

TECHNICAL COMMITTEE MEETING

The Rittenhouse Hotel
210 West Rittenhouse Square
Philadelphia, Pennsylvania

Thursday
September 12, 1991
8:00 a - 12:40 p

Attendees:

Frank Borrelli, Georgia Gulf Corporation
Robert Burnett, Vinyl Institute
Charles Bush, BFGoodrich Company
Michael Fisch, Witco Corporation
Leon Fishbein, Borden Chemicals and Plastics
Donald Goodman, OxyChem
Roy Gottesman, Vinyl Institute
H.J. "Bud" Hall, Vista Chemical
Richard Magee, NJIT
Ron McCreedy, Dow Chemical
Debbie Neale, BFGoodrich Company

I. OPENING OF MEETING/APPROVAL OF MINUTES OF MAY 30, 1991 MEETING

Chairman Charles Bush opened the meeting at 8:07 a.m. with a round of self-introductions. The minutes of the May 30, 1991 meeting were approved as received on motion of Bud Hall, seconded by Leon Fishbein.

II. OBJECTIVES OF MEETING

Chairman Bush indicated that the objectives of this meeting were to provide an update to committee members on key technical programs, to discuss the projects and issues and to develop recommendations for the Executive Board where appropriate and necessary and, finally, to identify new issues for consideration by the committee.

III. PROJECT REVIEWS

A. Incineration

Dick Magee provided an update on the European incinerator study. He indicated that the steering committee had met early in June in Sweden and full details on this meeting

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are contained in his memorandum to Roy Gottesman dated June 6, 1991 which was sent out to the committee on June 13th.

He noted that the pilot scale reactor at Umea, Sweden is operating. Issues relating to both the chlorine content of the feed and copper content of the waste have now been resolved. The Swedish investigators will develop a new fuel with less copper, as copper is a known dioxin formation catalyst and in a fluidized bed reactor could cause recombination in the off-gases. They will also carry-out runs with a fuel that contains 0.1% chlorine.

The next meeting of the steering committee will be held in early November, and at that time, there should be preliminary test results from the reactor shakedown as well as a full discussion of the experimental plan.

The proposed Norwegian study could be a "disaster" according to Dick Magee. The workers at Oslo do not understand combustion and reactor construction and there are certain constraints in their work which will not enable them to simulate the reactor at Umea. There was agreement that the Norwegian workers will use the Umea fuel to determine whether they get test results that are comparable to the fluidized bed Swedish reactor. If they do not correlate with the Swedish reactor, there is no point in carrying out the work. The attempt to use radio labeled chlorine in the PVC causes some unreasonable constraints and Dick Magee and Professor Buekens met with the Norwegian scientists and suggested a different combustor.

Further, it now appears that the Norwegian workers will not be able to know whether the chlorine in the dioxin comes from PVC, as the level of radioactive chlorine is so low.

Dick Magee has written a memorandum to Rune Niklasson recommending a redirection of the study, but is concerned that Mr. Niklasson does not understand what the Norwegian workers are proposing to do.

Don Goodman requested further information on how the radioactive chlorine label PVC is prepared.

Danish investigators have expressed an interest in also being involved in the study, although no proposal has been received from them yet. Their main focus appears to be the scrubbing of chlorine from incinerators.

Dick Magee also reported on recent work carried out at Karlsruhe in Germany by Professor Vogg. Preliminary results indicate that large increases in PVC in incineration did not cause an increase in PCDDs, but there was a slight increase in PCDFs. These are preliminary data and Dr. Vogg is to carry-out additional work starting with feed having lower chlorine levels.

Since the method for HCl recovery from incinerators appears to be taking on added importance, Dick Magee indicated that, at the request of Roy Gottesman, he has asked Dr. Henry Shaw at NJIT to have a student carry out a literature search on the direct recovery of HCl from incinerators. Approximately 100-200 references have already been found and work is now underway to compile this into a report along with a discussion of options for handling HCl.

Finally, Dick Magee indicated that following a meeting with Roy Gottesman and Bob Burnett, he has undertaken a project to provide an overview of the status, future and costs of municipal solid waste incineration in the United States. He distributed a copy of a letter to David Sussman of Ogden-Martin Systems, dated September 4, in which he has requested certain current information to enable him to complete this report.

