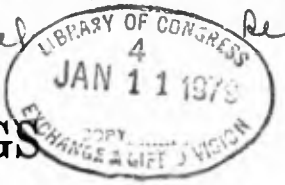
REIMBURSEMENT FOR LOSSES INCURRED BY GOVERNMENT BANNING OF TRIS

United States. Congress. House. Committee on the Judiciary. Subcommittee on Administrative Law and Governmental Relations.



HEARINGS

BEFORE THE

SUBCOMMITTEE ON ADMINISTRATIVE LAW AND GOVERNMENTAL RELATIONS

OF THE

COMMITTEE ON THE JUDICIARY HOUSE OF REPRESENTATIVES

NINETY-FIFTH CONGRESS

SECOND SESSION

ON

REIMBURSEMENT FOR LOSSES INCURRED BY GOVERNMENT BANNING OF TRIS

JUNE 14 AND 15, 1978

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REIMBURSEMENT FOR LOSSES INCURRED BY GOVERNMENT BANNING OF TRIS

WEDNESDAY, JUNE 14, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ADMINISTRATIVE LAW AND
GOVERNMENTAL RELATIONS
OF THE COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:30 a.m., in room 2226, Rayburn House Office Building, Hon. George E. Danielson (chairman of the subcommittee) presiding.

Present: Representatives Danielson, Mazzoli, Harris, Moorhead, and Kindness.

Also present: William P. Shattuck, counsel; James H. Lauer, Jr., assistant counsel; Alan F. Coffey, Jr., associate counsel, and Florence McGrady, administrative assistant.

Mr. DANIELSON. The subcommittee will come to order, a quorum being present for the taking of testimony.

Today we will take up the bills relating to the subject matter of Tris.

I doubt if there is anyone here who does not know what that refers to but, against that possibility, the Federal Government in April of 1977 banned as dangerous sleepwear and certain fabrics which had been treated with a chemical known as Tris, T-r-i-s, in a concentration of 100 parts per million or more for the reason that tests indicated that such a substance might be carcinogenic, cancer causing.

Many manufacturers and handlers of sleepwear particularly of uncut fabric which had been treated with Tris were no longer able to dispose of their product in the channels of commerce and sustained a substantial financial loss.

The bills, and there is a host of them, would provide that the Court of Claims should have jurisdiction to hear claims for losses sustained because of the prohibition of the use of Tris and render judgment for the claims for those who sustained losses.

There are a number of protective provisions in the bill relating to damages, necessary proof, and the like.

We are favored this morning with having with us several Members of Congress who have honored the needs of their constituents by putting in bills relating to Tris, and I am going to start off with the gentleman from South Carolina, Mr. James R. Mann, a Member of the Judiciary Committee.

Mr. Mann, why don't you proceed in whatever manner you like. I know you will give us a few very well placed words which will set forth your position.

TESTIMONY OF HON. JAMES R. MANN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF SOUTH CAROLINA

Mr. MANN. Thank you, Mr. Chairman.

Ordinarily, I adopt your policy and don't read statements, but I have a fairly brief statement which I think poses the situation fairly well, so I will just read it.

Mr. Chairman and members of the subcommittee, I am pleased to speak today for myself and other sponsors in support of H.R. 7158, which is similar to S. 1503, a bill that already passed the Senate on the same subject, a bill providing for reimbursement for direct losses following the Consumer Product Safety Commission's ban on the recall of children's sleepwear treated with the chemical Tris.

This legislation is a matter of simply equity, Mr. Chairman, on which I hope the subcommittee can move expeditiously.

As a matter of background, in 1971 the Commerce Department, which then administered the Flammable Fabrics Act, proposed a stringent standard for children's sleepwear. They acted in response to a deep and legitimate concern on the part of Government and consumers for protecting children from burns.

The record shows that the textile/apparel industry at that time voiced grave concern about the possibility of unknown toxic effects of chemicals which would be required to meet these standards, and warned that technology necessary to treat conventional fabrics to achieve compliance did not exist.

Nevertheless, the Department moved ahead and required that the standards be met, although Richard O. Simpson, then Deputy Assistant Secretary of Commerce for Product Standards, admitted that the Department had "practically zero knowledge regarding the effects of fire-retardant chemicals on humans."

To stay in business and in compliance with the law, manufacturers were forced to turn from conventional fabrics then in use, mainly cotton and blends of cotton and other fibers, and began to use instead polyester, acetate and triacetate treated with Tris, the only flame retardant then available to effectively treat these fabrics. Fabrics produced at that time were subjected to and passed the tests then known and required.

In the spring of 1976, the Environmental Defense Fund raised questions about possible carcinogenic effects of unwashed Tris-treated garments. It is interesting to note that they did not originally request a Tris ban, but asked that these goods carry a warning label saying, "Please wash before wearing."

Responsible witnesses before the Senate Judiciary Committee agree that industry began phasing out the use of Tris as soon as it was even suggested that the chemical might pose a health risk.

So we have an industry which originally raised reasonable objections to a proposed Federal standard which would heavily impact its operations and which involved unknown human risks. We have an industry which then moved responsibly and in good faith to comply with that standard. Mr. Simpson who, by the way, also

served as the first Chairman of the CPSC, called the industry's record of compliance "remarkable." Then, when health questions arose and when, incidentally, continued research had produced other chemicals which would allow compliance with the flammability standard, we have an industry which moved immediately away from Tris as a chemical treatment.

As a matter of fact, when the CPSC issued its ban on Tris on April 8 of last year and set in motion the automatic repurchase situation, indications are that Tris-treated fabric was no longer even being sold for apparel uses, although it was of course on retailers' shelves and in manufacturers' and mills' stocks.

I am not here to take issue with the Government's decision on either the flammability standard or the Tris ban, certainly the Government is acting properly in trying to protect our children from fire and from cancer.

It is, however, interesting to note that the medical community is not unanimous on the carcinogenic effects of Tris, and some experts believe that the evidence that it is carcinogenic in humans who wear Tris-treated garments is less than convincing. While countless lives have been saved and scores of injuries prevented since the flammability standard was implemented, there has been no known instance of cancer directly attributable to Tris.

I am here to argue the basic fairness of the position taken in H.R. 7158 and its Senate counterpart, S. 1503. The textile/apparel industry went out of its way to meet the rigid requirements of the federally mandated flammability standard, and did so by the best means it had available at the time and with no indication that Tris was in any way a mutagen or carcinogen. Absent a flammability standard, the industry would not have used Tris.

If the Commerce Department had heeded warnings of inconclusive health tests of chemicals required to meet the standard, perhaps the potential danger would have been exposed. Or if the luck of the draw had been such that another chemical had proved as good a flame-retardant as Tris, the industry would not have this dilemma.

Instead, several years after forcing chemical treatment on sleepwear manufacturers, the same Federal Government now requires that the manufacturers recall those garments and pay for millions of dollars of goods which they were forced by Federal regulation to treat chemically.

As members probably know, a U.S. district court in South Carolina has issued an injunction on any enforcement of the Tris ban, and thus the ban is not technically in force at this moment. Because manufacturers have acted responsibly in continuing to accept return shipments of Tris-treated sleepwear from retailers, this has had the practical effect of putting the entire burden on repurchase—of some $50 million worth of goods according to new estimates of the American Apparel Manufacturers Association—almost solely on the garment manufacturer.

The nature of the business is that a few large mills supply the 100–125 or so children's sleepwear manufacturers who in turn supply their retailers with finished garments.

These 100-plus manufacturers are generally very small, but even so, taken together they provide 27,000 jobs for American workers.

In that they are small, they are frequently undercapitalized and often depend on the credit of their suppliers and upon being able to borrow money on their accounts receivable.

One dire result of the Tris ban has been to impair the ability of children's sleepwear manufacturers to obtain necessary credit, while at the same time exposing them to claims for repurchase of the Tris-treated sleepwear.

Members may recall that several years ago I was in the forefront of those who opposed cyclamate indemnification legislation, and it may appear that my support for the bill before you today is a change in philosophy. It is not. The situations are totally different.

In the case of cyclamates, private enterprise was using its ingenuity in developing products which were ultimately found to be harmful. Cyclamates were used because they were economic and because they fulfilled a consumer demand for sugar-free, low-calorie products. But those who used Tris did not do so by choice. They were using Tris in good faith because the Government required them to use flame-retardant fabrics and Tris was apparently the most feasible way for them to comply with that mandate.

Producers of children's sleepwear were required to follow these Government regulations before the Government itself tested and conclusively determined which flame-retardant chemicals were safe and which were not. The textile industry did not use Tris to reduce its costs; it did not use Tris to increase its profits; and it did not use Tris to make its product more attractive to the consumer. It did so to comply with a Federal mandate, and it did so only after testing methods then in use indicated that Tris was safe.

The Tris situation is unique. I believe it was both unforeseen and unforeseeable.

H. R. 7158 and S. 1503 are clear-cut bills which will allow small children's sleepwear manufacturers to stay in business. The legislation will not result in windfall profits or, indeed, in any profits at all since lost profit is specifically excluded as a compensable item. The legislation represents equity, not reward.

Regardless of fault—and I don't think there are any bad guys in this situation—the fact is that a great damage has been done to small business by Federal regulation, a damage that it is our responsibility to rectify.

I urge the subcommittee to act quickly and favorably on H.R. 7158.

Thank you, Mr. Chairman.

Mr. DANIELSON. Thank you, Mr. Mann.

Mr. Moorhead, did you wish to inquire of Mr. Mann or would you like to proceed with the other witnesses?

Mr. MOORHEAD. I think it would be best if we had both witnesses.

Mr. DANIELSON. Fine.

Congressman Flynt of Georgia, we are delighted to have you with us, and would you proceed with your presentation?

TESTIMONY OF HON. JOHN J. FLYNT, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. FLYNT. Thank you, Mr. Chairman and Mr. Moorhead.

I have a prepared statement which I filed with the committee.

Mr. DANIELSON. Without objection it will be received in the record.

[The prepared statement of Hon. John J. Flynt, Jr., follows:]

STATEMENT OF HON. JOHN J. FLYNT, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. Chairman and members of the subcommittee, I am pleased to have this opportunity to appear here today in support of H.R. 7158, S. 1503, H.R. 8843, the bill which I introduced on August 5, 1977, and other similar bills which would provide reimbursement for economic losses suffered following the Consumer Product Safety Commission's ban on products treated with the chemical TRIS. I respectfully urge prompt approval of this legislation.

Others who are testifying before this subcommittee will detail for you the history of the TRIS ban.

Briefly, in 1971 the Secretary of Commerce issued mandatory flammability standards for children's sleepwear under the Flammable Fabrics Act. This standard in effect mandated the use of TRIS in all polyester, acteate and triacetate fabrics. Although the industry objected on the grounds that chemical flame retardants had not then been sufficently tested for toxicity under generally accepted standards and found to be safe the regulations were implemented.

Early in 1977 the National Cancer Institute published preliminary, unverified results of tests indicating that when TRIS was fed in massive doses to cancer-prone rats and mice over long periods of time, these rats and mice developed cancer.

On April 7th of that year the Consumer Product Safety Commission announced that it was banning the sale of any children's clothing containing TRIS, as well as TRIS-treated fabric for sale to consumers for use in children's wearing apparel. The Commission immediately ordered repurchase of the affected products.

The irony of the situation is that children's apparel manufacturers, largely sleepwear manufacturers, are stuck between the interpretations of the Flammable Standards Act and the Hazardous Substances Act and stand to lose millions of dollars through no fault of their own. This industry was complying in good faith with the government's flammability standard in suppling the children's sleepwear market and then suddenly had thrust upon it another government regulation banning the sale of the complying products and demanding their repurchase, all of this without giving manufacturers due process or the opportunity to be heard. This is a classic example, in my judgment, of the bureaucratic rule-making which is so often beyond the scope of reality.

It seems to me that simple fairness requires that the Government assume responsibility or reimbursing the industry for the losses it sustained following the TRIS ban. Although I am not assessing blame against anyone, I am stressing the inequity which would result if the industry were required to bear the economic loss which followed the TRIS ban.

Again, I urge your prompt and favorable consideration of this legislation for the purpose of alleviating these losses and preventing an entire industry from being placed in financial jeopardy.

Mr. FLYNT. I will summarize the statement by associating myself with the remarks of my colleague, Mr. Mann. He and I both have introduced similar legislation that may even be identical which the committee is today considering.

The history of this Tris situation is interesting, to say the least. So far as I have been able to determine, it is unique. The industry finds itself caught in a vice between the mandate of the Secretary of Commerce and the prohibition by the National Cancer Institute and the Consumer Product Safety Commission.

Briefly, as Mr. Mann has stated in more detail than I will, the standard under the Flammability Fabrics Act in effect mandated the use of Tris in all polyester, acetates, and triacetate fabrics. Now, at that time it should be remembered that the sleepwear garment industry objected, and objected strenuously, on the grounds that chemical flame retardants had not at that time been

sufficiently tested for toxicity under generally accepted standards and found to be safe.

Notwithstanding the strenuous objection by the industry, the regulations were implemented and the industry, to its credit, complied.

Approximately 6 years later the National Cancer Institute published preliminary, unverified results of tests indicating that when Tris was fed—and I emphasize fed, not worn—but fed in massive doses to cancer-prone rats and mice over long periods of time, these rats and mice developed cancer.

Of course, we are familiar with some of the ridiculous tests which some of these carcinogens or possible carcinogens are used and those tests sometimes almost weary the imagination of people trying to devise almost unbelievable tests.

On April 7 of last year the Consumer Produce Safety Commission announced that it was banning the sale of any children's clothing containing Tris, as well as Tris-treated fabric for sale to consumers for use in children's wearing apparel. The Commission immediately ordered repurchase of the affected products. The irony of the situation is that children's apparel manufacturers, largely sleepwear manufacturers, are caught in the vice to which I referred a while ago between the interpretations of the Flammable Standards Act and the Hazardous Substances Act and stand to lose millions of dollars through no fault of their own.

This industry was complying in good faith with the Government's flammability standard in supplying the children's sleepwear market, and then suddenly had thrust upon it another Government regulation banning the sale of the complying products and demanding their repurchase of the very product which they had been forced against their protest to use. And all of this was done without giving either the manufacturers or the processors due process or the opportunity to be heard.

This is a classic example, in my judgment, of the bureaucratic rulemaking which is so often far beyond the scope of reality and, if I may say so, far beyond the scope of legislative intent.

It seems to me that simple fairness requires that the Government assume responsibility for reimbursing the industry for the losses it sustained following the Tris ban. Although I am not assessing blame against anyone, I am stressing the inequity which would result if the industry were required to bear the economic loss which followed the Tris ban.

Mr. Mann already very eloquently described the situation in the garment industry. It is a widespread industry and, of course, there are some components of it larger than others, but by and large, it is an industry composed of small businesses, many of whom would be bankrupted and their lines of credit absolutely destroyed unless some relief is at least held out in the nature of the provisions of bills which Mr. Mann and others have introduced.

So I certainly and with sincerity urge your prompt and favorable consideration of this legislation for the purpose of alleviating the losses which this industry, mostly composed of small businessmen, has incurred through no fault of its own. And I hope that your action will prevent an entire industry, again largely composed of small businessmen, from being placed in financial jeopardy.

Thank you very much, Mr. Chairman.

Mr. DANIELSON. Thank you, Mr. Flynt.

Mr. Moorhead?

Mr. MOORHEAD. Do either one of you have any idea about the amount of Tris-treated garments in existence at the present time?

Mr. MANN. First of all, the dollar estimate is $50 million that has either been returned to the garment manufacturers or is represented by fabrics on the shelves and inventories of the clothing manufacturers who have treated it.

Mr. MOORHEAD. We were told yesterday by retailers that visited us that some of the manufacturers had not had the money to repurchase the products. So, the retailers were likely to be stuck for some of the losses involved here.

Mr. MANN. I am sure that is true. The terms of this bill would require the garment manufacturers or permit them for an additional year to accept returns and be indemnified, so that would provide, if nothing else, support for the credit that would be required to bail out the retailers.

Mr. MOORHEAD. Do you have any idea about how many manufacturers had to go out of business as a result of this?

Mr. MANN. No, I do not. Perhaps some industry spokesman will know, but I don't.

Mr. MOORHEAD. One thing, we have all read stories about Tris-treated garments being shipped to Puerto Rico and to other countries. I just wonder whether a large portion of the materials that are involved have already been dumped outside of the United States and are really no longer present here in this country.

Mr. MANN. I have heard similar stories to that effect, but the stories I hear or the information I have indicates that that is happening in a very, very limited number of cases, and it will not represent any large problem one way or the other.

Mr. MOORHEAD. But does it involve very much?

Mr. MANN. It does not.

Mr. MOORHEAD. Of the garments?

Mr. MANN. The committee, of course, will have a decision to make as to how to treat that as far as indemnification is concerned, how much weight it gives to the fact that desperation requires people to mitigate their damages and salvage what they can, how that is to be weighed off against the moral values involved in there.

Mr. MOORHEAD. You mentioned there was no real proof whatsoever that Tris does cause cancer in humans.

Mr. MANN. That is true. I think that point certainly would be pertinent with reference to considering how to treat those particular manufacturers or retailers who have shipped elsewhere.

However, I think on the general bill itself it makes no difference whether the CPSA was right or wrong or NCI was right or wrong, because the effect has been to make it a nonmarketable product through governmental action, whether they were right or wrong.

Mr. MOORHEAD. At least not marketable here.

Mr. MANN. Right.

Mr. MOORHEAD. Do you know whether any Small Business Administration loans have been made to these manufacturers as a

result of the ban or whether they have been helped in any other way like that?

Mr. MANN. I do not, but I would certainly assume they tried to get some as they try to get credit from any source when they are confronted with a catastrophe, but I doubt the Small Business Administration has been any more sympathetic than they would have been under any other situation.

Mr. MOORHEAD. You have been on this particular committee for many years. Do you think that a referral by this committee to the Court of Claims would solve the problem. Under that particular procedure we would get an answer back from them as to what they recommended?

Mr. MANN. I think it would.

Mr. MOORHEAD. Rather than providing for litigation in the more traditional sense?

Mr. MANN. Yes; the Senate bill, which I strongly suspect the committee will perhaps move toward, permits the Court of Claims to render judgments in favor of the claimant and provide for payment to be made in the same manner as in the case of a claims over which the court otherwise has jurisdiction, so it does not have to come back to the committee.

