

D. MEDICAL/HEALTH EFFECTS PROGRAMS

1. Submit papers from the primate/rodent studies with HCl and PVC at Southwest Research Institute to journals for publication by March 31, 1991.

Status: On target. Papers are close to final form.

2. Compile a compendium of critical papers on PVC fire hazard, toxicity, and health effects for educational purposes.

Status: The process of compiling and reviewing critical papers has begun. Publication of the compendium is anticipated in 1992.

3. Consulting Relationship with Dr. H. Kaplan.

Budget: \$15,000

Expected Expenditure: \$15,000

This is to provide support for his efforts on papers on the rodent/primate studies and for presentation of papers and representation at conferences. Action items have been identified.

E. CONTINGENCY BUDGET FOR FY 1990/91: \$20,000

C. N. Bush
February 5, 1991

R&S 144574

C. FLAMMABILITY/COMBUSTION TOXICOLOGY

1. Maintain a presence in the area of combustion toxicity test methodology and hazard analysis to ensure that such methods are based on good science and accurately reflect the fire safety of vinyl polymers.

NIBS Combustion Toxicity Test.

Goal: Make sure that the scientific shortcomings in this test method are recognized.

Status: The NIBS method has moved to ASTM for balloting at the E5 subcommittee level. No ballot has been received yet by the E5 membership. Through our efforts the criticisms NIBS received on the method will be made available to anyone who wishes to see them.

New Test Methods.

NIST has officially proposed a new test based on the NIBS apparatus. It incorporates concepts for making a simplified toxic fire hazard assessment which address the scientific inadequacies of the current NIBS method. It should provide much more realistic results on vinyl products. This test will be discussed at the SPI CCFS meeting on Feb. 13-14, 1991 for overall SPI endorsement.

2. Carry out research to address the alleged issue of corrosivity of combustion products of vinyl relative to other materials.

Goal: Put the potential for service interruption of electrical and electronic components by smoke from the combustion of PVC products relative to smoke from competitive products in the proper perspective. Service interruption encompasses corrosion, conductive sooting, and contact fouling.

Status: After considering the rationale for a large scale experimental program, we elected not to proceed with it. Instead, we have defined a small scale test program based on the radiant apparatus being proposed at ASTM. We have requested a cost estimate from UL for this test program.

3. HCl Decay. Only one project remains to be completed and will be done on target (June, 1991). This project is the "decay without generation" project.

The results and modeling work we have done in this area is now included in NIST's HAZARD fire model as an upgrade to the first version and will be included in the next version of the model which is due out in June, 1991.

2. Support programs which demonstrate and/or promote the collection and recycling of vinyl products.

Budget: \$15,000
Expected Expenditure: \$15,000

Vermont Republic Industries. The goal of this relationship is to maintain contact with the head of this company and to help him be a favorable spokesman on vinyl recycling.

R2B2. A letter of agreement between R2B2 and the Vinyl Institute has been finalized to provide a travel grant of \$10,000 to R2B2 to participate in four conferences, four public forums, and four training sessions to describe their post consumer plastic recycling activity. This activity includes the recycling of vinyl, PET, HDPE, and polypropylene.

3. Maintain contact with various municipal solid waste programs as appropriate to promote the recycling of vinyl and to dispel incorrect perceptions about the recyclability of vinyl.

Budget: \$50,000
Expected Expenditure: \$50,000

Members of the Technical Committee maintain contact with New England CRInc., the Rhode Island Department of Environmental Management, and other similar programs for this purpose. We also maintain a membership in the Plastics Recycling Foundation (PRF) to make sure that the vinyl industry's interests are included in this program.

4. Carry out research demonstrating that vinyl in municipal solid waste streams can be incinerated safely.

Swedish/Norwegian Incineration Projects. Across Europe there continues to be a widespread perception that the presence of PVC in municipal solid waste is responsible for dioxin and furan emissions. Through our consultant, Dr. Richard S. Magee of NJIT, we are involved in the planning of Norwegian and Swedish laboratory studies which are intended to provide further scientific rigor to definition of the role of PVC in dioxin/furan emissions and consequently to gain greater acceptance for the incineration of PVC in the European community. These studies are being guided by a steering committee consisting of incineration experts from Belgium, Italy, Germany, Sweden, Norway, and the U.S. (Dr. Magee).

