in their reactor, he expressed his concern about the end utility of that project. Further, although agreement had been reached at the meeting

in Gothenburg in November for monthly progress reports, only one was received in January covering activities during November and December.

The following were agreed to:

1. We will keep pressure on the Europeans to get monthly progress reports.
2. Maximum support will be put behind the Swedish subject, which is more credible and will give better data.
3. While pressure will be kept on the Norwegian study, attempts will be made to have it so different that it is discounted because there are serious questions regarding the validity of results from that study.

Action:

1. Dick Magee will attend the May incinerator meeting in Umea and will report on it at the next Technical Committee meeting.
2. Roy Gottesman accepted an assignment to follow-up with Dr. Werner Freiesleben of ECVN to assure that monthly updates are received.

2. Recovery of HCl From Incineration Processes

Dr. Magee reported that no progress has been made in obtaining an in-depth review of the literature references provided at the last Technical Committee meeting. The goal of this work is to anticipate where arguments might be made against incineration of PVC due to HCl generation as a result of either costs of scrubbing or the corrosion.

Action:

Dick Magee will resolve the commitment and time line to have this work carried-out by Dr. Shaw at NJIT or will suggest an alternative resource who can provide information on appropriate design and costs.

3. Capacity and State-of-the-Art in Incineration

Dr. Magee indicated that an analysis of available incineration capacity and where incineration is going in the U.S. is still on his agenda.

Don Goodman advised that the Partnership for Plastics' Progress, through its Technical Advisory Committee, is investigating waste-to-energy recovery in incineration. He is on this committee and inasmuch as the Partnership believes that there will ultimately be a ceiling to recycling, they see the need to change the perceptions regarding incineration.

After the Technical Committee Meeting, Don Goodman noted that he and Dr. Michael Fisher of CSWS would be meeting with Dr. Magee to see if he would be able to undertake a project that would evaluate capacity, state-of-the-art and the place of plastics in incineration. The intent would be to use PVC as a model for all generic plastics and, once a flow sheet is generated, such an analysis would show where the information gaps are.

Action:

Dick Magee and Don Goodman will update the Vinyl Institute on the decisions made by the Partnership for Plastics' Progress regarding incinerator capacity and will coordinate the Vinyl Institute's effort with the Partnership activities.

Bob Burnett reported on the visit to Japan last week, in which he, Roy Gottesman, Fred Krause and Bill Patient participated. Incinerator facilities in the greater Tokyo area were visited. He noted that costs by the Tokyo Municipal Solid Waste Authority suggest that it costs 7 times as much to incinerate PVC as other plastics, due to the presence of HCl.

4. Radio-Active Labeled PVC - Norwegian Studies

Discussion centered on the information provided by Roy Gottesman in his letter of January 13th which related to Cl^{36} labeled PVC. Responses from technical personnel at Goodrich and Vista indicated some question with regard to the nucleophilic substitution which was used.

Action:

Larry Brecker will review the procedure used by the Norwegian investigators and will provide Roy Gottesman with a letter that can be transmitted to the ECVM group regarding the authenticity of the labeled PVC.

C. Lifecycle Analysis

1. Completion of the Chem Systems Report

Roy Gottesman indicated that the Chem Systems report entitled "Vinyl Products Lifecycle Assessment" was issued on March 3rd by Chem Systems. Peer reviews had been received from Dr. Paul Fink at EMPA, Dr. Ian Boustead at the Open University in England, and Mary Ann Curran of USEPA.

Roy Gottesman indicated that he had asked Edward Howard and Company, our public relations consultant for their views on how to best merchandise this study. He also solicited suggestions from the Technical Committee. Don Goodman suggested a publication of the results in a peer review journal. Roy Gottesman agreed to bring this to the attention of Edward Howard and Company. Additional copies of the report are being obtained.

Action:

Bob Burnett will see that copies of the LCA report are distributed to those Technical Committee members who have not yet received same.

2. Product Benefits Committee of Product Stewardship Task Force of Partnership for Plastics' Progress

Roy Gottesman indicated that he has been participating in this group and, at the request of Pat Toner, has been developing an inventory of LCA reports produced by various U.S. and foreign organizations.

Action:

1. Ron McCreedy will send a list of LCA reports developed at Dow to Roy Gottesman.
2. Roy Gottesman will provide members of the Technical Committee with information that he received in Japan relating to LCA studies being carried out at the Mitsubishi Research Center in Tokyo.
3. Roy Gottesman will provide a copy of the information received in Japan on their ecobalance study program to all members of the Technical Committee.

3. Tellus Report

Bob Burnett reported that the Tellus report was released on January 31, 1992 at a New York Solid Waste Conference. This seriously-flawed study was presented in the form of a panel and was criticized by all panelists, including Richard Dennison of the Environmental Defense Fund. The same report was presented at the SETAC conference in Pensacola the following week, where it was again criticized.