Mr. MOORHEAD. I understand the difference. That is why I asked you if a congressional reference case would do the job. Actually, what this does, is refer the case to the Court of Claims, and we receive an "advisory opinion." Then Congress makes the final judgment.

Mr. MANN. That is true, but I think that the equity of the bill and the philosophy of it supports that kind of referral to give the court the power to act.

You know, oddly enough, the Congress has taken recognition of these problems fairly recently in the Federal Insecticide Rodenticide and Pesticide Act, where it specifically provided in section 15 that an identification for all of the persons suffering losses by reason of the suspension or cancellation of or registration of a pesticide which has been found to present an imminent hazard.

That, as I say, is a recognition that these situations do develop. I am not saying that we should adopt that across the board as far as the governmental action is concerned, but I do think there are cases, certainly there is no more equity that goes with one of these insecticide pronouncements that it is all of a sudden found to be harmful than there is with the situation we are talking about.

But, as I say, as a general proposition I would rather prefer this committee make those decisions, but I think we can make them in such a manner the Court of Claims can take it from there.

Mr. MOORHEAD. I can see some inequities, but this is a much more complicated situation than it seems like on the surface. There are all kinds of different situations with the different manufacturers. As you stated, so many of them have not been making Tris-treated garments for some time because of the early warnings that they had.

Others have had some in storage but were not manufacturing new stuff; some were still going ahead and manufacturing the product when the ban came; and you have some of them have sold Tris to foreign buyers and exported it out of the country. Others

have refused to take the product back, even though they are supposed to under the statute's repurchase requirements.

So, you have got a million different situations.

Mr. MANN. Quite true; as in all law, every case is different and the Senate bill attempts to provide for a limitation on the situations on which they might profit. It says the court will determine the amount of loss, not including lost profits, not including warehouse charges, attorneys fees, or interest.

Now, if the committee thinks of any other possible area of abuse that should govern the Court of Claims, list them. But I would hate to see the committee have to come back and pass judgment on each of the specific claims.

Mr. DANIELSON. The gentleman's time has expired.

Mr. Mazzoli of Kentucky.

Mr. MAZZOLI. Thank you, Mr. Chairman.

Jim, I wonder is there any precedent for what you either in your bill or what the Senate bill asks to be done?

Mr. MANN. I referred to the congressional action on the Fungicide Act. At the time we were and you were here at the time when we were considering that cyclamate legislation. I don't recall, although I vaguely do recall, George being from California, several of his colleagues were pressing that bill rather strenuously. They may have asserted some precedent, but I don't recall any outstanding precedent.

You may have been here when I distinguished the cases.

Mr. MAZZOLI. Sorry, I was not.

Mr. MANN. In all modesty, I am responsible for the cyclamate bill not passing, although it passed the House, but I went over to the Senate and enlisted some friends, and it did not pass. I was the leader and the main opponent to that.

Mr. MAZZOLI. I won't ask you to go into that, but you see a difference between what we did in cyclamates and the attempt in what you see here?

Mr. MANN. Absolutely.

Let me see if I can paraphase it real quickly.

Cyclamates was not the result of governmental action; it was an economic, money saving sales gimmick, if I can use that expression, on behalf of industry to promote its products.

Here we are confronted with a situation that the industry was forced to apply this product to their goods, they were forced over their protests, not only the protests of economics and degree of compliance, but they raised questions then about the unknown toxic effects on human beings, and the record supports that, and Tris appeared to be at that time the only feasible product that met the standards.

It's a catch 22 situation they were in, they had to go ahead with it, and the minute that they first had evidence that came forward there might be some problem, the evidence also shows, particularly Mr. Simon who was with the Consumer Product Safety Commission, they started withdrawing from Tris, and going to other products which in the meantime were being developed.

Mr. FLYNT. Could I respond further to that?

I would agree with what my colleague, Mr. Mann has said. But I would go one step further and say that we recognize the fact there

is no direct precedent for this type of legislation. But, also we would say that there has never been a set of facts comparable to this before, where in my earlier statement I referred to the vice in which this industry was caught, because when the Tris was mandated the use of Tris or some flame-retardant and Tris was the best they had at that time, the industry strongly protested as vigorously as they could, having to go to it, but they recognized the fact that their protests were an exercise in fultility.

They were forced by Government edict and mandate to employ the use of the flame retardant chemical known as Tris, and then, subsequently, about 6 years later, another Government agency says that it is a carcinogin and, therefore, cannot be used. So I don't think there is any other instance in the history of either the Flammable Fabrics Act or the Consumer Product Safety Act or any of the other regulatory agencies where this set of facts insist where an industry was caught through no fault of its own.

Mr. MAZZOLI. I thank you.

Mr. DANIELSON. Gentlemen, I would like to point out that there is a recorded vote that has been noticed, the second bill is about to ring. I am sorry that we could not at least get all of the Members heard before the marathon started for today, but we are only going to recess long enough to respond to the vote.

I am aware that there are other members present, and as soon as we can get back we will commence again.

Mr. Mazzoli and Mr. Kindness, may I inquire, do you have questions of either Mr. Mann or Mr. Flynt, any further questions?

Mr. MAZZOLI. I am sure I would, but I will defer for now.

Mr. MANN. Let me take 1 minute. Was that the first bell?

Mr. DANIELSON. It's going to buzz in a minute, but go ahead.

Mr. MANN. To more fully respond to Mr. Mazzoli's question and the point Mr. Flynt was making, I have two quotes here.

I referred earlier to Mr. Richard Simon who was with the Commerce and CPSC, who in talking about what developed as these flame retardant requirements were imposed by Commerce said, "Sleepwear manufacturers, as might be expected, raised several objections, including but not limited to the possibility of other unknown toxic effects on humans from untested fire retardant chemicals known to be effective when applied to certain materials."

And Mr. Dan Byrd at the Senate hearing, and he is here to testify today, said, "On April 7, 1971, the Textile Apparel Advisory Committee gave the Secretary of Commerce a full report on the lack of technological capabilities of the industry to meet the proposed standard and cautioned against hasty action without adequate time for allergy and toxicity tests." So it was one of these kicking and screaming type situations.

I remember, frankly, going down and talking to Maurice Stans about the problem. They were being rushed into it. That was the atmosphere.

Mr. MAZZOLI. I thank you.

Thank you, Mr. Chairman.

Mr. DANIELSON. We are about to recess.

I understand, Mr. Preyer of North Carolina, that all you need to do at this moment is insert a statement in the record; is that correct?

TESTIMONY OF THE HON. RICHARDSON PREYER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NORTH CAROLINA

Mr. PREYER. Yes, Mr. Chairman.

Mr. DANIELSON. We are about to recess.

Mr. PREYER. In the interest of time, I will submit it for the record, and there will be several gentlemen from that district, Mr. Bates and Mr. Elam, who will be testifying a little later today.

Mr. DANIELSON. I am sorry they are going to be deprived of your eloquence but we will read your statement and, without objection, the statement of Mr. Preyer is received in the record.

[The prepared statement of Hon. Richardson Preyer follows:]

STATEMENT BY HON. RICHARDSON PREYER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NORTH CAROLINA

Mr. Chairman: As a sponsor of legislation which would allow those textile manufacturers to file a claim for losses incurred as a result of the ban on the use of the chemical Tris in apparel, fabric, yarn or other fiber, I am gratified that the Committee is taking up the issue.

It was government action that required that children's sleepwear be made flame retardant. Stringent standards were placed into effect and the chemical used to make the garments flame retardant, Tris, turned out to be considered carcinogenic. But the damage had already been done. Millions of dollars had been expended on fabric and garments that were in retail inventories when the ban was imposed. Two manufacturers of sleepwear in my hometown of Greensboro alone suffered combined losses of almost $6 million.

Government action is needed to render to these manufacturers a form of relief for losses incurred as a direct result of government imposed standards and through no fault of their own.

There has been some concern expressed about the shipment of Tris treated goods to overseas markets. I agree that we have a moral obligation to apprise our foreign traders of any possible hazards and a new section in the Consumer Product Safety Commission extention legislation provides for such notification. However, I do not believe we should be in a position of setting standards for the entire world. That is not our right nor our responsibility and foreign govenments would be offended at our attempt to establish such standards for their people. The compromise notification in the CPSC bill as opposed to an export ban reflected this view.

Thus, it seems to me that we cannot in all fairness prohibit a manufacturer of Tris treated fabric or garments from seeking relief under this legislation for losses incurred over and above what he may have redeemed from the sale of goods to a foreign buyer.

Many of these small companies could ill afford to absorb such large losses and made sales on the foreign market in an effort to recover some small portion of their losses, not having any assurance that there would be any government indemnity relief forthcoming. In considering this legislation, Mr. Chairman, I would urge the Committee to specifically consider these ramifications.

Mr. DANIELSON. The subcommittee will now stand in recess pending return from the recorded vote.

[A short recess was taken.]

Mr. DANIELSON. The subcommittee will be in order.

We have with us Representative William S. Cohen of Maine, who is a Member of the Full Committee, and I am having him double in brass. He helps me constitute a quorum.

Mr. Cohen, would you proceed, please, with your presentation?

TESTIMONY OF HON. WILLIAM S. COHEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MAINE

Mr. COHEN. Thank you, Mr. Chairman.

I would ask unanimous consent from the chairman that my full statement be included as part of the record, and I will try and summarize it as best I can.

Mr. DANIELSON. There obviously being no objection, it will be received.

[The prepared statement of Hon. William S. Cohen follows:]

STATEMENT OF HON. WILLIAM S. COHEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MAINE

On April 8, 1977, the Consumer Product Safety Commission banned Tris-treated children's garments from the American marketplace. This decision reflected a valid public health concern on the part of both government officials and consumer advocates. With the very real possibility that Tris-treated goods cause cancer, such products were rightfully banned.

But while this was legitimate regulatory action in a general sense, the Commission's overall conduct in the Tris affair can only be portrayed as clumsy and inept. The initial terms of the Tris ban were both illogical and unfair. It was structured so that almost the entire brunt of the repurchase costs were borne by the garment manufacturers. Despite subsequent judicial and administrative attempts to redefine the repurchase responsibilities later on, the apparel manufacturers have still been saddled with an inordinate share of the responsibility and loss.

Perhaps the Washington Post summed it up best in a June 4, 1977, editorial entitled "The Tris Mess". The Post said: "The manner in which the Federal Government has gone about banning Tris-treated sleepwear has been almost a model of how not to handle a serious matter of public safety."

Last year, as a member of the Subcommittee on Antitrust, Consumers and Employment of the Small Business Committee, I participated in a series of hearings on the Tris ban. In particular, we focused on the impact of the ban on small businessmen. The apparel industry, generally, and the children's sleepwear producers, in particular, are small manufacturers. Most of these operations have fewer than 100 employees. What these hearings documented was that the loss occassioned by the Tris ban fell on that segment of the industry least able to susain the loss.

The legislation being considered by this distinguished Subcommittee would offer these small businessmen an opportunity to recoup a portion of their losses. Specifically, S. 1503 would confer jurisdiction on the U.S. Court of Claims to determine the damages sustained, if any, by the producers, processors, or manufacturers of children's sleepwear. I do not feel that indemnification should be a generally available remedy in a situation where a hazardous product is removed from the marketplace. Very properly, in most of these cases, the public health and deterrence factors should be the overriding consideration. However, the Tris case is one with unique and unusual factors and deserves special attention by Congress.

First, the chemical Tris was placed in the children's sleepwear in 1971-72 in response to mandatory flammability standards issued by the Department of Commerce under the authority granted by the Flammable Fabrics Act, as amended. (15 U.S.C. 1191 et seq.) At the time that Tris was used by the apparel industry to comply with flame-retardant standards, it was not known that the chemical was a potential carcinogen. The carcinogenic properties of Tris did not become suspected until late 1975 when a study by the National Science Foundation determined it to be a powerful mutagen and, therefore, probably a powerful carcinogen. In 1976, the Environmental Defense Fund petitioned the CPSC to require labels on products containing Tris. Then in February, 1977 evidence from the National Cancer Institute was provided to the Commission confirming that Tris was indeed a potent carcinogen. My point here is that the apparel industry made a good-faith attempt to comply with Federal safety standards when they included the chemical Tris in children's garments to begin with.

This brings me to the scope of the ban. The April, 1977 ban extended solely to children's wearing apparel. It did not cover all Tris-treated garments or products. We received testimony before our Small Business Subcommittee that there is considerable use of Tris in other products. These products include draperies, camping equipment, toys, dolls, doll clothing, stuffed animals, wigs, and the interiors of some

automobiles. The Environmental Defense Fund testified that the Tris in children's sleepwear represented less than 50 percent of the Tris used in this country. If this is so, why was the CPSC order limited solely to children's sleepwear? Why was one industry singled out?

The CPSC ban also made a distinction between washed garments and unwashed garments. The thrust of the rationale was that three or more washings would remove the carcinogenic properties from the clothing. However, there is a serious scientific dispute as to whether or not washings remove the cancer-causing properties from the clothing. Suffice it to say, this distinction was a highly questionable one and it confused consumers and retailers alike.

Last, the ban imposed a repurchase order on the manufacturer of the garments containing the Tris. There are five industries involved in the apparel manufacturing process. These consist of: (1) The chemical company; (2) the fiber company; (3) the fabric manufacturer; (4) the garment manufacturer; and (5) the retailer. The CPSC ban was applied so that the entire financial loss would fall solely on the garment manufacturer—one level of this industry. Ironically, the Tris was already in the fabric before the garment manufacturer received it to cut and sew and ship it to the retailers. They didn't make the chemical. They didn't make the fabric. They didn't retail it. Yet, they were made totally responsible under the terms of the ban.

Over 70 percent of the manufacturers in the apparel industry are small businessmen. The percentage of profits are generally low in the apparel industry as a whole. Once it became evident that the burden of the ban was to fall solely on one level, serious problems developed. These small manufacturers, already drastically undercapitalized, saw their normal sources of credit dry up. The lack of business confidence seriously curtailed their ability to borrow money from banks or their suppliers. Product liability insurance also became increasingly difficult to obtain or maintain. While some Small Business Administration loans were made available, the equity required in terms of personal assets was a serious deterrent to applications. I know of at least three individual small manufacturers who were forced to close their businesses as a result of this ban.

Again, I want to emphasize that I view indemnification, in the context of hazardous products, as a drastic and unusual remedy. But I do strongly urge the members of this Subcommittee to give serious consideration to some form of a remedy for the small apparel manufacturers, who have been unfairly singled out in this situation. They acted in good faith to comply with anti-flammability standards. In a sense, they were caught in a crossfire between two competing regulatory aims. Serious consideration should be given to allowing these small manufacturers an opportunity to go to the court of Claims and recover their actual losses resulting from the Tris ban.

I appreciate this opportunity to share my views with the Subcommittee on this issue and welcome any questions you may have.

Mr. COHEN. Mr. Chairman, the Consumer Product Safety Commission ban on the Tris treated children's garments from the American marketplace was a decision I think that reflected a very valid public health concern on the part of both Government officials and consumer advocates, and with a very real possibility that Tris-treated goods cause cancer, I think these products were rightfully banned.

But while this was a legitimate regulatory action in a general sense, the Commission's overall conduct in the Tris affair can only be portrayed as clumsy and inept. The initial terms of the Tris ban were both illogical and unfair, in my opinion.

It was structured so that almost the entire brunt of the repurchase costs were borne by the garment manufacturers. Despite subsequent judicial and administrative attempts to redefine the repurchase responsibilties later on, the apparel manufacturers have still been saddled with an inordinate share of the responsibility and loss.

I will pass over the comment by the Washington Post in my prepared remarks, but they had an appropriate editorial entitled, "The Tris Mess."

I turn to page 2, and welcome my colleague from California to come up and join me if he would like.

Mr. DANIELSON. Surely. Thank you.

Mr. COHEN. As was pointed out by the witnesses who preceded me, we have a sort of Catch 22 situation whereby the Tris chemical was placed in the children's sleepwear in response to the mandatory requirements under the Department of Commerce standards that were issued pursuant to title 15 of the Code.

At that time, it was not known to contain carcinogenic properties. Since that time it was discovered, indeed, that it did. But this brings me to the question of the scope of the ban.

In April of 1977 the ban extended solely to children's wearing apparel. It did not cover all Tris-treated garments or products. We received testimony before our Small Business Subcommittee that there is considerable use of Tris in other products.

These products include draperies, camping equipment, toys, dolls, doll clothing, stuffed animals, wigs, and the interiors of some automobiles. The Environmental Defense Fund testified that the Tris in children's sleepwear represented less than 50 percent of the Tris used in this country. If this is so, we have to ask the question, why was the CPSC order limited solely to children's sleepwear? Why was one industry singled out?

The CPSC ban also made a distinction between washed garments and unwashed garments. The thrust of the rationale was that three or more washings would remove the cancer-causing properties from the clothing.

I cannot recall the exact figure now, but as I try to recollect, it seems to me that under the Flammable Fabrics Act there were some requirements that the Tris material survive something like 100 washings. I may be wrong in terms of that amount, but it's quite a significant amount that the Flammable Fabrics Act actually calls for, that they remain in the product and yet we have the rationale three or more washings would take out the carcinogenic properties.

So there was no real logic to their distinction.

Lastly, the ban imposed a repurchase order on the manufacturer of the garments containing the Tris. There are five industries involved in the apparel manufacturing process.

These consist of: (1) the chemical company; (2) the fiber company; (3) the fabric company; (4) the garment manufacturer; and (5) the retailer. The CPSC ban was applied so that the entire financial loss would fall solely on the garment manufacturer, one level of this industry.

Ironically, the Tris was already in the fabric before the garment manufacturer received it to cut and sew and ship it to the retailers. They didn't make the chemical. They didn't make the fabric. They didn't retail it. Yet, they were made totally responsible under the terms of the ban.

Over 70 percent of the manufactuers in the apparel industry are small businessmen. The percentage of profits are generally low in the apparel industry as a whole. Once it became evident that the burden of the ban was to fall solely on one level, serious problems developed. These small manufacturers, already drastically undercapitalized, saw their normal sources of credit dry up. The lack of

business confidence seriously curtailed their ability to borrow money from banks or their suppliers.