Assignments:

1. Dick Magee has a continuing assignment to participate in the meetings of the steering committee on the European incinerator study.
2. Roy Gottesman will continue to liaison with Werner Freiesleben of ECVN on this subject, and if compatible with his schedule, he will attend the next steering committee meeting.
3. Dick Magee and Roy Gottesman will try to see that the Norwegian study is re-directed as has been suggested, so that emphasis is not on a direct correlation with the Umea study, but rather on precursor formation.
4. Dick Magee will provide Don Goodman with information on the synthesis of radioactive chlorine labeled PVC.
5. Dick Magee will provide the literature study on direct recovery of HCl.

6. Dick Magee will provide a summary of the status, future and cost of MSW incineration.

Roy Gottesman briefly discussed the incineration of hospital waste and reviewed information which he had previously distributed on the ABB Sanitec method for destroying hospital waste without incineration.

B. Fire Sciences

1. NIBS Test - ASTM Activity

Bud Hall reported that the NIBS test has received a number of negative votes in the ASTM process and appears to be a dead issue. The NIST test being proposed using the NIBS apparatus and a cone calorimeter appears to be gaining favor and is to be evaluated in an ASTM task group. Roy Gottesman distributed a copy of a memorandum received from Dick Gann at NIST dated September 6th, which provided information on their approach to the smoke toxicity issue. An ASTM task group is preparing the method for consideration in subcommittee E 5.21 and Dick Gann noted that the NFPA fire test committee has also asked for the text to start its process of reviewing this method.

2. Report on Coordinating Committee on Fire Safety (CCFS) Meeting

Bud Hall noted that at the recent CCFS meeting, Dr. Yves Alarie discussed a new test that he has developed, UPITT II. As the results obtained using this modified test appear too favorable towards PVC, Dr. Alarie has developed a factor which make the results less favorable.

Bud Hall also advised that after discussion at CCFS, decision was made that CCFS members would be in favor of using the UPITT I test, i.e., the modified test being used in the New York State Toxicity Data Bank if industry is forced to endorse a test as a result of the considerations by the New York City Toxicity Advisory Committee. This would be done so as to minimize costs and not because the test is considered to be the best available technically. There was some discussion on this New York City Advisory Committee and who was driving and/or leading it. At past meetings, attendance by industry representatives has been very good (Fred Clarke represents SPI and Bob Strength represents Monsanto), but Deborah Wallace has been absent at

all meetings and Rosalind Anderson did not attend the last one. Roy Gottesman voiced his view that it is most desirable for industry representatives to continue to be involved in this process so as to insure that its views are factored into the decision making process.

In this connection, Debbie Neale said that she may consider pursuing the use of political pressure to get MEA's, which are currently stalled, pending the outcome of the Toxicity Advisory Committee's deliberations released.

3. Tests For Corrosion Associated with Fires

On the issue of corrosion associated with fires, Bud Hall advised that IEC '89 will meet in Paris this September and 7 tests are under consideration. These include primary acid gas tests and tests that offer measurements which could be used in a corrosion hazard assessment (E 5.21.70 and D 9.21.4). He believes that based on the SPI position paper that has been developed with criteria for corrosivity testing, E 5.21.70 and D 9.21.4 are superior to the others. Carbide has presented data on E 5.21.70 and the CNET test, while DuPont has provided data on D 9.21.4 and the CNET test at the summer CCFS meeting.

Bud Hall indicated that he has asked Bob Strength to obtain copies of this information for review. Such a review will take place involving Bud Hall, Peter Lloyd and Marcelo Hirschler to decide on which test should be utilized in future work. He also indicated that inasmuch as this appears to be an industry-driven issue, he believes that it is necessary for industry to meet with users, viz. Bellcore and IBM, and that any large-scale tests that may be carried out in the future would be delayed until such discussions. Bud also noted that this appears to be a use area that will be obsoleted by the use of glass fiber technology.

In summary, inasmuch as other market forces are impacting the role that PVC may have in the telecommunications market, he views the best strategy here as one of "damage control".

Roy Gottesman advised the group of a colloquium on smoke corrosivity to be held November 7th and 8th in Baltimore, Maryland under the co-direction of Henry Roux and Gordon Hartzell. Bud Hall reported

that Marcelo Hirschler will attend this colloquium in behalf of the Vinyl Institute.