Bob Burnett provided information to Plastics News, wherein an article appeared on February 10th. Bob Burnett also distributed a copy of a statement relating to the Tellus report, which will be re-issued with minor corrections. As Tellus wants to make a responsible answer to the criticisms from SPI and the Council for Solid Waste Solutions, they have asked for the lifecycle analysis on vinyl products prepared by Chem Systems and it was agreed to send this report to them.

Action:

Bob Burnett will provide Tellus with a copy of the Chem Systems lifecycle analysis report.

Don Goodman commended Bob Burnett for the outstanding and prompt response to the Tellus report.

Ron McCreedy indicated that he is participating in an economic benefits task group at the Chlorine Institute which will carry-out very specific targeted lifecycle analyses. The first phase will involve jobs, the tax base and other socio-economic evaluations.

D. Medical/Health Effects

1. Publications from SwRI Work

Lou Maresca reported that Bob Hinderer advised him that the 3 publications are completed, they have been through internal review and are to be submitted for publication.

2. Compendium of Fire Toxicity Publications

This compendium is expected to be completed by the end of the year.

Action:

Lou Maresca is to follow-up with Bob Hinderer and the Medical/Health subcommittee to see that this compendium of fire toxicity publications moves forward.

IV. UPDATE ON VIGOR/RECYCLING ACTIVITIES

Bob Burnett updated the group on various activities of the VIGOR team. Specifically, he reported on world outlook including the status in Europe and the situation in Japan, which has suffered a 10% decline in packaging in the past year, due to a great deal of deselection of vinyl. He noted that Honda is reportedly trying to replace vinyl in automobiles and is attempting to have a minimum number of plastics used, desirably even only one in most automobile uses.

Bob Burnett reported on the various recycling projects including the activities at NRT and Steiner-Liff. He expressed the view that the NRT technology has probably been leap-frogged by later developments. In auto sortation, the first project funded by the Partnership for Plastics' Progress will involve the evaluation of the proto-type AIC unit in Fort Howard, New York. This will involve demonstrating the separation of components in the third bale and is expected to be activated in June or July. This will essentially involve no costs to the Vinyl Institute.

In Florida, which is a political hot spot, a request for proposal was issued and 3 or 4 valid responses have been obtained. Bill Carroll is conferring with Senator Kirkpatrick, and it is likely that we will go into Florida using the Magnetic Separation System (MSS) as a demonstration unit to show that vinyl is recyclable.

Bob Burnett also talked about the organization of the Partnership, noting that the Council for Solid Waste Solutions will be incorporated into the Partnership. Other items of interest noted were legislation relating to recycling rate and content and the legislation that could result in either taxation, advance deposit fees, or other methods to encourage recycling. As related to technology development, the DevTech/Carpco and froth flotation technologies for removing trace contamination of PVC from PET were noted.

Finally, Bob Burnett advised the group regarding the issues management videos that are being completed, a visit to the Foster-Wheeler facility in Camden made on January 15th by Dick Magee, Roy Gottesman and Bob Burnett. He also advised the group that as of June, the Plastics Recycling Foundation will

no longer fund the pilot plant activities at the Center for Plastics Recycling Research at Rutgers. The new mission of PRF will be to fund university research through the Center for Plastics Recycling Research.

Dick Magee suggested that visibility of the problems relating to recycling must be surfaced and suggested that industry consider accomplishing this through the National Academy of Sciences.

V. SOLVENT CEMENT ISSUES UPDATE

Don Goodman reported that the status quo remains, but that it is very likely that the time target for the South Coast Air Quality Management District Compliance will be extended. Don Goodman indicated that the VOCs have been substantially reduced by solvent cement manufacturers. He stated that Oatey has a proprietary development which has resulted in an immediate reduction which is sometimes below 250 grams per liter.

In addition, IPS of Gardena, California also has a new product and both organizations have appointments set at the South Coast Air Quality Management District between March 24 and March 27 to demonstrate their reduced VOC products. Real product development has started and Don indicated that he was encouraged by the fact that pipe and fitting fabricators are now starting to get involved in the process.

Don Goodman reviewed the first year's accomplishments and indicated that last week, in a meeting with staff personnel at the South Coast Air Quality Management District, the bubble concept, which enables reducing total emissions by trading or purchasing of credits from older obsolete facilities would be acceptable to the agency.

Longer term, he expects that SCAQMD will ratchet down VOC levels to 125 grams per liter or lower. At the same time, NSF standard 61 will address immuno-toxicity potentials.

Action:

Don Goodman will continue to update the Technical Committee on this project at future meetings.