Product liability insurance also became increasingly difficult to obtain or maintain. While some Small Business Administration loans were made available, the equity required in terms of personal assets was a serious deterrent to applications. I know of at least three individual small manufacturers who were forced to close their businesses as a result of this ban.

As a matter of fact, the Wall Manufacturing Co. of New York now is in bankruptcy. The Blue Star Knitting Co., Milwaukee, Wis., is in bankruptcy. Spencer of California closed its doors and Green Bros. Manufacturing out of Texas went out of the sleepwear business, but still maintains other lines.

So, again, I would like to emphasize that I view indemnification, in the context of hazardous products, as a drastic and unusual remedy. But I do strongly urge the members of this subcommittee to give serious consideration to some form of a remedy for the small apparel manufacturers, who, in my opinion, have been unfairly singled out in this situation.

They acted in good faith to comply with antiflammability standards. In a sense, they were caught in a crossfire between two competing regulatory aims. Serious consideration should be given to allowing these small manufacturers an opportunity to go to the Court of Claims and recover their actual losses resulting from the Tris ban.

I appreciate this opportunity to share my views with the subcommittee on this issue and welcome any questions you may have.

Mr. DANIELSON. Thank you, Mr. Cohen.

I take it you do favor the remedy in the bill which would confer jurisdiction on the Court of Claims to hear these claims, and give appropriate relief?

Mr. COHEN. Yes, sir, I do.

Mr. DANIELSON. One question on substance here. Do you know when in the manufacturing process the Tris was added to the fabric?

Mr. COHEN. No; I don't know exactly at what stage of the manufacturing process the Tris was added.

Mr. DANIELSON. We are going to have industry people, and they can probably answer that.

You alluded to the fact that there is a place where the burden was put on the industry here, and I don't know if they added the Tris to the fiber before it is spun or woven, or where along the line.

Mr. COHEN. My assumption would be that the chemical was added by the fiber companies.

Mr. DANIELSON. We will check it out from industry witnesses. Thank you very much.

Mr. Waxman of California?

TESTIMONY OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. Thank you, Mr. Chairman and Members of the subcommittee.

I come before you to offer my testimony on this subcommittee and not due to any constituents who have contacted me who are

affected by this either, in the apparel industry or fabric manufacturers or chemical industry, but primarily because of my interest aroused as a Member of the Subcommittee on Oversight and Investigations of the Interstate and Foreign Commerce Committee, chaired by Congressman John Moss, the committee which held extensive hearings on the whole subject.

The Consumer Product Safety Commission ban on Tris-treated children's sleepwear has resulted, I think, in a serious injustice to the garment industry. It is highly appropriate that the Congress consider the need for Federal assistance.

I have not come here today to criticize the CPSC's decision to ban Tris. The decision was based on sound scientific evidence and a legitimate concern for the health of American children. In fact, if I were to criticize the CPSC, it would be for failing to adequately warn the public about the dangers of continued use of washed Tris-treated garments and for the delay in finally banning Tris-treated sleepwear from the market after they had received information that harmful results could come from those garments.

As the Chairman is aware, the CPSC's decision to ban Tris has become a regulatory nightmare. Legal challenges by the mills in South Carolina have resulted in the original April 1977 ban being overturned on procedural grounds. The district court ruling has forced the CPSC to seek individual court injunctions against the sale of Tris.

While this substitute strategy has effectively prevented the retail sale of the poisoned garments, it has not permitted a fair and equitable distribution of the financial loss along the sleepwear manufacturing chain. For the small sleepwear manufacturing industry, the South Carolina decision was greeted not with acclaim but with horror. Although the ban and repurchase requirements have been suspended, market pressures forced these small, often family run companies, to accept returns from the retail outlets.

The textile mills have adamantly refused to accept any responsibility for the economic loss resulting from the sleepwear ban. In fact, some textile representatives in testimony before the Senate have even questioned the scientific validity of the ban itself.

It is both absurd and unjust that the garment manufacturers should be forced to absorb the full cost of the ban. In many respects, the garment manufacturers are the least culpable parties in the sleepwear manufacturing chain. The textile mills, not the garment manufacturer, purchase Tris from the chemical company and applied it to the fabric. In many cases the garment manufacturer did not even know what Tris was. They merely bought flame retardant fabric from the mills and cut it into garments.

Further, the garment manufacturer is the industry segment least able to absorb the financial losses of the ban. For some companies, the losses from the Tris recall will exceed their total worth. That the garment industry should absorb the total losses of the Tris ban is a regulatory and economic injustice.

The legislation currently before the subcommittee, S. 1503 and H.R. 7158, would, in varying degrees, give the U.S. Court of Claims authority to indemnify for losses resulting from the Tris ban.

Generally, I oppose Federal indemnification for industry losses in the absence of Government wrongdoing. Economic loss resulting

from adverse Government decisions and economic gains resulting from favorable Government decisions are a risk of doing business.

However, the unusual circumstances of the Tris ban and the segmented structure of the industry make special relief, I think, appropriate in this case.

While I support the good intentions behind H.R. 7158 and S. 1503, both bills share common deficiencies. With the subcommittee's indulgence, I would like to briefly outline some of my concerns.

Since issuance of the Tris ban, I have been concerned about the final disposition of the banned garments. Recent press disclosures have documented the efforts of some garment manufacturers to actively search out export markets. I have appended to my testimony a series of articles describing the extent of Tris exports for the hearing record.

Just this past Saturday, an article in the Washington Post documented the export of Tris-treated garments into the Commonwealth of Puerto Rico. Under the Federal Hazardous Substances Act the citizens of Puerto Rico are accorded the same protections as citizens residing in the United States. The export of Tris sleepwear increases the likelihood that the garments will be reintroduced into U.S. domestic commerce.

Mr. DANIELSON. Would the gentleman yield for a moment?

I believe Mr. Moorhead, a member of the subcommittee, commented on the exports to Puerto Rico. I cannot understand how this could be done, Puerto Rico being a part of the United States. It is like exporting to Wisconsin. I don't get it.

Would you elaborate on that?

Mr. WAXMAN. I am not exactly sure how they did it either, Mr. Chairman. I think it's unconscionable even to export it outside of the United States, let alone Puerto Rico, and I am going to elaborate further on that in my testimony. But I believe they might have changed labels and sent it to Puerto Rico. I have even heard they might have sent it to Latin America and had it brought from Latin America to Puerto Rico.

Mr. DANIELSON. Looks to me like it might be a violation of the law, simply because exporting to Puerto Rico is simply impossible. You cannot export into some other part of the United States.

Mr. WAXMAN. I am not competent to testimony on the details.

Mr. DANIELSON. I am glad you brought it to our attention.

Go ahead.

Mr. WAXMAN. I did want it brought to the attention of the subcommittee, not just the ban, not just the fact that some of the garments are now in Puerto Rico, but the fact that many of these garments are exported around the world.

Mr. DANIELSON. We can also bring it to the attention of the Department of Justice if we have some facts to support it, and that is precisely what I will do.

Go ahead, sir.

Mr. WAXMAN. Fine.

Immediately following the CPSC's ban on the domestic sale of Tris-treated sleepwear, manufacturers initiated a vigorous search for individuals willing to market the goods in countries with less

stringent product safety laws. The news accounts describe the shocking success of these efforts.

I should point out that export sales of Tris enable garment manufacturers to recoup only a small percentage of their original investment. The return may be as little as 10 cents on the dollar. Should the pending indemnification legislation be enacted without amendment, I fully expect manufacturers to request compensation for losses incurred through Tris export sales.

In other words, they are going to come back and argue they receive the difference in the amount between that which they have received from the sale of the garments that were exported and that which they would receive by way of indemnification under any act of Congress.

The languuage of both S. 1503 and H.R. 7158 would appear to permit the U.S. Court of Claims to compensate for the difference between the export price and U.S. costs.

However, to compensate such business practices would be unconscionable. It would be a de facto endorsement of Tris sales to foreign countries.

The export of banned products previously introduced into domestic commerce is representative of the lowest form of business practice. Products hazardous to American children are similarly hazardous to foreign children.

Although there is some doubt as to the legality of Tris exports, the Federal Government is certainly under no obligation to subsidize such practices. I feel confident in asserting that the export of cancer-causing sleepwear is not in keeping with U.S. human rights objectives around the world.

I am sure the subcommittee will hear testimony which will present an explanation for Tris exports. Regardless of individual circumstances, health and safety concerns preclude any moral justification. I take exception to the judgment and character of any businessman who would engage in such foreign trade. The practice is morally reprehensible.

For these reasons, I oppose, in the strongest terms, Federal indemnification of any amount for any garment manufacturer who has exported Tris garments overseas. The test of "good faith" should be applied in assessing qualifications for compensation under the bill.

Any manufacturer who has engaged in Tris exports has not, in my judgment, acted in good faith. Before I could support a Federal indemnification bill, the legislation must clearly distinguish between those who in good faith withheld Tris garments from foreign sale, and those who resorted to exploitation in search of short-term financial gains. Any business which has exported Tris after the CPSC's April 1977 ban should forfeit any right to Federal compensation or public compassion.

I have prepared draft legislative language for both S. 1503 and H.R. 7158 which I will submit for the subcommittee's consideration.

Another concern of mine is the status of the banned garments once compensation by the Court of Claims is awarded. If Federal revenues are to be awarded for losses incurred by Tris sleepwear manufacturers, I believe such compensation should be conditional on the destruction of the garments.

In testimony before the House Small Business Committee last year, CPSC Chairman John Byington pointed out that the Environmental Protection Agency has landfill facilities available for disposal of the banned articles. While I am hesitant to endorse Chairman Byington's landfill suggestion or any specific method of disposal, I believe alternatives are available and should be utilized.

I should point out, despite CPSC's claim after three washings the garment would be safe for use, even after three washings it is still fire resistant, and I think that is an indication of the strength of the argument that many people have made that after three washings the chemical is still very much a part of the fabric and still very much a danger to the health of children.

Unless the garments are destroyed, there will always be the likelihood that they will be exported not illegally distributed in domestic commerce, not just illegally distributed, there are legal uses for these fabrics, as Congressman Cohen pointed out, which may well also end up doing harm to the health of the American people.

Both of these alternatives are undesirable. If the Federal Government agrees to provide relief for the sleepwear industry, it is not unreasonable to make garment destruction a qualification for compensation by the Court of Claims. At least, I certainly hope it will be a regulatory anomaly.

I will be pleased to answer any questions.

[The prepared statement of Hon. Henry A. Waxman follows:]

STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

SUMMARY

The Consumer Product Safety Commission's (CPSC) ban on "Tris" was thoroughly justified and based on sound scientific data.

Despite the merits of the CPSC's "Tris" ban, the Congress has a responsibility to consider the need to remedy the resulting economic injury.

Legal challenges to the "Tris" ban have forced the least culpable segment of the sleepwear industry to accept total financial liability. It is unjust that the garment manufacturers should bear the greatest economic burden.

Indemnification legislation must exclude compensation for manufacturers that have engaged in exports of "Tris" sleepwear.

Court of Claims compensation should be conditioned on the destruction of the sleepwear.

STATEMENT

Mr. Chairman, members of the subcommittee, I appreciate this opportunity to appear before you this morning. I want to commend the Chairman for scheduling these hearings. The Consumer Product Safety Commission's ban on "Tris" treated children's sleepwear has resulted in a serious injustice to the garment industry. It is highly appropriate that the Congress consider the need for federal assistance.

I have not come here today to criticize the CPSC's decision to ban "Tris". The decision was based on sound scientific evidence and a legitimate concern for the health of American children. In fact, if I were to criticize the CPSC, it would be for failing to adequately warn the public about the dangers of continued use of washed "Tris". The decision was based on sound scientific evidence and a legitimate concern for the health of American children. In fact, if I were to criticize the CPSC, it would be for failing to adequately warn the public about the dangers of continued use of washed "Tris" treated garments.

As the Chairman is aware, the CPSC's decision to ban "Tris" has become a regulatory nightmare. Legal challenges by the mills in South Carolina have resulted in the original April 1977 ban being overturned on procedural grounds. The District Court ruling has forced the CPSC to seek individual court injunctions against the sale of "Tris."

While this substitute strategy has effectively prevented the retail sale of the poisoned garments, it has not permitted a fair and equitable distribution of the financial loss along the sleepwear manufacturing chain. For the small sleepwear manufacturing industry, the South Carolina decision was greeted not with acclaim but with horror. Although the ban and repurchase requirements have been suspended, market pressures forced these small, often family run companies, to accept returns from the retail outlets.

The textile mills have adamantly refused to accept any responsibility for the economic loss resulting from the sleepwear ban. In fact, some textile representatives in testimony before the Senate have even questioned the scientific validity of the ban itself.

It is both absurd and unjust that the garment manufacturers should be forced to absorb the full cost of the ban. In many respects, the garment manufacturers are the least culpable parties in the sleepwear manufacturing chain. The textile mills, not the garment manufacturer, purchased "Tris" from the chemical company and applied it to the fabric. In many cases the garment manufacturer did not even know what "Tris" was. They merely bought flame retardant fabric from the mills and cut it into garments.

Further, the garment manufacturer is the industry segment least able to absorb the financial losses of the ban. For some companies, the losses from the "Tris" recall will exceed their total worth. That the garment industry should absorb the total losses of the "Tris" ban is a regulatory and economic injustice.

The legislation currently before the Subcommittee (S. 1503 and H.R. 7158) would, in varying degrees, give the U.S. Court of Claims authority to indemnify for losses resulting from the "Tris" ban.

Generally, I oppose federal indemnification for industry losses in the absence of government wrong doing. Economic loss resulting from adverse government decisions, and economic gains resulting from favorable government decisions are a risk of doing business.

However, the unusual circumstances of the "Tris" ban and the segmented structure of the industry make special relief appropriate in this case.

While I support the good intentions behind H.R. 7158 and S. 1503, both bills share common deficiencies. With the Subcommittee's indulgence I would like to briefly outline some of my concerns.

Need for export exclusion

Since issuance of the "Tris" ban, I have been concerned about the final disposition of the banned garments. Recent press disclosures have documented the efforts of some garment manufacturers to actively search out export markets. I have appended to my testimony a series of articles describing the extent of "Tris" exports for the hearing record.

Just this past Saturday, an article in The Washington Post documented the export of "Tris" treated garments into the Commonwealth of Puerto Rico. Under the Federal Hazardous Substances Act the citizens of Puerto Rico are accorded the same protections as citizens residing in the United States. The export of "Tris" sleepwear increases the likelihood that the garments will be reintroduced into U.S. domestic commerce.

Immediately following the CPSC's ban on the domestic sale of "Tris" treated sleepwear, manufacturers initiated a vigorous search for individuals willing to market the goods in countries with less stringent product safety laws. The news accounts describe the shocking success of these efforts.

I should point out that export sales of "Tris" enable garment manufacturers to recoup only a small percentage of their original investment. The return may be as little as 10 cents on the dollar. Should the pending indemnification legislation be enacted without amendment, I fully expect manufacturers to request compensation for losses incurred through "Tris" export sales. The language of both S. 1503 and H.R. 7158 would appear to permit the U.S. Court of Claims to compensate for the difference between the export price and U.S. costs.

However, to compensate such business practices would be unconscionable. It would be a de facto endorsement of "Tris" sales to foreign countries.

The export of banned products previously introduced into domestic commerce is representative of the lowest form of business practice. Products hazardous to American children are similarly hazardous to foreign children.

Although there is some doubt as to the legality of "Tris" exports, the federal government is certainly under no obligation to subsidize such practices. I feel confident in asserting that the export of cancer causing sleepwear is not in keeping with U.S. human rights objectives around the world.

I am sure the Subcommittee will hear testimony which will present an explanation for Tris exports. Regardless of individual circumstances, health and safety concerns preclude any moral justification. I take exception to the judgment and character of any businessman who would engage in such foreign trade. The practice is morally reprehensible.

For these reasons, I oppose in the strongest terms federal indemnification of any amount for any garment manufacturer who has exported "Tris" garments overseas. The test of "good faith" should be applied in assessing qualifications for compensation under the bill.

Any manufacturer who has engaged in "Tris" exports has not, in my judgment, acted in good faith. Before I could support a federal indemnification bill, the legislation must clearly distinguish between those who in "good faith" withheld "Tris" garments from foreign sale, and those who resorted to exploitation in search of short term financial gains. Any business which has exported "Tris" after the CPSC's April 1977 ban should forfeit any right to federal compensation or public compassion.

I have prepared draft legislative language for both S. 1503 and H.R. 7158 which I will submit for the Subcommittee's consideration.

Destruction of garments

Another concern of mine is the status of the banned garments once compensation by the Court of Claims is awarded. If federal revenues are to be awarded for losses incurred by "Tris" sleepwear manufacturers, I believe such compensation should be conditional on the destruction of the garments.

In testimony before the House Small Business Committee last year, CPSC Chairman John Byington pointed out that the Environmental Protection Agency has landfill facilities available for disposal of the banned articles. While I am hesitant to endorse Chairman Byington's landfill suggestion or any specific method of disposal, I believe alternatives are available and should be utilized.

Unless the garments are destroyed, there will always be the likelihood that they will be exported or illegally distributed in domestic commerce. Both of these alternatives are undesirable. If the federal government agrees to provide relief for the sleepwear industry, it is not unreasonable to make garment destruction a qualification for compensation by the Court of Claims.

Conclusion

Mr. Chairman, with the addition of these two caveats I think an indemnification bill can be drafted which will satisfy the legitimate concerns of industry. While we must be careful not to establish an unwarranted precedent supporting federal compensation of industry losses, I am convinced the "Tris" case is a regulatory anomaly.

[From the Washington Post, June 10, 1978]

CPSC Probe Finds Tris-Treated Wear Sold in Puerto Rico

(By Jane Baird)

San Juan—The Consumer Product Safety Commission has determined that at least one manufacturer shipped children's nightwear to Puerto Rico containing Tris, a chemical banned by the CPSC as a potential carinogenic.

Although several hundred of these garments may have been sold, the CPSC has made no effort so far to warn consumers.

The CPSC investigation only covered the four major department store chains. There is a possibility that Tris-treated nightwear also is being sold in the hundreds of smaller clothing stores scattered around the island, a local CPSC inspector, Edgardo San Miguel acknowledged.