Status: The initial meeting of the steering committee was in Umea, Sweden on October 30, 1990. The next meeting is scheduled for June 3-4, 1991 in Oslo, Norway. Drs. Magee and Gottesman are continuing to work with the Norwegian and Swedish research groups to resolve several technical concerns that were identified at the first meeting. Actual experimental work is expected to commence in August, 1991 following a three month calibration and "shake down" period on the new test incinerators currently under construction.

B. SOLID WASTE MANAGEMENT

1. Carry out programs to fill technology gaps in recovering the vinyl component of the solid waste stream.

National Recovery Technologies (NRT).

Budget: \$50,000

Expected Expenditure: \$50,000

Milepost: Full scale vinyl sortation system by the end of 1990.

Status: The current schedule is to install the first unit at XL Corp. (a waste management firm) in Chicago in the 1st Quarter of 1991. A more detailed report is in Fred Krause's VIGOR update.

CPRR - Rutgers.

Budget: \$25,000

Expected Expenditure: \$25,000

Milepost: Complete development of technology for bottle separation.

Status: The final report on the ASOMA detector system in the Rutgers pilot plant was received. This completes the VI funded part of the Rutgers program. Work continues at Rutgers to develop a singulation device to feed bottles to a sortation unit that would include the ASOMA unit for detection of vinyl. The need for this device was demonstrated in earlier trials of the system. The report suggests that this unit should be capable of distinguishing bottles at 10 units/sec. with an expected error rate of less than one bottle per million examined.

The NRT and CPRR programs complement each other in that they are taking somewhat different technical approaches and could ultimately be the basis for a two stage coarse/fine sortation system.

DevTech.

Budget: \$30,000 (FY 90-91), \$70,000 (FY 91-92)

Expected Expenditure: \$100,000

DevTech is a small technology company with a unique technique for separating vinyl flakes from other materials. This technique is currently at the small lab bench scale, and they are proposing a project to pilot the technique. This technique could offer a final separation method to get very pure recycled streams.

Status: The project will begin once the details of the relationship with a partner equipment manufacturer is defined.

C

VINYL INSTITUTE TECHNICAL COMMITTEE

FEBRUARY, 1991 STATUS REPORT

MISSION STATEMENT

The mission of the Vinyl Institute Technical Committee is to provide technical support to the proactive VI Task Forces and to VI activities which address regulatory, health, environmental, and other marketplace issues which impact on the existing and future uses of vinyl products.

Fulfillment of this mission encompasses five general categories:

1. Development and documentation of scientifically sound information regarding the performance of vinyl products and execution of research projects which fill important technology gaps pertinent to the use of vinyl products.

2. Technical support to the VI Proactive Task Forces (Electrical Materials, PRO, and Packaging Council).

3. Participation in the presentation and promotion of scientific facts about vinyl products to audiences such as government, industry organizations, and environmental organizations.

4. A proactive "early alert" function which recognizes coming issues, recommends action, and takes appropriate action.

5. Liaison with other trade associations and consensus standards organizations (e.g. ASTM) to further the interests of the vinyl industry.

KEY PROGRAMS

A. PVC ECOBALANCE/LIFE CYCLE ANALYSIS

Budget: \$150,000

Expected Expenditure: \$100,000

Goal: Develop credible life cycle analyses comparing the environmental and energy impacts and benefits of vinyl products and key alternative materials.

Milepost: Complete first analysis on rigid containers and film/sheet materials by May, 1991.

Status: The Chem Systems project was kicked off on Dec. 5, 1990. Specific objectives, methodology, and modeling steps were agreed upon. The first project review meeting is scheduled for Feb. 7, 1991. The current plan is to have a draft report finished for review in mid-May.

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