VI. SENSORY IRRITATION/INDOOR AIR POLLUTION

Lee Fishbein indicated that two Borden representatives, George Ruscinkovitch, Technical Director of the Columbus Coated Fabrics Division and Mark Grunwald of the Borden Corporate Science and Technology Department are participating in the ASTM D 22.05.01 committee, which is addressing the development

of standards for indoor air pollution. He noted that a symposium is being sponsored by ASTM in Pittsburgh on this subject on April 27th and 28th and a meeting of the ASTM committee will be held on April 29th.

Roy Gottesman pointed out that it is important to be involved in this activity so as to assure that any consensus standards developed do not adversely impact in vinyl's use in the built environment.

Action:

Lee Fishbein will report on this ASTM activity at the May 28th Technical Committee meeting.

VII. NEW BUSINESS

A. Unit Risk Fact/VCM

Ron McCreedy indicated that there is an ongoing activity involving ICI, CIIT in Dow, in which pharmacokinetics modeling is being used to get a better risk assessment on vinyl chloride monomer. While the 3 organizations have not met since December, the program is up and running. Human data as available from IARC and rodent data are being used.

An analysis of the data is underway and the participants hope to be able to exchange data in June. This will then be peer reviewed and published. Ron McCreedy expected a detailed update from Dr. Dick Rietz of Dow on March 17th. The present analysis involves data on workers in an occupational setting and once completed, it will be extended to include young children and the elderly. Some \$10,000 is incorporated in next year's Vinyl Institute Technical Committee budget to fund this additional work.

VIII. FORMAT FOR FUTURE MEETINGS

Ron McCreedy suggested that inasmuch as a fair amount of time is spent reviewing history during the meetings, that a more efficient way would be for the presenter to provide, in advance of the meeting, a one paragraph summary and update. After discussion, it was agreed that Ron McCreedy and Roy Gottesman will restructure the agenda for subsequent meetings and will ask persons reporting to briefly review the objectives and status of each project before presenting an update.

IX. BUDGET FOR FISCAL YEAR 1992-1993

Prior to presenting the budget for the next fiscal year, Bob Burnett reviewed the status of expenditures. Billings through January 31, 1992 totalled \$99,942. Based on pro-rating expenditures to the end of the fiscal year and other anticipated expenditures a positive variance of \$47,337 is projected. This will be reduced by the amount of money that will be paid to Goodrich for completion of the HCl decay studies.

Bob Burnett also presented the proposed budget of \$135,000, details of which can be found in Appendix One attached to these minutes.

X. REVIEW OF ASSIGNMENTS

Larry Brecker

Larry Brecker will review the procedure used by the Norwegian investigators and will provide Roy Gottesman with a letter that can be transmitted to the ECVI group regarding the authenticity of the labeled PVC.

Bob Burnett

Bob Burnett will see that copies of the LCA report are distributed to those Technical Committee members who have not yet received same.

Bob Burnett will provide Tellus with a copy of the Chem Systems lifecycle analysis report.

Lee Fishbein

Lee Fishbein will report on this ASTM activity at the May 28th Technical Committee meeting.

Don Goodman

Don Goodman and Dick Magee will update the Vinyl Institute on the decisions made by the Partnership for Plastics' Progress regarding incinerator capacity and will coordinate the Vinyl Institute's effort with the Partnership activities.

Don Goodman will continue to update the Technical Committee on this project at future meetings.

Roy Gottesman

Roy Gottesman accepted an assignment to follow-up with Dr. Werner Freiesleben of ECVI to assure that monthly updates are received on the Swedish/Norwegian studies.

Lou Maresca is to follow-up with Bob Hinderer and the Medical/Health subcommittee to see that this compendium of fire toxicity publications moves forward.

Ron McCreedy

Ron McCreedy will send a list of LCA reports developed at Dow to Roy Gottesman.

XI. NEXT MEETING DATE AND LOCATION

The next meeting of the Technical Committee will be held on May 28 at 1:00 p.m. at the Ponte Vedra Inn and Club, Ponte Vedra, Florida.

The meeting was adjourned at 3:20 p.m.

Respectfully submitted,


Roy T. Gottesman

Appendix 1

TECHNICAL COMMITTEE
1992-1993 PROPOSED BUDGET

Ad Hoc Solvent Cement Project	\$ 25,000
VCM Cancer Risk Assessment Proposal	10,000
Incineration Studies Including Supprt of European Work	20,000
Revision of LCA Report	20,000
Incineration-Related Work	25,000
Sensory Irritation Studies	10,000
Medical/Health Compendium - Editorship/Publication	15,000
Contingency (Non-Specific Projects)	10,000
Total	\$135,000*
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* \$50M Contingency (fire/combustion studies)

**Does not include consulting fees

R&S 144494