Tris was once used as a flame-retardent on children's pajamas until it was banned in April 1977. As part of the United States, Puerto Rico is automatically included in a product ban.

Published allegations that Tris-treated sleepwear was being sold in Puerto Rico spurred the CPSC investigation in early May. Twelve samples of children's pajamas were collected and sent to the CPSC lab in Washington.

One garment, manufactured by Confee Pajamas of New Bedford, Mass., and sold by one branch of the New York Department Stores chain in San Juan, tested positive.

The store immediately pulled all unsold Confee products off the shelves and has shipped them back to the factory, buyer Rafaelita Navarro said.

No effort has been made to notify consumers, however, although test results were known in mid-May.

CPSC compliance officer Elizabeth Jones explained that only about one-third, or 600 to 700 garments, in the Confee shipments to Puerto Rico were Tris-treated. The factory cannot identify which are the Tris-treated styles until it receives the returned shipment, she said.

Furthermore, part of the Confee stock is supplied by Springs Mills, in South Carolina, which has obtained an injunction prohibiting the CPSC from enforcing the Tris ban against its fabrics. Some of the garments in the Puerto Rican shipments may have been supplied by Springs Mills.

After these questions are answered, the CPSC can then ask New York Department Stores to put up signs warning consumers.

"There are lots of problems in dealing with Tris-treated garments. So far we have gotten cooperation from the store and the factory, and we are hoping it continues," Jones said. "It is a sticky situation."

According to Navarro, New York Department Stores received four shipments from Confee over the past two years, each with about 1,200 garments. The Tris-treated garment was taken from a 1978 shipment.

About one-fourth of the first 1978 shipment was sold, she estimated, while the second shipment was still in the warehouse. The store also returned the remnants of its 1977 shipments to protect itself, she explained.

Interviewed by telephone at the Confee factory, company president Nat Kleger said only two styles in the 1978 shipment contained Tris. He will not know how many of these garments were sent in 1978 or whether the 1977 shipment contain Tris, until he receives the returns, he said.

Asked why the garments were sent to Puerto Rico, Kleger claimed it was because of "confusion."

"We always consider a shipment to Puerto Rico as an export, because you had to take it to the docks and put it on a boat," he explained, "not considering it was a territory."

"Most of the manufacturers shipping there were doing it because of a misunderstanding," he said, "until it came to light in a Fairchild's publication."

Asked if the CPSC will take punitive action against Confee, Jones said the decision will not be made for several months.

She claimed the Confee shipments were "unique." It would be next to impossible to visit the smaller stores with the CPSC's limited resources, she said.

"There is no real reason to believe Tris-treated products are being dumped in Puerto Rico," she said. "There is always the possibility that some small store in Puerto Rico or the United States still has the product, but, for the most part, retailers and manufacturers got the notification and managed to get it off the shelves."

The CPSC is now working on a bill to include foreign exports as part of a product ban.

Meanwhile, according to Kleger, companies can continue exports if they notify the federal government which in turn notifies the foreign government of the country receiving the shipment. For all practical purposes, these regulations are cutting off any exports, he explained.

SEARCH TO BEGIN FOR SLEEPWEAR

The Consumer Product Safety Commission announced yesterday that it would join forces with the Office of Consumer Affairs in Puerto Rico to make mass inspections of clothing stores on that island in search of children's sleepwear treated with Tris.

The action was announced after a morning meeting between officials of the two agencies in Washington following reports that hundreds of the garments treated with Tris, a flame retardant found to cause cancer in animals, had been shipped from an American manufacturer to an island department store.

[From the Daily News Record, Monday, May 1, 1978]

Some Tris Sleepwear Makers Scurrying to Beat Export Ban

(By Mark Hosenball)

New York (FNS)—Some American apparel men are rushing to close tris sleepwear export deals worth millions of dollars as U.S. government moves to ban overseas sales of the controversial sleepwear gain momentum in Washington.

Hundreds of thousands of dollars worth of children's sleepwear treated with tris, the alleged cancer-causing flame retardant, have already been exported by American manufacturers, an FNS investigation has established.

An FNS survey of around one-third of the 110 American manufacturers who made tris-treated children's sleepwear has turned up evidence that tris sleepwear originally worth at least $627,000 or over 100,000 garments has already gone overseas to such nations as Venezuela and the Carribbean islands of St. Martins and the Bahamas.

In Washington, a bill is expected to be introduced this week by Rep. Henry A. Waxman, (D. Cal.) giving federal regulatory agencies the power to ban exports of products considered by the government to be too dangerous for the U.S. market. Waxman's staff indicated that the bill is specifically intended to stop the overseas traffic in tris goods.

And at the Consumer Product Safety Commission, which made the initial decision last April to ban tris-treated children's sleepwear from domestic sale, two new commission members are pushing for quick CPSC action to ban tris sleepwear exports under the existing law.

Edith Barksdale Sloan, a new CPSC commissioner and a vehement opponent of tris sleepwear exports, has sent a memo to fellow commissioners demanding "distinct and timely consideration by the commission" of "the social, political, economic and ethical implications of exporting products already banned by the commission to primarily Third World or developing, non-white countries." Commissioner Sloan was joined in her request by Commissioner Susan King, another new commission appointee.

If they get the support of Commissioner R. David Pittle, the only CPSC Commissioner to support a ban on tris exports in a commission vote last October, commission officials say that the two new commissioners will be able to reverse the commissioner's October decision not to proceed against or investigate American manufacturers exporting tris sleepwear.

CPSC sources say, however, that Pittle would rather wait until commissioners are fully briefed by the staff on the tris sleepwear export question. The commission is scheduled to discuss at its May 11 meeting the whole question of whether it can ban exports of substances which it has already prohibited from domestic sale.

Meanwhile, many manufacturers caught with tris sleepwear inventories say they are negotiating export deals with brokers, whom they refused to name.

The brokers are offering between 10 per cent and 30 per cent of the original wholesale price, according to market sources. FNS attempts to reach several "brokers," who had advertised for tris-treated sleepwear, revealed those businesses had already moved on, or consisted only of a telephone answering service.

Lou Bates, president, of Bates Nitewear, Inc., says his company is urgently negotiating export deals. In Bates' case, he says he has "no qualms" about shipping inventory of tris garments, originally worth $2 million. He says his most likely market is "Europe."

Herb Gallinger, executive vice-president for Greensboro Manufacturing Company says his company has a stock of tris sleepwear originally valued at $1 million and that the company has been negotiating "for the past six months" to send the inventory overseas.

Don Nelson, a vice-president of Jay Vee Brand, says his company has already done some "sampling out" of potential overseas buyers of his company's tris-treated sleepwear stock, originally valued at $1 million. "We do intend to export it if we can. We'd be anxious if we could find people to move it on for us," Nelson said.

FNS found companies willing and trying to export tris-treated sleepwear with original values totaling at least $4.5 million.

Many of the 30-odd companies surveyed claimed they would not try to export their tris inventories.

On Seventh Avenue and along W. 34th St., where the manufacturers who made tris sleepwear have sales offices, jobbers are prowling the corridors offering to take tris inventories off cutters' hands and ship the garments out of the country. Indus-

try sources say one of the latest visitors to 112 W. 34th St., nerve center of the children's wear trade is a buyer from the Middle East, seeking cheap tris sleepwear consignments for Saudi Arabia.

Donald Butterman, vice-president of the New York-based Empire Shield Co. Inc., said his company had already unloaded its entire stock of tris-treated children's sleepwear, originally worth $50,000. "We sent it all out to a guy in California who we know. I think he exported it all. To Mexico, I think," Butterman said.

Tony Wollins, vice-president of August F. Neilson, Inc. which had to lay off workers when the domestic ban on tris was implemented, said his company had exported "about half" of a tris sleepwear inventory originally valued at $750,000. This is about 150,000 individual tris-treated garments. Wollins said he had exported through a commission agent in New York and that he believed the goods were destined for Mexico, South America and Puerto Rico (CPSC officials said that exports to Puerto Rico were illegal because it is U.S. territory).

Louis Pinhas, vice-president of Sullcraft, Inc. in New York said his company had exported about half of its tris sleepwear inventory, originally valued at $200,000. He said around 48,000 tris-treated garments had already been shipped and added that he was about to close another 24,000-garment export deal. He said he exported through jobbers, who he refused to name, and added that he didn't know where the garments were shipped to.

One brokerage firm which acknowledges handling tris export business is the Karl J. Marx Co. of 450 Seventh Ave. A company buyer said that his firm, a "commission house," had helped organize a deal involving the export of 12,000 tris-treated children's sleepwear garments to an unnamed wholesaler in Venezuela.

"We were working on other deals but people backed off because of the restrictions," the buyer said. He said the Venezuelan company had retail clients throughout the Caribbean and Latin America. He said all exporters had to sign a statement swearing that they were taking the tris goods out of the U.S., were completely aware of what was in them and some were not going to allow the goods back into the U.S.

The Consumer Products Safety Commission banned domestic sales of tris-treated children's sleepwear after hearing evidence from the National Cancer Institute that the chemical, also known as tris (2,3 dibromopropyl) Phospate, caused kidney cancer in rats and liver, kidney, lung and stomach tumers in mice.

The commission's scientists estimated that if tris-treated children's sleepwear were permitted to remain on the American market, it would cause kidney cancer in 300 of each million male children exposed to it and an additional 60 cancer cases per million female children exposed. Environmental groups put the cancer risks higher.

Various apparel industry law suits challenging the original CPSC ban are currently before the Federal courts.

[From the Daily News Record, Tuesday, May 2, 1978]

Tris Sleepwear Exports Found Far Above $5 Million

(By Mark Hosenball)

New York (FNS)—Sources close to the export market in tris-treated children's sleepwear estimate that the volume of the potentially cancer-causing goods shipped overseas is much higher than the $5 million worth known to be headed for foreign markets.

Some tris sleepwear manufacturers have also indicated concern that tris sleepwear may be filtering back onto the domestic market from Central or South American countries to which the garments were sent after the U.S. government banned their domestic sale.

An FNS survey of about one-third of the 110 American manufacturers who made tris-treated children's sleepwear disclosed that tris sleepwear originally worth at least $627,000 had already gone overseas, and established that manufacturers were seeking to ship at least another $4.5 million worth of the apparel abroad.

Meanwhile, FNS has discovered, the U.S. Consumer Products Safety Commission, which banned tris sleepwear sales domestically on the grounds of cancer risk, has done next to nothing to monitor the export market in the garments in the year since sales at home were halted. And the State Department has informed the U.S. Commerce Department that a ban on tris sleepwear exports is not "necessary" to fulfill American international obligations.

Estimates of the total amount of tris sleepwear in U.S. manufacturers' hands following the domestic sales ban and subsequent recall range from a government figure of $70 million worth of goods at original wholesale value to a figure twice that large offered to Congressional committee by apparel industry representatives. Government officials admit they have no idea where tris garment stocks are now located.

But some apparel sources reckon that half or even more of the tris sleepwear left in manufacturers' hands after the domestic ban has gone overseas already.

Said a buyer for Karl J. Marx & Co., a Seventh Avenue buying office that has closed at least one tris sleepwear export deal, "From what I understand, a lot (of manufacturers' tris sleepwear inventories) is already out of the country."

Said a salesman for Lucky Star Undergarments, Inc., which had a tris sleepwear inventory of less than $100,000, "People who were stuck with it took advantage of the CPSC and dumped it as quickly as they could get rid of it." (The CPSC decided last October that it did not have the authority to ban tris sleepwear exports, though moves are afoot in the commission to change that policy now.)

The Lucky Star salesman said his own company had probably "Unloaded" a minimal amount of its own tris sleepwear inventory onto the export market at prices of about 20 per cent of the original wholesale value. "I think we made a couple of private deals. Some went to Africa and maybe to South America," the salesman said.

In Washington, both Congressional and trade sources say pressure for a bill to indemnify apparel manufacturers with U.S. Treasury funds has recently slackened. The sources attributed the letup in lobbying to the fact that many tris garment inventories have already gone overseas.

"One of the things I feel is that the manufacturers don't have much of the product left. There is no longer much demand from yarn spinners and manufacturers for compensation," said a textile trade association lawyer, who requested anonymity.

But there are also signs that the tris export market is tightening up for some, either because of bad publicity or because of a glut of goods on the market. A salesman in the New York office of Kid Duds, whose estimated tris sleepwear inventory was originally valued at $1 million, said his company would be happy to export its stock but was encountering problems unloading the goods. The salesman said he had dealt with buyers in Hong Kong and Europe, "But they've all read the papers. As far as I'm concerned the various buying offices overseas won't touch the stuff with a 10-foot pole."

Lou Bates, president of a sleepwear manufacturing company with a $2 million inventory he would now like to export, said that in talking to export brokers about Tris-sleepwear, he had made it clear that he would not ship garments to any country contiguous to the United States. "I wouldn't ship to Mexico or Canada," he said, because there was always the possibility that the garments would "get back" into America.

Other industry sources suggested that there might already be a trickle of tris-treated sleepwear back into the U.S. from nearby export markets like Central or South America, but no source could furnish firm evidence of the reimportation of the banned garments.

Some manufacturers involved in exporting Tris sleepwear are only willing to discuss the export market in "off-the-record terms." A Seventh Avenue salesman for a South Carolina firm said that his firm was just starting to export now to South America and the Caribbean and that from the way brokers acted, "I'll almost venture to say that maybe 25 to 50 per cent of the goods are sold to retailers overseas before they're even exported." The salesman also said he wondered whether foreign consumers were informed of the nature of the goods.

Other manufacturers tend to soft-pedal their involvement in Tris-sleepwear exports. Still others deny exporting any Tris sleepwear stock.

At the Kleinerts Textile Group, management has done "a little export business" in tris-treated children's sleepwear, said a senor executive, who declined to be named. Asked how much tris sleepwear the firm had left, the executive said that in fact the company's entire tris sleepwear inventory had been exported. He described the quantity as "a few dozen" and said the export price was "a little better" than 10 cents on the dollar of original wholesale value. The official gave no indication of where the goods were shipped to.

The Kleinerts official said his firm had exported so little tris sleepwear because they got out of manufacturing the goods at an early stage. Over three years ago, company sources said, senior managers had learned of research by a University of California scientist linking tris to cancer. Asked whether this made company offi-

cials hesitate before exporting tris sleepwear, a senior executive said that all goods had been "washed" before export. (The CPSC has effectively said tris goods are safe once washed three times, but environmental groups insist the treated sleepwear is still dangerous after as many as 50 or 60 washings. Even washed tris sleepwear is still banned from domestic U.S. sale.)

At Denton Mills, a Mississippi sleepwear manufacturer, there are still "plenty" of tris treated garments in stock. And managing director Elliott J. Saunders said he would "love to" export the garments if the price were right. Saunders said his company had already exported around "50 dozen tris garments," which went to "one of our salesmen," who has "a small shop" somewhere overseas, probably in the Far East. Saunders said the 600 tris garments already exported were "virtually nothing" in terms of the company's total inventory.

But at Wilker Bros., a New York firm, company official Lou Offenberg said none of its "substantial" tris sleepwear inventory had been exported. Offenberg said he had some hesitancy about exporting tris-treated garments "from a moral point of view. Another Holocaust we don't need."

And at the William Carter Co., near Boston, whose tris garment inventory was worth $5 million at original wholesale prices last summer after the ban, a spokesman said the company was also holding on to its stock and no export deals were being negotiated.

Although the CPSC is now said to be close to moving against exporters of tris-treated children's sleepwear, FNS inquiries have established that the commission has done virtually nothing to keep abreast of the growing export trade in tris goods.

CPSC investigators said that about six tris sleepwear manufacturers had been contacted by the commission last summer about the export market. But, the investigators said, the commission was told that export prices were too low and American manufacturers intended to sit on their tris inventories until some government compensation formula were worked out.

Subsequently, the CPSC officials said, no further formal survey of the export market in tris sleepwear has been conducted by the commission to date. Officials put down the commission's lack of interest in the tris export market to the 3-1 commission decision last October that the CPSC had no authority to move against tris sleepwear exporters.

That CPSC did write letters to Commerce Secretary Juanita Kreps, the State Department, UN Ambassador Andrew Young and the U.S. Representative to the Organization for Economic Cooperation & Development in Paris. The letters asked for international health authorities to be informed of the CPSC ban on domestic tris sleepwear sales, and warned of the possible export of tris goods.

Secretary Kreps wrote back that tris sleepwear exports could only be controlled for reasons of "short supply, national security or foreign policy" and said the first two reasons were "clearly not applicable." As for foreign policy, Mrs. Kreps said the State Department had advised her that controls on tris-treated garments were not "Necessary to further significantly the foreign policy of the United States and to fulfill its international responsibilities."

Ambassador Young did not reply to the CPSC, but, on his and the State Department's behalf, a State Department official did contact the International Agency for Research on Cancer in Lyons, France. The agency is scheduled to hold a week-long meeting on tris in June, but a spokesman said last week, "We have no new data."

At the Pan American Health Organization in Washington, Dr. George Litvak, chief of noncommunicable diseases, said that health officials around Latin America had been informed by his agency about the CPSC's domestic tris sleepwear ban and the possibility of exports. But Litvak said the only country that had indicated concern about the possibility of tris garment imports was Chile. He said Chilean health ministry officials had written to him twice asking for full information about the U.S. tris sleepwear ban and the manufacturers who made garments treated with the allegedly carcinogenic flame retardant.

In Colombia, the leading newspaper, El Tiempo, warned its readers last month that tris-treated pajamas had been acquired by Colombians in Miami, Bogota and San Andres (a free port Colombian Island off Central America.)

But in Italy, mentioned by some sources as a possible European destination for U.S. tris castoffs, Luigi Santa Maria, chairman of Snia Viscosa, which produces flame-retardant materials, said he was not aware of any imports of tris-treated fabric or sleepwear.

[From the Washington Post, May 3, 1978]

TRIS-TREATED SLEEPWEAR IS EXPORTED

(By Larry Kramer)

Several manufacturers are exporting millions of dollars in children's sleepwear treated with the banned cancer-causing agent Tris in an effort to beat the expected extension of the domestic ban to overseas sales.