4. Other Matters

- a. Bud Hall indicated that although samples were requested by Archie Tewarson of Factory Mutual for some testing awhile ago, this has not been pursued.
- b. With regard to military standards and specifications, there was nothing new to report, as this is not a high-priority area.
- c. Recent letters from the State of New York regarding de-listing products from the New York State Toxicity Databank as a result of test results at U.S. Testing, which appear to be outside the range of results obtained at other laboratories. This is being pursued by the Plastic Pipe Institute to determine whether the state has legal authority to de-list materials.
- d. The paper on the critique of the NIBS test has been accepted for publication in The Journal of Fire Sciences and reprints have been ordered.
- e. Don Goodman raised the issue of vinyl siding and the administrative approach to be taken at the forthcoming BOCA meeting to reverse their actions which are detrimental to vinyl siding. He posed the question whether there was a back-up appeal should this administrative appeal fail. It was noted that the Vinyl Siding Institute has become more aggressive in dealing with code matters and that they have prime responsibility here. It was suggested that if Don has suggestions or input into this process, he provide these directly to the Vinyl Siding Institute by participating in their program.

Assignments:

1. Bud Hall has the continuing assignment to talk with Tom Williams/Charles Carman at BFGoodrich to determine whether work to insure that PVC is included in certain military standards and specifications.

2. Bud Hall had an assignment emanating from the Electrical Materials Council involving a comparison of different polymers and their fire properties and a simplified document dealing with fire modeling that would be understandable by laymen. Bud indicated that a first attempt at such a simplified paper had been made by Marcelo Hirschler and it is now being reviewed by Rick Smith, Chairman of the Electrical Materials Council.

Bud Hall noted that there was an excellent article by John Hall on fire modeling, and at Roy Gottesman's suggestion, it was agreed that this article should be sent to our communications firm, Edward Howard and Company with the request that they develop a simplified and easily-understandable paper on this subject.

C. Lifecycle Assessment

The draft report on the lifecycle assessment of vinyl products has been received from Chem Systems. Roy Gottesman also indicated that Ron Cascone of Chem Systems met last week with Dr. Ian Boustead and reported that Dr. Boustead had no criticism of the Chem Systems methodology. He was, however, concerned about the text being "pretty rough" on previous practitioners in this area. Chem Systems has agreed to tone down its criticism of earlier lifecycle assessment studies. He also asked that the report emphasize that it is applicable only to U.S. practice, which was the focus of this study and that the analysis for European countries could be considerably different. Chem Systems has also agreed to do this.

Environmentalists who were given copies for peer review have not yet responded and Roy Gottesman indicated that he will suggest to Ron Cascone that a follow-up letter be sent to these people with a deadline for reply. Those that reply or provide comments would be offered a copy of the final report, while non-responders will not receive same.

After the report is completed, it was agreed that Edward Howard and Company will be asked to write a layman's summary which can be used for dissemination of this information.

Assignments:

1. Roy Gottesman is to arrange for the subcommittee to meet with Ron Cascone at Chem Systems to finalize the report. The preferred date is for the afternoon of October 15th at Chem Systems in Tarrytown.

2. The Technical Ecobalance Subcommittee is to provide a recommendation to the full technical committee at its December meeting on dissemination of the lifecycle assessment information.

D. Health/Medical Effects

In the absence of Bob Hinderer, Chuck Bush provided the following update:

The Medical Committee presently has two outstanding activities. They are giving top priority to the completion of the remaining 3 papers on primate/rodent studies with PVC and HCl which were conducted at Southwest Research Institute. It is their current plan to submit these to the Vinyl Institute for approval by the end of September and subsequently to Fundamental and Applied Toxicology for publication.

Because of other matters, Bob Hinderer reported that no time has been available for the monograph project and this will be delayed until the papers on the primate studies have been submitted for publication. Bob Hinderer also reported a final item of interest, not within the purview of the Technical Committee, that being the development of emergency exposure guidelines for VCM. Jim Knaak of Occidental reports that he will have available by the end of September with the ultimate goal being submission to AIHA for adoption shortly thereafter.

There was brief discussion on the anti-chlorine initiatives undertaken by Greenpeace and the critique of their recent paper. The Chlorine Institute has taken the leadership here and is arranging, with the assistance of a consultant, to have a counter-document. Ron McCreedy expressed concern which people at Dow have that an item-by-item rebuttal could inadvertently given credibility to the Greenpeace document.