Meanwhile, The Washington Post has learned that some of the exported garments, which are being sold at distress prices, are returning to areas under U.S. jurisdiction. The Consumer Affairs Department of Puerto Rico confirmed late yesterday that one of the two largest department store chains on that island, New York Stores, is still selling the controversial sleepwear.

The garments being sold in Puerto Rico may be coming from Venezuela, one of the main receiving points of the recent sales from American manufacturers. It also is possible, however, that they are being directly dumped there by U.S. manufacturers.

The Consumer Product Safety Commission banned domestic sale of garments treated with Tris, a flame-retardant, a year ago after the Environmental Defense Fund filed a petition to the commission warning of the carcinogenic nature of the substance.

But last October, after considerable debate, the CPSC voted that it did not have jurisdiction to ban the export of the garments in question.

In recent weeks, however, a majority of the five-person commission has indicated plans to change that policy, and attempt to ban overseas sales as well.

And Congressman Henry Waxman (D-Calif.), said yesterday he plans to introduce legislation today that would give the CPSC a clear right to ban exports.

Lou Bates, president of Bates Nitewear, Inc., said he sold to exporters all of the $2.4 million worth of clothing that he was forced to buy back from domestic retailers under the original ban order.

"The last of it was shipped three weeks ago," he said in a telephone interview from his factory at Greensboro, N.C. Bates said he was paid "$5.50 a dozen for about 80,000 dozen garments, giving me about $400,000 for the $2.4 million worth of clothes."

He said his firm, which is family owned, was hit particularly hard by the ban because "all we sell is children's sleepwear."

Bates said he was "lucky to sell the stuff when I did," because after a news story last Suinday said the CPSC would likely vote for an export ban on May 11, "everybody began scurrying to sell the stuff. And if I still had them, I would be scurrying, too."

Bates said he made sure that all of his garments were shipped overseas. "We watched the containers be sealed, and we watched the boats sail." He said he would not allow any of the clothing to be sold to countries even bordering the United States.

Tom Meredith, comptroller of the Greensboro Manufacturing Company, said his firm also shipped about 80,000 dozen garments in recent weeks, but received only about $4.25 a dozen, "for lots that usually sell at $28-$30 a dozen."

Some of Greensboro's garments went to Venezuela, while others were sold to a local retailer who lost a court battle when he tried to sell them in the U.S., and is now trying to export them himself.

"We just decided to bite the bullet and try and sell the stuff, "Meridith said, "We say that they are trying to ban exports, so we had to do what we could."

Many manufacturers, including the two North Carolina firms, and hoping for some form of relief from Congress for their losses.

Their case is based on the fact that they were originally ordered to put the substance in clothing as a fire-prevention action. But many of the manufacturers are bitter about being caught in the middle, because the mills that produced the materials for the clothing didn't get caught with the losses. The manufacturers of the clothing were ordered to buy back the existing merchandise.

Although the relief legislation passed the Senate, it is still pending in the House, and it is still unclear what relief, if any, will be granted.

Dan Livingston, vice president of Bates, said that "conservatively," $5 million worth of Tris-treated sleepwear has been exported by all U.S. firms in recent weeks. He said many of the firms are hoping the government will still reimburse them for the difference between the distress sale prices and the value of the clothing.

But Rep. Waxman said it was "unconscionable that even without a law on the books American business would export items established to be cancer-causing. Many of these same businessmen will be coming before Congress asking for special compensation. Any businessman, engaged in selling abroad should forfeit his rights to such compensation."

Waxman further said he was disappointed that the "CPSC moved as slowly as it did," to go after Tris exports.

The two new CPSC members, Susan King and Edith Barksdale Sloan, expressed anger at both the overseas and Puerto Rican sales.

And a third commissioner, David Pittle, said "our troops are out now finding out where all of this clothing is going, and if it is being sold in domestic markets."

Sloan said she was "outraged," that sales were reported in Puerto Rico, where she said "such sales are clearly banned."

King agreed, saying that CPSC Legal advisors informed her such sales are illegal.

Mr. DANIELSON. Thank you very much, Mr. Waxman.

Mr. Harris?

Mr. HARRIS. Thank you, Mr. Chairman.

I would like to compliment my colleague on his testimony.

I understood it and so it must be pretty clear, Mr. Waxman. One point that I would like to investigate just for a moment here is sort of the theory of the case point. On what basis do you feel that the Federal Government should use tax funds to make whole the industry's loss in this regard?

Now, if I may, I mean to divorce this question from the previous question. There is no question they have experienced a loss, and that there is a segment of the industry here that experienced the loss without any apparent wrongdoing on that segment of industry is part.

But, on what theory do we base the notion that Federal tax money should be used to indemnify?

Mr. WAXMAN. I believe this subcommittee acts in considering legislation of this sort almost in place of a court of equity to decide if the merits are there to justify an extraordinary relief.

The use of the chemical Tris was initiated and brought about by Government order that children's sleepwear be made fire-retardant. That was the chemical most available to meet the standards that the Government set.

I felt in hearing the testimony on the actions of the Consumer Product Safety Commission that the Commission, while it also had responsibility for setting fire resistant standards, had concerns legislatively to look after the health and welfare by virtue of the safety of products that were purchased.

They did not concentrate, even after being informed of the potential, in looking at the garments to see whether there was another problem to public safety by virtue of this garment with this chemical, and it took them a long while before they finally responded not on their own initiative, but after actions brought by the Environmental Defense Fund, to realize that this was a carcinogen, could cause cancer, was absorbed through the skin of children tucked away in bed at night in this sleepwear, and that they then had the responsibility by law to ban it, so they initiated the requirement and then they also came to the conclusion that the ban was appropriate.

The industry, many of the members of the industry, fought the initial fire-resistant standard thinking it was inappropriate. Whether they were correct or not I think is still open to question

because there is still the possibility of making sleepwear that would be fire resistant, and I think that is worthwhile.

But it was Government action that caused the use of the chemical Tris and this is a nightmarish situation where I think everyone has been caught up, and I think it's unfair to say that the financial loss for this whole regulatory nightmare should descend only on the garment manufacturers.

Mr. DANIELSON. Do you feel then the Federal Government assumes responsibility here because it was the unreasonableness of the initial Government regulation and order that placed the industry in the position of using the chemical that was not safe?

Mr. WAXMAN. No. I don't believe it was the unreasonableness of the Government order to require fire-resistant standards because at the time that standard was initiated the danger of the chemical Tris was really not known.

I just think that it's not by virtue of the wrongdoing of the Government or any particular party in the whole chain that is involved in the manufacturing of the sleepwear that is responsible. But since Government was so actively involved in initiating the use of this chemical, I think we have a responsibility to not let one industry be wiped out financially because of that fact.

Mr. HARRIS. Thank you, Mr. Chairman.

Mr. DANIELSON. Mr. Waxman, as I understand the regulations requiring the nonflammability treatment of these fabrics, it did not specify that Tris must be used, it simply set a flammability standard, is that correct?

Mr. WAXMAN. That is my understanding.

Mr. DANIELSON. The use of Tris or some other treatment was at the option of the manufacturer of the product, and the requirement was that a flammability standard be reached.

Am I right at that point?

Mr. WAXMAN. That was also my understanding; yes.

Mr. DANIELSON. I guess the dilemma that people found themselves in was they had to reach a certain flammability standard, and they knew of no way to do it except through the use of Tris or one or two other chemicals having a similar effect.

The use of Tris was an option, but it was not much of an option. The only other option would be to go out of business, go out of the specific business of producing children's sleepwear, is that about right?

Mr. WAXMAN. I really don't know if I can say that for sure. There was testimony, as I recall, that some fabrics themselves are fire resistant that could have met the standard. But I think perhaps there were strong reasons, economic reasons, practical reasons, that brought the widespread use of Tris by the industry. You might want to inquire about that later of some of the witnesses.

Mr. DANIELSON. We will have other witnesses from the industry, and I do appreciate your alerting us to some of the other problems here.

I want to reassure you that I believe that this subcommittee will try to put into any bill which is reported safeguards to protect the Government from undue claims for damage. Real damages would have to be proven, with all mitigating factors considered in arriving at that real damage.

I am sure that is the attitude of the Members here anyway.

I thank you very much for your presentation, and are there any other questions?

You are excused with our thanks.

Mr. WAXMAN. Thank you.

Mr. DANIELSON. We will now call for testimony from Mr. James F. Merow, Chief, Court of Claims Section, Civil Division of the U.S. Department of Justice.

Mr. Merow, please come forward.

I see you have a rather detailed formal statement and, without objection, it will be received in the record, and you may feel free to proceed in whatever manner you feel most effective.

TESTIMONY OF JAMES F. MEROW, CHIEF, COURT OF CLAIMS SECTION, CIVIL DIVISION

Mr. MEROW. Thank you, Mr. Chairman and members of the subcommittee.

If it would be advisable, I can save time and maybe summarize the statement, if it will be acceptable.

Mr. DANIELSON. You are free to do that.

Your statement is in the record. In fact, I much prefer the ad lib approach. Usually it's more practical.

[The prepared statement of Mr. Merow follows:]

STATEMENT OF JAMES F. MEROW, CHIEF, COURT OF CLAIMS SECTION, CIVIL DIVISION

SUMMARY OF PRINCIPAL POINTS

As detailed in the following statement, the Department of Justice opposes enactment of the relief legislation proposed because the type of claim involved is one where the courts have consistently denied Government liability. Legislation admitting Government liability for Tris losses would be preferential treatment. Moreover, no such liability should be enacted, in any event, in the absence of any actionable level of "fault" or wrongdoing by the Government causing the loss.

Finally we point to several problems in the implementation of the proposed legislation were it to be enacted, and suggest amendments to preclude any reimbursement for losses incurred on material manufactured or placed in the marketplace (domestic or foreign) after information was available showing Tris-treated material to be hazardous, so that a prudent person would cease its use.

STATEMENT

Mr. Chairman and Members of the Committee, I am James F. Merow, Chief of the Court of Claims Section, Civil Division, Department of Justice.

I appear today pursuant to the invitation extended to the Department by Chairman Rodino to submit the views of the Department of Justice on H.R. 7158 and S. 1503. These bills would grant jurisdiction in the United States Court of claims to render judgments against the United States in favor of persons who sustained certain losses as a result of the actions taken by the Consumer Products Safety Commission (CPSC) on April 8, 1977, and thereafter, in issuing its interpretation that certain apparel, fabric, yarn or fiber containing Tris—a flame retarding chemical, are banned hazardous substances under Section 2(q)(1)(A) of the Federal Hazardous Substances Act.

The steps leading up to the Commission's action on April 8, 1977 are set forth in Senate Report 95-584, to accompany S. 1503 and I will only state them briefly here.

In response to a demonstrated need to end burn injuries to children, in 1971 the Secretary of Commerce first issued children's sleepwear apparel flammability standards under the Flammable Fabrics Act. This required that the sleepwear meet an objective flammability standard determined by a uniform test method. (16 F.C.R. 1615). Testimony presented during the Senate hearings on S. 1503 [Hearing before the Tris Hearing Panel of the Committee on the Judiciary, United States Senate, 95th Cong., 1st Sess., July 26, 1977] indicated that prior to the 1973 effective date of

the flammability standards the predominate fabric used in children's sleepwear was cotton. [Statement of Leo J. Feuer, President, William Carter Co., Hearings, pp. 89, 97].

However, cotton fabrics could not be produced which would meet the standards and still be acceptable to consumers—after treatment to produce flame retardant characteristics, cotton flannel was no longer aesthetically appealing. [Testimony of David T. Shirey and Fred Shippee, Hearings, pp. 49, 50, 57–58]. Some five or six synthetic fibers were available which could meet the standard of which only the polyester, acetate and triacetate required treatment with a chemical such as Tris. [Hearings, pp. 57–58, 87, 97].

However, sales of garments made with fabrics other than polyester did not prove successful so that, by reason of consumer acceptance, the industry switched predominately to polyester garments after 1973 [Hearings, pp. 57–58, 86–87, 97–98]. Thus, by 1976 Tris-treated fabrics were in extensive use in the industry [*Ibid.*].

In January of 1976 test data became available that showed TRIS caused certain mutations, and that the test used had been shown to be a 'highly reliable predictor' of carcinogenicity [42 Fed. Reg. 18850, April 8, 1977 (document number 3, Ames, B. to Dr. B. L. VanDuuren)]. At this point one of the largest of the children's sleepwear manufacturers, William Carter Co., discontinued further use of Tris. In the Senate Hearings, Mr. Leo P. Feuer, President, William Carter Co. stated, "Carter's stopped the use of Tris prior to any adverse information from the National Cancer Institute study. Early in 1976, after the newly developed so-called Ames screening test indicated that Tris was a mutagen, Carter's considered it prudent to discontinue future use of Tris." [Hearings, p. 99].

In March 1976, the Environmental Defense Fund petitioned the Consumer Product Safety Commission to require cautionary labeling for Tris-treated apparel. [42 Fed. Reg. 18850, April 8, 1977]. The CPSC conducted a search of existing literature, initiated a biological testing program and asked the National Cancer Institute to expedite studies underway. [*Ibid.*]. On February 4, 1977 the CPSC obtained the preliminary NCI test data. After analysis, the Environmental Defense Fund petitioned the CPSC to ban Tris-treated wearing apparel, and on April 8, 1977 the CPSC issued its interpretation that children's wearing apparel made from fabric containing Tris, and uncut fabric intended for sale to consumers for use in children's wearing apparel, are banned hazardous substances. This interpretation, in turn, required that unwashed garments be repurchased by retailers from consumers and from retailers by the manufacturers, etc.

To the extent that Tris-treated garments, fabric, yarn or fiber can no longer be sold, there are obvious losses to the industry. The pending legislation raises the question as to whether the taxpayers should bear any or all losses sustained by the industry, stemming from the April 8, 1977 action by the Consumer Product Safety Commission.

It is our position that the United States should not bear the losses involved. We are opposed to the enactment of this legislation for the same reasons which were stated in the Department's testimony before the Senate Hearing Panel on S. 1503. In Report 95–585, p. 5, the Senate Committee stated its view that our arguments "* * * can be more than adequately rebutted." I would like to restate our arguments here and, I hope, in the process demonstrate that the Committee's analysis has not rebutted them.

Our first point is the established state of the law that the Government is not liable for the economic impact of regulatory action of the form involved here. This principle has consistently served to defeat claims asserted in the courts against the United States. It is discussed in the case of *Eastport Steamship Corp.* v. *United States*, 178 Ct. Cl. 599, 608–11; 372 F. 2d 1002, 1009–1011 (1967). Report 95–585, p. 6 concedes this point, but responds that this only indicates the need for legislation. Our point, however, is that because the general precedent is established which denies relief, it would be preferential treatment to single out Tris claims for unique treatment. If liability is legislated for losses suffered by one category of persons relating to banned hazardous products, a precedent is established which would make it difficult to deny similar relief to all persons who have suffered losses, or who will suffer such losses relating to hazardous products, now and in the future.

The Senate Committee's ultimate conclusion is to premise liability in the Tris situation upon "* * * the double-edged aspect of Government regulation. That is the Department of Commerce required the industry to use a chemical like Tris in sleepwear and, when in good faith the industry did so, the Consumer Product Safety Commission banned Tris-containing sleepwear." [Report, pp. 8–9].

However, the facts, as developed in the Senate Hearings, show that the emphasis on the production of Tris-treated fabrics stemmed from consumer choice—not com-

merce Department mandate and the industry shift away from Tris-treated fabrics may well have occurred even absent the CPSC action of April 8, 1977 as is shown by the decision by the William Carter Co. to discontinue its use early in 1976, when test data became public showing that Tris was a mutagen. [Hearings, p. 99].

Undoubtedly, with adverse publicity concerning the safety of Tris-treated fabrics occurring in 1976, some market loss must be attributable to this. The Senate Report states that "public knowledge" of the studies concerning the safety of Tris-treated fabrics occurred "* * * only as a result of the Commission's ban." [Report, p. 7], but surely this ignores the fact that some portion of the industry apparently stopped using Tris in 1976 and in March of 1976 the Environmental Defense Fund commenced its public efforts to gain action by the Commission. As noted in our prior testimony before the Senate, because the proposed bills do limit the Government's liability to loss as a result of the Commission's April 8, 1977 actions, and its actions thereafter, it will be necessary, in the litigation the bills authorize, for claimants to prove that their losses stemmed from this action and not from the market reaction to publicity concerning the potential cancer problems involved. It will also be necessary for the Government to cover this issue in its defense to the claims. This will be a complex and difficult issue to address. Without addressing the issue, however, compensation would flow to persons who would have suffered losses even absent the actions of the Consumer Product Safety Commission, and to persons who continued to manufacture and sell Tris-treated materials after it was prudent not to do so.

Accordingly, our first point is that the law is establishd that the Government is not liable for this loss, that this places the economic burden on the industry, and that the general law is designed to do this to provide the incentive not to place hazardous products in the marketplace. If liability is legislated in this circumstance, a precedent is established for liability by the taxpayers each time new information is discovered which shows that a product utilized by industry to meet a Government regulatory standard is hazardous. For example, if the automobile manufacturers utilized products to meet fuel mileage or pollution requirements, is the Government to guarantee that their losses will be reimbursed if any such products are subsequently discovered or determined to be hazardous? Legislation for Tris claims would establish such a precedent.

In our testimony on S. 1503 before the Senate, I noted the similarity between the claims made here and those made in 1970–72 concerning the 1969 action of the Food and Drug Administration in delisting cyclamates from the so-called GRAS (Generally Recognized As Safe) list. A number of bills were introduced to compensate persons who claimed to have suffered losses as a result of using cyclamates in reliance upon their GRAS listing. The asserted basis for relief in the cyclamate situation was good faith reliance upon the GRAS listing so that losses stemming from its delisting, based upon the discovery that the substances are dangerous should be borne by the Government. I noted that enactment of this Tris legislation could be cited as a precedent to justify compensation in the cyclamate situation. In Report 95–584 the Senate Committee responds by citing the fact that in 1972 the Department of Justice testified in favor of relief in the cyclamate situation, asserting that the situation was extraordinary. [Report, p. 6].

However, the instant claims for losses in the similar Tris situation demonstrate that the position asserted by the Department in 1972 was incorrect. As more care is taken to examine products in response to Congressional mandates to protect the public from health and safety hazards, it is inevitable that the same issue of compensation will constantly arise. Our point in opposition to this legislation is that relief should not be given on such a piecemeal basis. If the general law is to be changed to place liability on the Government for the costs of banned hazardous products, it should be accomplished by general legislation applicable to all similar circumstances.

Moreover any such legislation would need careful guidelines to retain incentives for the development of safe and nonhazardous products and which would deny compensation to those who placed goods in the marketplace after they had, or should have had, knowledge as to the hazardous conditions. A further problem would be presented as to who would bear the cost of any liability which the manufacturer or producer may incur to consumers as a result of the hazardous nature of the products involved, and what effect any Government compensation should have on such liability. In short, this is a subject of much complexity and not one which should be resolved by establishing the precedents which legislating admission of liability in the cyclamates or Tris situations would engender.

I should note that one cyclamate claim is in litigation. Pursuant to Senate Resolution 225, 95th Cong., 1st Sess., Senate Bill S. 1894, to provide compensation to

California Canners and Growers has been referred to the Chief Commissioner of the Court of Claims for litigation pursuant to the Congressional Reference procedure provided in 28 U.S.C 1492, 2509. This procedure requires litigation to determine whether the claimant has a valid legal or equitable claim against the United States and, if so, the amount. The end result is a Report by the Chief Commissioner which is submitted to Congress for any legislative action deemed appropriate. The Department of Justice has filed its answer denying any liability and the case will now proceed through the litigation process. This procedure should be contrasted with that utilized in S. 1503 and H.R. 7158 where Congress admits liability and the Court's function is to determine the amount of the liability and to enter judgment.

Our second basis for opposition to the enactment of S. 1503 or H.R. 7158 is the fact that these bills place liability on the Government absent any area of fault which would be the basis of legal liability were the Government not involved. The Senate Committee in Report 95–584, p. 6 responds that "Thus, the preoccupation with fault seems to miss the point of S. 1503 altogether. Children's sleepwear manufacturers were done an injustice because of actions by the Federal Governmant, and the purpose of S. 1503 is to correct that injustice." The "injustice" cited by the Committee appears to be based mainly on the fact that the Commerce Department set very high children's sleepwear flammability standards which, given the consumer preference as to fabrics which followed, resulted in the extensive use of Tris-treated polyester fabric. [Report, p. 6]. We see no injustice in requiring high flammability standards for children's sleepwear.

If safe, flame retardant children's sleepwear could not be developed the question is raised whether the product should be marketed. Moreover, the record developed in the Senate Hearing on S. 1503 made it clear that the industry knew that there could be problems with chemical treatments—in fact, the industry representatives objected to the standards on this basis. To use the words of David T. Shirey, testifying in support of S. 1503 for the American Apparel Manufacturers Association, "The Federal Government said meet the standard. We raised the question about possibility of side effects, and the Government said 'go fly your kite,' in effect—and passed the standard anyhow. They gave us two years. We struggled like mad, and only had one or two—" [Senate Hearings, p. 54]. The testimony of Dan M. Byrd for the American Textile Manufacturers Institute, Inc. is to like effect. [Senate Hearings, p. 59]. Of course, to our knowledge, no information was available in 1971 that flame retardant chemicals such as Tris could potentially cause cancer, but the industry was aware that they were not tested and chose to proceed with their use. The alternative might well have been not to put a product in the market if the risk was considered too great—but the fact that there was a risk was known to the industry. The question raised is whether compensation by the Government would have been appropriate if the companies claimed, at that point, they could not meet the standard set by the Commerce Department and, in effect, lost their business in children's sleepwear.

The point, in our view, is academic because they did proceed, and given the information concerning Tris which emerged in 1976, it simply cannot be said that the interpretation by the Commission in April of 1977 that the products were banned hazardous substances constituted an injustice. The theory of S. 1503 and H.R. 7158 is not to compensate the industry for the dislocations which may well have occurred in the switch from cotton to Tris-treated polyester in the early 1970's. Were this the theory, relief would be granted to those companies who tried to market naturally flame retardant fabrics and failed or companies who went out of business entirely as was noted in the testimony of Donald Comer, Jr., American Textile Manufacturers Institute, Inc. [Senate Hearings, p. 87.]

The theory of S. 1503 and H.R. 7158 is to compensate companies for losses incurred when new information is developed to show that products used to meet federal standards are hazardous. To call either the original standards, designed to prevent burning children, or the ban, some years later, to prevent potential cancer in children, an "injustice" to industry is to open the Government to liability when no actionable "fault" has been shown. This should be contrasted with the situation in *Mizokami* v. *United States*, 188 Ct. Cl. 736 (1969) where there was "fault" found by the Food and Drug Administration in erroneously seizing and condemning 418 bushels of spinach as purportedly contaminated by a hazardous chemical. The spinach was not, in fact, contaminated by the chemical. In the analogous situation of "equitable" relief under the Congressional Reference procedure of 28 U.S.C. 1452, 2509, some level of fault must be shown to obtain a determination of liability by the Government. See *Burt* v. *United States*, 199 Ct. Cl. 897, 906–907 (1972).

In Public Law 94-284 which Congress recently passed as applicable to certain actions of the Consumer Product Safety Commission, liability was permitted for

covered actions if the appropriate level of fault could be shown. Senate Report No. 95-584, p. 7 notes that Public Law 94-284 would, perhaps, not cover the Tris situation, but the point we are making is that liability without fault, as proposed by S. 1503, H.R. 7158 is a serious departure from past precedents, which we oppose. If the claimants had been able to demonstrate that the Commission's action of April 8, 1977 and thereafter was erroneous on its merits (that, *e.g.*, goods not containing Tris were banned) then *Mizokami* would be a precedent—but that is not the situation now before Congress. We reassert our "fault" point and consider that, contrary to the statement in Report 95-584, it is very much in issue with respect to the matter of relief as provided in S. 1503 or H.R. 7158.

We also wish to note that enactment of this legislation will mandate complex and time-consuming litigation in the Court of Claims, and we question whether this is the most effective way to provide monetary relief if such relief is determined to be appropriate. In Senate Report 95-584, p. 7, the Committee construed our point on the use of complex adversary litigation to grant monetary relief as an assertion that neither the Court of Claims nor the Department of justice has sufficient resources to handle the suits to be filed if S. 1503 or H.R. 7158 were to be enacted.

Our point was not that the capability is lacking, but whether the method of adversay litigation should be used. We do not know how many suits will be filed—but there are at least 100 companies in the industry. [Senate Hearings, p. 100.] H.R. 7158 would provide relief to unlimited categories of persons, perhaps including consumers, and a very substantial number of claims could be expected. S. 1503 limits the type of claimant who could file suit and the type of loss to be recovered, and fewer claims would be filed under this language. However, if only 100 claims were filed, substantial time would be required to resolve them. Our experience would indicate that no less than 30 attorney-days of work would be needed to bring each such claim to conclusion. Pleadings must be prepared, discovery proceedings conducted, accounting schedules submitted, audited and responded to under the Court's unique pretrial rules keyed to such damage-type cases. Trials must be conducted when issues of fact arise. Briefs and findings of fact must be prepared for the Trial Judges and, on review by the Court, the issues must be briefed and argued before a three-judge panel in each case. Thus if one assumes only 100 claims and, very conservatively, 30 attorney-days for each proceeding from beginning to end, some 3,000 work-days are involved for our attorneys. At 240 workdays per year per attorney, this will consume work equivalent to the full-time efforts of 12 attorneys for one year.

This does not include support personnel, such as the accountants at the Federal Bureau of Investigation who perform the audits required by the Court's pretrial rules. We do not consider adversary litigation to be the most desirable method to provide compensation for loss related to banned hazardous substances if this compensation is to be legislated. Rather, by analogy to the general legislation applicable to compensation when the Agriculture Department destroys animals to prevent the spread of, disease, 21 U.S.C. 114a, 134a, the agency administering the program should be the one to provide any compensation mandated, with litigation reserved for controversies which might ensue. For example, in the program to eliminate Exotic Newcastle Disease in poultry in southern California in 1971-1972, some $56,000,000 was paid by the Agriculture Department to growers, but only one law suit has emerged to date—*Julius Goldman's Egg City* v. *United States*, Ct. Cl. No. 364-75.

Accordingly, in summary, we maintain our opposition to this legislation as, if enacted, it will establish a precedent which will be utilized to justify relief for the economic impact of regulatory action. For the taxpayers to assume this liability, not sanctioned under current law, may well run counter to the obvious deterrent aspect involved in placing such economic liability on the persons subject to regulation to insure that products sold to the public are safe. This is, in our view, a matter for general legislation after careful study.

We are attaching an appendix of suggestions to cover more recent developments should this legislation be enacted over our continuing opposition.

APPENDIX

The language of H.R. 7158 does not define the costs to be recovered, nor does it indicate how the compensation is to interact with the repurchase requirements of Section 15 of the Federal Hazardous Substances Act, 15 U.S.C. 1261, et seq. S. 1503, as it was enacted in the Senate, removes much of this problem, but we still note a situation which would cause controversy. The testimony introduced before the Senate Committee indicated that the fabric mills would not reimburse the garment manufacturers for the value of the fabric involved. [Hearings on S. 1503, p. 67].

However, should such refunds have been made, the damage computation mandated by S. 1503 does not expressly provide that they must be deducted in determining the "cost" of the fabric. Moreover, the language in the Report, p. 7, that the Court should take into consideration any such refunds "* * * a person receives or is entitled to receive * * *" raises the point in each case as to whether there is "entitlement" to a refund. If so, the question can be raised in another suit, by the person who should pay a "refund," whether he can include this liablility in his claim against the United States. If only the "liability" can be included, how can one be assured it will be paid over to the manufacturer when recovered from the Government? S. 1503 simply does not cover this as now drafted.

We also suggest that it be made clear that double payments for the same material are not sanctioned. For example, a processor of the fabric or yarn would initiate a claim for the same material that is being claimed by the manufacturer of the end item—clearly payments should not be made for the cloth to both the mill and the factory producing the garment.

Finally, there are two additional points which it is considered the Committee should address. First, there have been news reports recently (e.g., Wall Street Journal, May 8, 1978; Washington Post, May 6, 1978) that substantial amounts of tris-treated garments are being exported, and the Consumer Product Safety Commission has voted to extend its enforcement action to exports. Given the present knowledge of the hazardous status of these garments, exporting them should not be condoned, and should clearly not be rewarded. Accordingly, we recommend that if this legislation is to be enacted, that additional provisions be incorporated to require, as a condition for any compensation, that the claimant prove to the satisfaction of the Court of Claims that the material, for which the compensation is to be paid, has been destroyed, preferably in an environmentally safe manner, as sanctioned by the Environmental Protection Agency, or has been utilized (or will be utilized) in a product other than children's wearing apparel. This will also serve to prevent the possibility that after receiving compensation for its cost, a claimant could dispose of the garments or fabric by export or otherwise where it could cause the harm which has resulted in the interpretation by the Consumer Product Safety Commission that it is a banned hazardous substance.

Second, we suggest that the persons who would receive compensation were this bill to be enacted might well have a cause of action against those concerns who supplied them with a hazardous substance, such as Tris, or Tris-treated fabric. Accordingly, again as a condition for the paymant of any compensation, we recommend that language be incorporated into this bill mandating that any and all such claims be assigned to the Government by each claimant who obtains relief so that the Department of Justice can, if it is deemed appropriate, take action to recoup any compensation paid from those who might well be liable. There is a precedent in Court of Claims litigation to require a claimant to execute a document in connection with obtaining a monetary judgment. *Jensen* v. *United States*, 158 Ct. Cl. 333, 342 (1962).

We also oppose the imposition of liability without the presence of some Government fault. Finally, we suggest that if this bill is to be enacted it be modified to preclude relief for the cost of any Tris-treated material manufactured or exported (or otherwise placed on the market as children's wearing apparel) after knowledge was gained as to its hazardous nature or such knowledge should have been gained. Also, as a condition for compensation there should be required: (1) proof of destruction of any such material or of its conversion to material not interpreted to be banned hazardous substances; and (2) an assignment to the Government of all claims against suppliers of that Tris or Tris-treated material which relates to any compensation obtained under this Act by any claimant.

Mr. MEROW. The Department of Justice appears today and appreciates the opportunity to do so to state its objection to the legislation to grant indemnity in this Tris situation. And, basically, we have two major reasons for opposing the bill.

The first reason is the obvious reason, that there is no legal liability established under current precedent for this kind of relief for the impact of regulatory action. It is our concern that this bill would establish an entirely new precedent in this field.

In this respect, we have pointed out in our statement that we do not feel that this is a unique situation. In fact, it is a situation which we consider will occur with increasing frequency as the

Government agencies, complying with congressional mandates do examine, in the field of health and safety, many other products to determine whether they are hazardous and should be removed from commerce.

We feel also that this situation is very comparable to that of the cyclamates which occurred in the 1969 action of the Food and Drug Administration when they delisted cyclamates from the GRAS list, that is the list of the generally recognized as safe products.

The analogy is very close, because the claim made for compensation in cyclamates was that people put a large investment into cyclamates because the Government had put its imprimature on the use of the cyclamates and, therefore, in good faith they relied upon the Government's action in that regard.

When they were delisted after subsequent information found that they were hazardous, they felt it was only just that the Government provide compensation.

Now, I should add that in the Senate consideration of S. 1503, the Senate committee noted that the Department of Justice had testified in favor of relief for the cyclamate situation in 1972. And we did so at that point on the ground that it was our view that that was an extraordinary situation.

We think that the events since then, especially the Tris claims, show it was not an extraordinary situation, and we were simply incorrect in our support for the legislation at that point in time. This is a matter of general application, and we consider it will occur with increasing frequency we feel in the future.

It is our point that there is no precedent for this kind of relief, and that to grant it, if the Congress decides that it should be granted, is the kind of action which should be done only by means of general legislation which would be applicable in all circumstances.

One of the prior witnesses today pointed to the Pesticides Act where that is, in fact, the way it was done That is, in the original act it was considered, and for certain aspects in pesticides, people are on notice if action is taken by the Government, the agency involved will give indemnification, and the agency knows if it takes an action it will give indemnification.

That is not the situation, however, before the Congress with the Tris bill we are now considering.

The second point that we have, and which we emphasized in the prepared statement, is the completely unprecedented action of holding the Government liable without any demonstrated fault, and the prior witnesses have pointed out that nobody critizes—I cannot say nobody— the industry does criticize the stringency of the original flammable fabrics standards of the Commerce Department, but we do not see an injustice in protecting children from burn injuries and having stringent standards to do so.

We do not see an injustice in the Consumer Product Safety Commission's banning a product that has potential cancer causing properties. So that even putting the two together we don't see how two circumstances 6 years apart, neither one of which taken alone could be an injustice, but put together result in an injustice.

Frankly, the theory of the act, the theory of giving indemnity seems to be that if new information is developed which shows that

a product which was used to meet Federal regulatory standards is hazardous, the compensation should be given, and I am sure if the act were passed it will be cited in the future as a precedent for that principle.

If the auto industry, for instance, has to use products, develop products to meet fuel mileage requirements or pollution requirements,and if any of those products turn out to be hazardous I am sure we will be back with another claim for indemnity under those circumstances.

As a matter of fact, in the Wall Street Journal of yesterday I noticed that there were two headlines, one of which said that certain products to help people get over nervous conditions, which I guess would probably be applicable when you are testifying, may have some cancer-causing properties, potentially, and may be banned, and another headline said that certain chemicals that go into water supplies may have side effects or cancer-causing properties.

So, this is not a subject which we think will be limited to the Tris category, and we do not think the Tris category is unique.

The only other precedent which has surfaced in a special act of this nature to grant jurisdiction in the Court of Claims in recent years is the *Mizokami* case where the Food and Drug Administration condemned so many bushels of spinich on the grounds it was contaminated with a hazardous chemical, and it turned out it was not, in fact, contaminated with the hazardous chemical and Congress passed a private relief act which allowed the company to file suit in the Court of Claims and recover damages.

That is a precedent in case the Government had any wrongdoing involved in the incident to grant a special relief act. But again, that is not the situation which has occurred here. Nobody has pointed to any wrongdoing by the Government in this particular incident.

The other factor which has been continually mentioned by witnesses and was mentioned in the Senate hearings is the fact the industry opposed the flammable standards on the grounds that the chemical treatments which might well be required could potentially be hazardous, that they were not tested. We think that does not work in favor of compensation.

We think it shows that they knew at the time that there was a risk, and that they had to make a decision at that point as to whether to proceed with manufacturing and assume that risk, or whether they had to, in effect, go into another line of endeavor.

Instead they went ahead and continued to manufacture.

Really, it was only when later on it was determined that Tris, information surfaced that Tris had these potential problems of being a mutagent that industry began on its own to shift away from the use of Tris. So we also point out in our statement it is entirely possible that even without the action of the Consumer Product Safety Commission there would have been, in effect, a removing of Tris from the market, and that it is not at all clear that compensation, if provided in these acts, would not compensate the persons involved for losses which they would have incurred in any event.

That is if the market for Tris fabrics, if they became unsellable because of the information as to their hazardous nature, they would not be able to sell and would not be able to recover the money that this bill would provide.

It is noted that the prior witness seemed to indicate that the major impact is on the manufacturers, and that it was his view that was unfair. I should also point out, however, that the bills before the Congress give the mills an equal right to recover in this respect. They provide that mills as well as manufacturers would have the right to recover any losses which they incurred.

Finally, we have made several suggestions. Although we maintain our opposition to the bill on the grounds that no precedent properly exists, and the granting of liability without fault which we consider to be an entirely new and unwarranted precedent, we have made some suggestions in an appendix that, were the bill to be enacted over our continuing objections, that there are some problems with the language. One of the problems is the question of how this would interact with the refund, repurchase requirements of the Federal Hazardous Substances Act itself.

That involves the question that the S. 1503 points to. In considering the amount of money that would be paid you have to consider whether or not a person would be entitled to a refund. So there would have to be litigated in each case the question of entitlement to a refund, and then that gets into the question, if they recovered on the basis of entitlement, how would it be assured the refund would actually be made.

We also point out that the export problem, which has surfaced in the newspapers is one Congress should address in this regard, and we do not recommend compensation be given in any situation that has involved an export of the Tris-treated fabrics.

Mr. DANIELSON. Let me interrupt you there, if I may.