IV. SOLVENT CEMENT ISSUE

Don Goodman reported on the two task forces that have been set-up to respond to the threat to small-diameter pipe markets as a result of the issue relating to volatile organic emissions from solvent cements.

The Ad Hoc Group on Solvent Cements consists of manufactures of resins, solvents, solvent cements, molders, extruders, ABS manufacturers and trade associations. Approximately \$100,000 has been raised with funding from the Vinyl Institute, PPFA, solvent and cement manufacturers. Of this, approximately

\$40,000 will be required for legal expenses, some \$25,000 for technical work including the use of outside contract consultants and the balance would be used for administrative communications and public relations costs.

Don Goodman noted that the ad hoc organization is in place. In addition, a separate group under NSF is addressing potential health effects. The mission of the ad hoc group is to maintain the status quo for solvent cements within applicable regulations, to obtain factual information for use in contacts with California agencies and to determine if there are alternatives for joining systems.

The key activities of the ad hoc group are to carry-out a material balance, so that there is a clear understanding as to how much of the VOCs are actually lost in the process and how much remains with the solvent-cemented joint. He noted that Naresh Patel of IPS already has completed a 150-day study on the loss of solvents from joints, and this data has already been submitted.

The intent is to try to demonstrate that a major portion of the solvent cement is not available for emission into the atmosphere, but either remains entrapped or bonded in the joint. Don Goodman reported that FMC as a contractor to the South Coast Air Quality Management District (SCAQMD) has developed a static test and it is unlikely that the applied test will enable SCAQMD to enforce these regulations by January 1, 1993. Nevertheless, Don stressed the importance of obtaining data and arguments to submit to the rules department at SCAQMD by April 1992, which would serve as a basis for new rule changes.

With regard to reproductive toxicity testing as required under NSF Standard 61, Don Goodman indicated that Ed Haltom and he had met with Nina McClelland and she has agreed that deadlines for solvent cements to conform with NSF 61 will be linked to the deadlines set under the SCAQMD regulations. He indicated also that BASF has agreed to do the reproductive toxicity data gathering on THF and his considered guess is that THF will be found satisfactory. He also expects BASF will underwrite the cost for the reproductive toxicity tests on cyclohexanone. Information is still lacking on acetone from the Ketone Council and MEK is also an uncertainty. Negotiations continue with the Ketone Council to assure that this information is provided to NSF.

V. BUDGET REVIEW

Roy Gottesman provided information through August 30th which indicated that, year-to-date, \$46,151 of a total budget of \$187,500 has been expended. At this time, there appear to be

no budget problems which is being closely monitored. However, it was noted that expenditures with Safety Engineering Laboratories (Dr. M. Hirschler) if allowed to continue at the current rate of expenditure would exceed the contracted agreement of \$44,000 for the entire year.

VI. NEW BUSINESS

A. Process Emission Studies

Chuck Bush asked for volunteers to attend a meeting at SPI Headquarters in Washington, D.C. on September 25th to review a draft report from the University of Lowell on process emissions.

Assignment:

Technical Committee members are to advise Chuck Bush regarding possible attendance.

B. Hazard Communications/MSDS Informational Meeting

Don Goodman indicated that OxyChem is proposing to share its approach on hazard communications with Vinyl Institute members. A meeting has tentatively been set for Thursday, October 17th in Atlanta and will also highlight the Responsible CARE/Product Stewardship Programs.

C. Durables Recycling

Roy Gottesman indicated that this issue will take on increased importance and recommended participation in a meeting being held in Washington on October 31st sponsored by the Council for Solid Waste Solutions. Frank Borrelli and Lee Fishbein already are planning to attend and Bob Burnett will see that an invitation is also issued to Bud Hall.

D. Indoor Air Pollution

Roy Gottesman noted activity at Anderson Laboratories on this subject and recommended that the Vinyl Institute member companies become involved in ASTM D-22 Committee which will be considering methodology and a voluntary consensus standard for this type of testing.

Lee Fishbein of Borden agreed to follow-up and Frank Borrelli will also look into this on behalf of Georgia Gulf.

VII. NEXT MEETING DATE

The next meeting of the Technical Committee will be held on Tuesday, December 3, 1991 in New Orleans at the Airport Hilton Hotel. A separate meeting notice will be issued. Further details will be provided to the committee as to location.

VIII. ADJOURNMENT

There being no further business the meeting was adjourned at 12:40 p.m.

Respectfully submitted,

Roy T. Gottesman

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