Mr. Waxman commented on that same point. Just for illustration, suppose a manufacturer exported one-half of his Tris-treated garments into foreign commerce, thereby at least not sustaining a loss on that portion. This is assuming he did not sustain a loss without regard to whether or not he made a profit. But he retains the other 50 percent here and can demonstrate a loss.

As I understood Mr. Waxman's testimony, he sought to invoke a punitive aspect and to deny recovery even on the 50 percent that produced a loss.

Would you comment on your position on that feature of the export?

Mr. MEROW. The bills, as they are now worded, would allow recovery for only actually demonstrated loss, so under these particular bills he would be compensated for the loss on the retained item and, of course, if he had a loss on the reported item, he would also be able to recover the difference between that, if he had no loss, he would not be involved at all in the computation at the present time.

Mr. DANIELSON. Is it the position of the Department of Justice that in the hypothetical situation which I posed if the claimant could demonstrate a loss on the portion which he retained, is it the Department's position that he should be denied recovery on that

loss as a consequence of his having indulged in export on the other 50 percent?

Mr. MEROW. I hope that point is academic, because we oppose compensation across the board.

Mr. DANIELSON. I am giving you a hypothetical case, sir, and I wish you would stay within the bounds of it.

Mr. MEROW. Answering the hypothetical, there is a precedent in the Court of Claims on congressional reference [*Eglin Manor, Inc.* v. *United States*, 150 Ct. Cl. 143 (1960)] legislation, I believe the *Eglin Manor* case in which the court did rule, since that relief is equitable you must come into court with clean hands in order to get the relief and I believe that would be a situation where we could appropriately invoke the clean hands doctrine to bar any relief.

Mr. DANIELSON. Normally in the Court of Claims it is not equity, it's contract.

Mr. MEROW. Yes.

Mr. DANIELSON. You do get into a situation here because your measure of damages would not be quantum valebat it would be simply dollars.

Mr. MEROW. Yes, that is correct.

Mr. DANIELSON. How do you get equity in that ?

Mr. MEROW. The only way I could see this bill is since this is a situation where there is no legal liability, in effect then our position would be Congress would be legislating gratuity.

Mr. DANIELSON. We would be a chancellor just opening the chest for a few dollars; is that the idea?

Mr. MEROW. Yes, and it would be, in effect, giving the Court of Claims jurisdiction to deal with a congressional reference type litigation similar to the way it was done in the period of time after the Supreme Court in the *Glidden* case [*Glidden* v. *Zdanok*, 370 U.S. 530 (1962)] ruled that the Court of Claims should not itself consider congressional reference cases, and the period of time between the decision and when they stopped doing that, and the period when the Congress amended the act [28 U.S.C. 1492, 2509] to have congressional reference cases go only to the trial division of the Court of Claims. Therefore, it would, in effect, in our view, be a congressional reference type of case if this bill did pass and the Court of Claims were given jurisdiction to grant relief.

Mr. DANIELSON. You do feel the clean hands doctrine, though, could apply in that situation?

Mr. MEROW. I suspect, Mr. Chairman, unless the Congress wiped out that possibility in the legislation, we would assert that as a defense.

Mr. DANIELSON. Thank you.

I appreciate your comments.

Mr. MEROW. I think the final points on the suggestion we had beyond the export problem is it may well be within this industry that certain of the members in the various levels may well have private rights of action against each other as a result of this Tris circumstance, and which they may not be exercising for whatever reasons.

It would be our sugestion also that if any relief were to be given, and again we maintain a continuing opposition to any relief, that a

condition of that relief be that the Government obtain an assignment of any right of action that any person receiving relief may have against suppliers or any other individuals in the industry, so that we could make a decision whether to exercise that right of action on behalf of the Government to recoup any amounts made.

Mr. DANIELSON. Do you have language in your appendix which would assist us on that?

Mr. MEROW. No, we do not.

Mr. DANIELSON. Would you mind sending us a letter or memorandum? It's a point that the subcommittee will want to consider.

Mr. MEROW. Yes; I will be glad to do so, but with the understanding we really do maintain an objection to the whole aspect of relief.

Mr. DANIELSON. Sir, you have made your point on that.

Mr. MEROW. Thank you, Mr. Chairman.

Mr. DANIELSON. I am just asking for a little help here, I am tired of trying to draft these at midnight.

Mr. MEROW. We will be happy to do that.

Mr. DANIELSON. I have no questions until after Mr. Harris is done.

Mr. HARRIS. Thank you, Mr. Chairman.

What is the liability of the manufacturers of Tris to the garment industry?

Mr. MEROW. That would be one aspect that we would want to explore. It would depend I suppose not only on principles of product liability law, but also some of the contractual provisions of which we are not aware at the present time.

Mr. HARRIS. We don't know the answer to that, but the potential for liability probably is there, is it not?

Mr. MEROW. I would suspect there would be a potential.

Mr. HARRIS. Thank you, Mr. Chairman.

Mr. DANIELSON. Are you done, Mr. Harris?

Mr. HARRIS. Yes, sir, I made a quick point, Mr. Chairman. I will cover it with you in a minute.

Mr. DANIELSON. Do we not have a little bit of a difference in cyclamates? I was here at the time of the cyclamate bill. In the Tris situation the Government did establish flammability standards which must be met for the interstate and foreign commerce of these garments.

In the cyclamate case there were no comparable standards, no sweetner standards set up. The Government could not care less whether the soft drinks or the fruit salad or whatever it may be tastes sweet. Public demand for products on the market was the only thing the manufacturer had to answer to.

They chose oftentimes cyclamates because it was accepted, the public liked it, and it got rid of that tinny taste you get from saccharin, so many manufacturers went from saccharin to cyclamates in order to achieve the public's desired standard of sweetness coupled with noncaloric food, but it was the option that was with the manufacturer.

He didn't have to do it, and he did not have to use cyclamates. He could have used saccharin or, if there is some other sweetner he could have used that too.

That fact that there was an optional use, in my opinion, is the reason why the bill did not become law.

Now, in the Tris situation, we do have flammability standards. The manufacturer had to meet those standards if he were to put into commerce these types of garments. He had his options on how to reach the flammability standards, but he had to reach it, where as cyclamate did not have to reach a sweetness standard.

Now, it looks to me like about the only option that remained to the manufacturer was to either use Tris or quit making these garments. Were there other chemicals that could have been used as flame retardants which were used so far as you know?

Mr. MEROW. I believe the testimony in the Senate did indicate there were other chemicals that could be used, and there were fabrics that were naturally flame resistant that could be used. But, many companies did develop and try to market fabrics that did not require the use of Tris. They were not acceptable to consumers, is my understanding.

Mr. HARRIS. In other words, the marketplace just did not go for them too well?

Mr. MEROW. That is correct. And one of the witnesses in the Senate hearing did testify that it is really unfortunate that the consumer acceptance did not go the other way, in hindsight, of course. But, again, the analogy we feel is very close because your additives, additions to food products do have to be cleared in regulatory action.

I mean, they can be banned if they are not safe, and so the people using cyclamates felt since it was listed on the GRAS list, as generally recognized as safe, as maintained by the Government, that that was, in effect, a governmental endorsement.

Mr. DANIELSON. We had quite a bit of the testimony on the point of the GRAS list. And the only conclusion I could come to was that the GRAS list just really is not much of anything. It is not an endorsement. In fact, if we quite using acronyms and just use the true name, "generally recognized as safe," it would be more accurate, because when they started off after the Delaney Act, long ago, to try to determine which ingredients might be carcinogenic, I don't know how many hundreds of thousands of ingredients there were that might go into food stuffs, so they could not test every one of them, they would not be done testing them yet, so they put together a list of what they thought were items generally recognized as safe and did not test them at all.

The things they tested were the new, the novel and questionable items. There is no way, they started off with salt and pepper and wheat flour. I guess those are generally recognized as safe, but it does not mean the Government ever tested them for their carcinogenicity. They never did, and cyclamates happened to be one thing placed on the GRAS list that had been used to some extent and nobody knew of it causing any harm, so on it went on the GRAS list.

Mr. MEROW. I think that is the problem with Tris. At the time it became acceptable and used in the industry there was no knowledge that it had cancer-causing properties. It is perfectly true, the industry shifted away when it found that it did. A t least the substantial portion of the industry apparently did. But this was not done; it was not used at the mandate of the Commerce Department

in the beginning, and it was shifted away, we feel not shifted away by the mandate solely of the Govenent at the end.

Mr. DANIELSON. Let me ask you a couple of questions, and I will move real fast.

Can you tell us whether the flammability standards have been either repealed, modified, or changed and do they still exist?

Mr. MEROW. To my knowledge, they still exist.

Mr. DANIELSON. How are they now being reached, if they are being reached?

Mr. MEROW. I would guess that they must be using fabrics not containing Tris, if they are meeting the requirements.

Mr. DANIELSON. I guess you are speculating as I am.

Mr. MEROW. I am speculating. I don't know at the present time.

Mr. DANIELSON. I understand that the Tris-treated garments most commonly used were polyesters of one kind or another. They may have gone back to the old standbys of cottons and blends of cotton and natural fabrics. I don't know, but you are not sure whether they have reached the standard?

Mr. MEROW. No; I am not.

Mr. DANIELSON. I gathered from your testimony that before the ban there was already a movement away from Tris; is that correct?

Mr. MEROW. Yes; in the Senate hearings the president of the William Carter Co. testified that before even the National Cancer Institute test, but when the original screening information came out in January 1976 it showed that Tris was a mutagent and that Carter, which is one of the largest companies, began then to shift away from the use of Tris.

That was in 1976, early in 1976, and that was our point, that it is not at all clear, since loss in these bills is related to action by the Consumer Product Safety Commission, it is not at all clear that all of the loss in the industry is due to actions of the Consumer Product Safety Commission in that the industry itself began to substantially shift away before this action.

Mr. DANIELSON. What were they shifting to; do you know?

Mr. MEROW. I am not aware, but I guess other fabrics that are naturally flame resistant or to cotton.

Mr. DANIELSON. I understand, sir, there are or were some other chemicals used for flame retardancy other than Tris.

Mr. MEROW. Yes; that is correct.

Mr. DANIELSON. And they have not been banned, to my understanding.

Mr. MEROW. To my knowledge.

Mr. KINDNESS. Not yet?

Mr. DANIELSON. I said have not been.

Mr. HARRIS. It is not quite perfect.

Mr. DANIELSON. Not quite.

Thank you very much, Mr. Kindness.

Mr. KINDNESS. Thank you, Mr. Chairman.

I beg your pardon for the interruption, but I could not help emphasizing.

Mr. DANIELSON. May I put my colleague at ease. All of these bells mean neither an atomic bomb is coming up nor an important vote. We are in recess because it's Flag Day.

Mr. Kindness?

Mr. KINDNESS. Thank you, again, Mr. Chairman.

Mr. Merow, it is my understanding that a U.S. district court judge in South Carolina ruled in the *Spring Mills* case that the Tris ban could not be enforced against Spring Mills. Is any other mill affected by that ruling, other than those located in that district?

Mr. MEROW. The exact status of the ban order is a matter of some dispute at the present time. The Division of the Department of Justice which handled that is the Consumer Unit in the Antitrust Division, and at the present time they are involved in that litigation in the fourth circuit where that has been appealed.

There is also litigation pending in New York City with a motion to transfer that to the same jurisdiction as the *Spring Mills* case, where the Government is trying to compel repurchase by the mills.

It is a suit against Burlington Mills and other mills in New York and they have moved to transfer that to South Carolina, I believe.

So, the issue of the actual status of the ban order is not one that is very clear at this time. The enforcement action is going forward on an individualized basis, and the interpretation that these are banned, hazardous products has not been overturned, so proceedings can be brought on an individual basis, against any company who would try to sell the item at the present time. And that is how it is operating at the present time.

Mr. KINDNESS. Judge Chapman in the South Carolina District Court, in effect, ruled that the Consumer Product Safety Commission did not follow the Administrative Procedure Act due process requirements. If the Fourth Circuit upholds Judge Chapman's determination there, is that likely to have any effect on the position of the Justice Department with respect to this legislation?

Mr. MEROW. No. I think it would not.

Our view would be that the only prior precedent that we think is close is Mizokami, the spinach case, and that would require a showing of actual wrongdoing on the merits by the Consumer Product Safety Commission. Some aspect of negligence or wrongdoing to establish——

Mr. KINDNESS. To establish legal liability?

Mr. MEROW. A basis for indemnity, and it would be our view a procedural defect would not come within that category.

Mr. KINDNESS. Is it your theory there is a tort in that case?

Mr. MEROW. In the *Mizokami* case? It is in the nature of a tort in that regard. It would be a negligent action.

Mr. KINDNESS. And in a case like this, is it the position of the Department of Justice that there is no conduct that approaches that measurement of fault or harm?

Mr. MEROW. Yes. We have noted that the witnesses continually do not criticize either the imposition of flammability standards to protect children or the ban again to protect children from cancer-causing properties, so we cannot see where the basis for indemnity really rests in the theory of the act.

Mr. KINDNESS. Because you are not out of pocket.

Mr. MEROW. I understand that. We perfectly well understand the loss situation and the problems caused, but we don't think it's unique in that regard.

Mr. KINDNESS. If there were to be such legislation as this, does the Department of Justice have a position as to what levels within the marketing structure of sleepwear should be allowed to participate in whatever the program is of indemnification?

For example, the Senate version now includes the mills and manufacturers of the clothing, but does not include the retail level. Would you care to comment on that point?

Mr. MEROW. I would suspect if the Senate bill were passed, which provides a year for further refunds to take place, that I would be very surprised to see no refunds taking place. I would suspect that whatever is on shelves would participate in the indemnity by the operation of the normal repurchase action of going back to the manufacturer.

Mr. KINDNESS. But it would require a provision in the legislation to do that, would it not, to in turn require the mills and the manufacturers to reimburse the retailers?

Mr. MEROW. They receive indemnity for doing it at the present time under the act. The Federal Hazardous Substances Act, in our view, requires they do it.

Mr. KINDNESS. That is if the ban is in effect.

Mr. MEROW. If the ban is in effect and, as I say, that is a matter of some dispute. But, if the money is there I would be surprised that it is not taken. In other words, I would be surprised that that would not occur.

Mr. KINDNESS. Would it be the position of the Department of Justice that if there is to be such indemnification legislation, then there ought to be a mechanism within it to provide for the reimbursement to all parties involved, whatever their level in the marketing structure might be on an equitable basis?

Mr. MEROW. I think our basic point is if it's going to be, it should be done by general legislation, and I suppose the general legislation would have to have that requirement built into it.

Mr. KINDNESS. I guess what I am really getting at is are you aware of any policy on the part of the Department of Justice that, if there is such legislation, want to limit it, no matter what the inequities may be? Does the Department want to limit it to as few parties as possible?

Mr. MEROW. No. We oppose indemnity because of the lack of liability to cause indemnity, but if you are going to give indemnity, it is our basic problem with the act that we don't think there is any way you can draw the line. There has to be fairness to everybody similarly situated and, in fact, that will open the door to anybody similarly situated. So I think what you are saying is part of our problem with the act as a whole.

Mr. KINDNESS. Very good.

I appreciate that. Without wanting to speak in derogation of the Department, sometimes it's desirable to get that type of clarification of its position. The Department's general policy is almost always to resist any potential liability on the part of the United States.

Thank you.

Mr. MEROW. Sure.

Mr. DANIELSON. Mr. Harris?

Mr. HARRIS. I have no further questions, thank you, Mr. Chairman.

Mr. DANIELSON. I have only one, and it's really not a question. Your comment on general law, I would like to have you bear in mind this committee or this subcommittee has as its primary responsibility claims against the United States.

With a general law, any person similarly situated could just go to court. Every year there are one, two or three of these difficult cases, and very few ever pass. They are situations where the economy, the transaction has proved to be very disastrous, and the logical thing to do when all other remedies are exhausted is to come to Uncle Sam and see if he won't be the insurer of the enterprise.

I don't believe we have passed one in my 8 years, but they come every year. There was the Newcastle disease, you may remember. And we had some hogs out in Arizona or New Mexico that got Mercury poisoning because they ate some grain that had been treated with an anti-fungus preparation and was then diverted from planting to hog food. They come up all of the time.

A general law would provide a general remedy in cases which in principle are quite unique, and I think it may be useful to maintain our high threshold for them to cross before they have access to the Courts of Claims. That is just my opinin, and I have been wrong many times.

I thank you very much, Mr. Merow. We are going to be looking forward to receiving your suggested language on the assignability of claims that may be settled, and I can assure you in advance that we will not misunderstand that as in any way adulterating your stand against the bill.

Mr. MEROW. Thank you, Mr. Chairman.

Mr. DANIELSON. Thank you very much. We appreciate your appearance.

Our next witness is Mr. Richard O. Simpson, of Richardson, Associates of Washington, D.C.

Won't you come forward.

Mr. Harris, will you take over for a few minutes?

We welcome you, Mr. Simpson. We have your statement before us here. If you would like to place it in the record and summarize it, you may.

TESTIMONY OF RICHARD O. SIMPSON, RICHARDSON ASSOCIATES, WASHINGTON, D.C.

Mr. SIMPSON. Mr. Chairman, with your indulgence, I purposely prepared a brief statement.

Mr. HARRIS. Fine. You may proceed.

Mr. SIMPSON. Thank you.

My name is Richard O. Simpson, and I am pleased to appear before you today to express my support for H.R. 7158 as well as support for the basic intent behind this legislation, which is to provide some equity in this situation.

I might also add, Mr. Chairman, that I appear today on my own behalf as a concerned citizen and I have no personal or financial stake in the outcome of this legislation. In fact, I guess it is a case

of a person being a part of a problem. I would now like to be a part of an equitable solution.

I might also point out I was amused when I read the witness list that the witnesses seemed to be categorized by subheading and at least my name falls under the Department of Justice. I would like to point out I am no longer with the Federal Government. I now work for a living but I am here in the interests of justice.

Mr. HARRIS. Do I understand that your performance in the Department of Justice did not come under the category of work?

Mr. SIMPSON. I wasn't in the Department of Justice but my performance has been discussed and probably will be discussed because I was probably the most senior person involved in the Flammable Fabrics Act from 1970 until 1976. My view of the Tris matter, the subject of the legislation before the subcommittee, is I believe unique. It is a view which comes from direct involvement at several vantage points.

In December 1969 when I joined the Department of Commerce as the Deputy Assistant Secretary for Product Standards, the Flammable Fabrics Act was one of the statutes for which I shared responsibility with the National Bureau of Standards (NBS). At the Department of Commerce we did in fact prepare and publish the initial children's sleepwear standard, which is the subject of the present controversy.

We prepared that standard in response to both our congressional mandate as well as demands on the part of consumer activities, who, having reviewed certain information on burn injuries and fatalities involving young children, pressed for speedy Government intervention to solve the problem and provide protection against burn hazards involving the very young.

I might also point out, Mr. Chairman, that the statute we were dealing with at that time, the Flammable Fabrics Act, gave us only one remedy to deal with burn injuries: that was to deal with the fabric itself, not to deal with, for instance, ignition sources, or other perhaps solutions which came along in 1973 with the passage of the Consumer Products Safety Act.

I might also point out that the Flammable Fabrics Act contemplated a statute which would force technology. We are now I believe engaged in a hindsight evaluation of what should have been done at some point in the past but the statute itself required the Commerce Department to anticipate future technology and to write performance standards that were technologically practicable.

In other words, they said they should go into effect sometime in the future and let's hope that technology catches up with it, and that was the stage of knowledge. In fact that sleepwear standard, we allowed 2 years before its effective date. We had very little knowledge about how to render garments both flame retardant and acceptable at the time.

Sleepwear manufacturers in those early days, as might be expected, raised several objections, including but not limited to the possibility of unknown toxic effects from untested fire retardant chemicals known to be effective when applied to certain materials. Although the possibility of toxic effects was raised, there was no historical use data or other available scientific evidence from which

to make any conclusive findings. I relied on the expertise of NBS to advise me on the scientific merits of these claims.

We at the Department of Commerce followed all required steps of due process—public hearings were held, the regulation was proposed for comment, our statutory advisory committee was consulted, public comments were solicited and considered, and a final standard was promulgated.

The Federal Government mandated a performance standard which required, according to the state of the art at that time, one of two remedies: the use of new inherently flame resistant materials (synthetic materials), or the chemical treatment of the then-existing sleepwear fabrics that were on the marketplace at the time, both or either of which would, it was determined, provide the desired degree of fire safety.

The word "safe" has very little real meaning in the regulatory process. Safety can be defined as a judgment of the acceptability of risks. To have absolute safety we would have to ban almost everything in the marketplace and truly try to have our citizens live in a padded playpen. No one, I'm sure, is in favor of this approach to safety decisionmaking. Therefore, we must recognize the necessity of making decisions with respect to both degrees of risk as well as to degrees of safety. Two different, but related, activities are called for.

For instance, measuring a risk can be an objective or probabilistic effort, while judging the acceptability of that risk (safety) is a matter of personal and social value judgments. It is what the political process is all about.

It is quite evident that our scale of social value judgments of what is an acceptable risk fluctuates as we blithely accept the value of smoking cigarettes while, at the same time, we propose to forbid the use of cyclamates or saccharin. One has been well-traced to lung cancer in humans while the other, according to my understanding of our present knowledge, only appears to affect test animals while the effect on humans is much more speculative.

I might also say that I believe that the effect of Tris when worn in a garment on humans is also somewhat speculative, although it is not my purpose here today to judge that issue..

In the original sleepwear standard deliberations, we had limited but definite knowledge of the burn hazard to children from flammable fabrics, and as Congressman Mann this morning correctly pointed out, we had practically zero knowledge regarding the effects of fire retardant chemicals on humans.

We did some studies. We did some studies on the allergic effects, but it really was not considered. In fact with the advent of the Toxic Substances Control Act, I think the congressional or the Nation's attention to these effects was finally realized in the passage of that statute just this past year. Nevertheless, we responded to our congressional mandate, which says do something now. We examined the evidence and published a standard.

I might state that to my knowledge I am not aware of one proven instance of noncompliance with the burn provisions of the standard from the time it was originally proposed by the Department of Commerce until the time I left the Product Safety Commission, and I doubt if they found a violation of it today, that is the burn

provision, the serious parts of the standards. And surely countless lives have in fact been saved and scores of injuries have been prevented. I cannot tell you how many because the data collection system which was supposed to indicate the magnitude of the problem at the time was a promise of the HEW, and at the time we wrote the original standard we had, I believe it was, 27 known cases of injuries, although a report from that same department estimated 150,000 to 250,000 injuries.

With the passage of the Consumer Product Safety Act, the responsibility for administration and enforcement of the Flammable Fabrics Act passed over to the Consumer Product Safety Commission in May of 1973. I was privileged to serve as the first Chairman of that agency from its inception, May 1973 to June 1976.

It was late in my term as Chairman—early 1976, I believe March—that the matter of the possible carcinogenic effect of Tris came to the fore, and the subject was opened up for further regulatory consideration.

It is my view that the questions raised concerning TRIS and the possible dangers it presents are similar in many ways to those involved in the present saccharin issue, the freon-ozone issue, many toxic substances, cases which the EPA will have to deal with, and many others in which the regulator must administer specific statutes in specified areas, making value judgments in scientific gray areas where one cannot identify the black hats or the white hats, the bad guys, or the good guys.

My personal involvement in the Tris issue stopped when I left CPSC and it is not my purpose today to second-guess the banning decision of the CPSC members on this issue. It is my purpose, however, to urge that there be opportunity for equity in this apparently unavoidable but highly inequitable situation.

The facts as I see them are these:

There were legitimate concerns on the part of Government officials and consumer advocates for measures to protect children from the horrors of burn injury or death. Under our concept of responsive government, those charged with this responsibility responded, followed the procedures prescribed by statute, and made a determination which impacted heavily on a large but frangmented industry. The industry immediately moved into compliance, and exhibited over a period of years a remarkable record in this regard.

In the spring of 1976, the Environmental Defense Fund raised, through the regulatory process, questions concerning allegedly serious detrimental health effects from Tris-treated garments. The children's sleepwear industry moved almost immediately and responsibly away from Tris as a chemical treatment for the garments, and the regulators moved to ban its use in the future. Up to that point, though regrettable, the matter is understandble.

What comes next, however, is not quite so understandable and, in my view, highly regrettable. Some several years after forcing chemical treatment on sleepwear manufacturers, the Federal Government then required that the manufacturers recall the garments they manufactured in compliance with that mandatory requirement and pay for millions of sleepwear garments which they were forced by Federal regulation to treat chemically. And there is no provision in existing Federal statutes for the affected industry to

recoup the losses it incurred by complying with the law, nor for the regulatory agencies involved to provide economic relief should they feel it justified.

Somehow, the entire episode lacks equity.

Governments and business and people, even regulators, are by nature imperfect. Because that is so, even the most logical, or the most desirable, or the most protective of actions may at times produce extremely adverse and unfair effects on those involved. It seems extremely unfair, and in fact almost silly, to penalize industries for complying with Federal mandates.

We want to motivate other industries to comply with the statutes like the apparel industry complied with the Flammable Fabrics Act. In those instances, such as the Tris case, where industries claim adverse economic effects which bear no relation to fault, I believe they should be permitted a hearing in a court of law and be provided an opportunity to recover damages.

I would urge, therefore, that the Congress and this committee consider H.R. 7158 favorably; and further, that in future deliberations in the area of regulatory reform, broader attention be given to this type of problem. To fail to do so I believe will further compound the inequities in this unfortunate situation, and I think it would be particularly unfortunate if the Congress does not act on this during this session of Congress.

Thank you, Mr. Chairman. I would be pleased to answer questions.

Mr. HARRIS. Thank you very much. I appreciate your testimony and your first-hand explanation of the procedure. It is very helpful to the committee.

May I inquire if you in fact appear just as a citizen pro bono or do you represent anybody?

Mr. SIMPSON. I represent no one associated even remotely with the textile industry.

Mr. HARRIS. There is nothing wrong with that. I just wanted it for the record.

Mr. SIMPSON. I just wanted to put it for the record because in today's world we are always asking what ax are you grinding and we are always questioning the credibility of people who seem to be doing something as citizens.

Mr. HARRIS. I did not mean to question your credibility, but this committee did consider the Lobbying Registration Act and maybe we ought to begin at home here.

I have two quick questions, if I may.

No. 1, in your view the regulatory agency did not order the use of Tris?

Mr. SIMPSON. No; the agency that wrote the original standard was the Commerce Department, and it was a performance standard as required by the statute, but as a very practical matter, I mean as a legal matter they did not order the use of Tris, but as a practical matter it is almost as if they did so.

Mr. HARRIS. That was the point. You used the phrase "forcing chemical treatment," which is contrary to some of the testimony that has been heard here and in the Senate hearings. Do you feel that the order did in effect order chemical treatment, and in effect the only chemical treatment practicable was Tris?

Mr. SIMPSON. Well, at the time that we wrote the statute, we certainly were forcing chemical treatment, and as a matter of fact, as a regulator, we did not know which chemical would probably survive in the marketplace. Consequently, that is why we allowed 2 years for the effective date of standard, from the time it was finalized, in the future.

Mr. HARRIS. That was my second question.

Do you feel like the order required implementation and compliance too quickly?

Mr. SIMPSON. I did not think so at the time. The statute required a normal 1 year under the Flammable Fabrics Act, that the regulations normally become effective 1 year later unless, in this case, the Secretary of Commerce judged that, for instance, that needed to be sooner, 6 months. We determined that in the Commerce Department because of technology that it had to be later, not sooner, and we put a 2-year period on it.

Mr. HARRIS. Do you feel in retrospect, in hindsight, that that was too short a period, that the Government was in fact involved in applying the 2-year standard, that it should have been a longer period?

Mr. SIMPSON. I don't know. It is awfully difficult for me to put myself back in time. I could say that at the time I was frustrated as a regulator with the state of the art. I was frustrated somewhat with the pressures to solve problems overnight.

The simple facts are, cloth burns. It did at the time, and it was not a startling revelation. If a child plays with matches and drops them on their garment, cloth burns. We knew that.

To solve the problem, we really had two choices. As a matter of fact, at the time, almost all cloth burned. The only material that was on the market at the time we finalized that standard which would comply with the standard was some treated cotton flannel, treated with a different chemical.

Now they also had some other undesirable effects. They were stiffer than normal. They had a problem that the chemical that was used was washed out. We had a requirement that the garment be fire retardant during its useful life, which we determined to be 50 washings. The original chemicals washed out.

It also was adversely affected by exposure to ultraviolet, such as hanging your wash on a line. We also had to require—it was adversely affected by the use of bleach, and so we had to require—the silly labels in the garment, which was also part of the original regulation, saying that here is a garment, you must meet it, but by the way don't use bleach; all of these things. That was the state of the art at the time.

This hindsight, perhaps we should have been engaged in a research project as opposed to a regulatory project.

Mr. HARRIS. I appreciate your comments. My questions are just a little bit more specific than that. I am trying to identify if in fact the Government acted improperly at the time with regard to the regulations. I just wondered in hindsight, if you feel like that it was inadvisable to have issued the regulations at that time?

No. 2, was too little time allowed for the implementation of those regulations?

Mr. SIMPSON. The only way I can answer, Mr. Danielson, is, in the entire history of the case—I am sorry, Mr. Harris.

Mr. HARRIS. One of my proudest moments. Go right ahead.

Mr. SIMPSON. I am sorry. I do not know whether I should say I am sorry or not.

I said I was not here to second-guess the Commission, but perhaps I might do that. In my opinion, the controversy entirely surrounds the recall, not the ban of Tris. It is the recall of garments that are in the marketplace. I don't believe the evidence then nor now supports that, so therefore I can't say an action taken by the Commerce Department was a bad action in light of history, because I think that the problem we are facing now should not have occurred.

I would not have voted for a recall.

Mr. HARRIS. The action of the Government then that you find to be inappropriate was not the issuance of the regulations or the time span which was given to implement the regulations, but the order by which all garments manufactured in that way had to be recalled, and therefore caused the industry to suffer a loss?

Mr. SIMPSON. That is right.

Mr. HARRIS. Mr. Kindness.

Mr. KINDNESS. Thank you.

The testimony of Congressman Cohen earlier indicated that there were varying applications of Tris to other cloth use, such as draperies, wigs, and the like, whereas the ban applied only to infant sleepwear. Would you have any comment on whether the ban should have been broader in its application, or whether there is a justifiable basis for zeroing-in on just this one industry?

Mr. SIMPSON. Of course, some of the instances that Congressman Cohen pointed out was its use, for instance, on automobile farics, and the Commission has no jurisdiction over automobile fabrics and chemicals used. So if your question is confined to those projects subject to the jurisdiction of the Consumer Products Safety Commission, with the caveat assuming that the people there really believe it is a serious enough problem, then I say the ban should have been larger, unless the circumstances of use affect the hazard.

For instance, this is not a product that is ingested, so it is not a food additive. It is a product that, if there is a problem, it must get into the body primarily through skin absorption from wearing the garment. If there are other products which use the chemical, for instance draperies, which used a chemical, which are not worn, I think it would be perfectly appropriate to not ban its use in draperies. There is no very remote possibility of it entering the body.

Mr. KINDNESS. But other clothing, wigs, for example?

Mr. SIMPSON. I would say if the Commission believed that the hazard was serious from wearing it, and the wearing was not confined to children but to adults too, then I would have banned it to be consistent in all wearing apparel. They certainly have that authority.

Mr. KINDNESS. Toys, dolls, things that children chew on?

Mr. SIMPSON. Well, you do not wear toys, and I think there is very little of it gets in through chewing. Some gets in through chewing, let's say through ingestion, on children's sleepwear, but I believe the principal way it gets into the body is through absorp-

tion. So toys, which have only infrequent remote contact, perhaps not. I don't know. I don't fault the Commission on that.

I do fault them on the legal implications of a standard under the Flammable Fabrics Act, the ban under the Hazardous Substances Act just boggles my mind.

Mr. KINDNESS. If there is to be legislation of this nature indemnifying those who incurred losses, do you care to comment on whether retailers ought to be included within the scope of the legislation?

Mr. SIMPSON. I believe that anybody who is the one in the distribution process who suffered the loss should have the opportunity for relief, for indemnification, yes.

Mr. KINDNESS. I have no further questions.

Thank you.

Mr. SIMPSON. Thank you.

Mr. HARRIS. Thank you, Mr. Kindness, for your questions.

Mr. Danielson.

Mr. DANIELSON. Following up on Mr. Harris, do you feel that the regulation may have been a little bit beyond the state of the art? Can we make noninflammable, can we make children's nightwear with a high nonflammability factor without indulging in something like Tris?

Mr. SIMPSON. At the time we published the regulation, it was in fact pushing the state of the art, and we knew it was pushing the state of the art, and we believed the Congress contemplated with the Flammable Fabrics Act that you push the state of the art, so we knew that. Whether or not we could go forward from here, I don't know. I don't know what chemicals today, for instance, that might be used tomorrow to impart a fire retardancy might also demonstrate in some test that it is carcinogenic.

I might point out that our state of knowledge on how to determine whether a small amount of a chemical, when exposed to man in fact is a problem to man, is deplorable. The Ames test is a test that in that test demonstrates that there is a chemical in that test that may be a mutagen. It is not definitive. The animal feeding tests, where we feed massive amounts to a test animal and sacrifice it and make some value judgments, it is not perfect. The Products Safety Commission, when I was there we asked the National Academy of Science to tell us how to do this; in other words, how in fact do you test some test animal according to a protocol, for exposure to a small amount of a chemical such as man might be exposed to, and then draw some conclusions that would stand up, that were valid. The academy took I think about 3 years to write a report that was delivered I think last year, July, just about a year ago, to the Products Safety Commission.

Their conclusion is, it is a very difficult problem, and one thing for sure, no one test is conclusive. You must do at least two tests, and you almost must tailor each test for what you are looking for. In other words, our state of the art testing is, from the point of view of an engineer, archaic.

Mr. DANIELSON. I just wonder sometimes in our zeal to have a perfect world if we do not sometimes pass laws, issue regulations, or both which mandate the doing of something that we just do not know how to do.

As you said in your statement, cloth is flammable.

Mr. SIMPSON. Yes, sir.

Mr. DANIELSON. And we are trying to do something here to reduce the flammability.

Mr. SIMPSON. I would not suggest that we not do that, Mr. Danielson. I would suggest that when we do it we not demand instant solutions, and we at least add to our knowledge base appropriately before we start solving the problems. In many cases I think research should precede problem-solving, and we did not do it in this case.

Mr. DANIELSON. What other chemicals or substances besides Tris, and I do not care for the chemical formula name, but are there some others?

Mr. SIMPSON. Yes, there are. I am not a chemist either, but the one that we were most familiar within the early days was the one that was being used in the children's sleepwear that as the treated flannel. It was not Tris. I do not know the chemical name of it.

Mr. DANIELSON. That is not the one you described earlier rendering cotton flannel stiff?

Mr. SIMPSON. Yes, it is, and that was the best that was known at the time. The English some years before, the English nightwear legislation maybe 10 years before in Great Britain mandated a requirement, and I am told that the garments were fire retardant all right, but you could stand them in a corner and they would be free standing, they were so stiff.

There is also a simple home remedy which the Department of Agriculture proposes. You can wash your garment in a combinate of borax, Boraxo or something like that. It is a simple treatment and it does in fact render them fire retardant, but it is so stiff that nobody would wear them.

Mr. DANIELSON. You stated that you would not have voted for the recall?

Mr. SIMPSON. Yes, I would not.

Mr. DANIELSON. What would you have voted for?

Mr. SIMPSON. Oh, I believe, as I understand the situation, there would have been no requirement for a vote at all. The industry was in fact moving away very rapidly from the use of Tris, so a ban on its future use would not have been necessary, so there would have been no vote there.

The only other regulatory action one may have taken was with respect to the garments in the marketplace. That was the recall. That was the one I would not have voted for.

I might say that there was some discussion about whether or not the petitioner—let me say the original petitioner petitioned not for a ban and not for a recall, but for a label which required something like "Wash before using," and it is true, as others have pointed that, that even though you wash the garment, it still is fire retardant, and they say therefore that is not a very effective remedy. But in fact I believe it was an effective remedy. To the extent that there was a problem, I believe it was an effective remedy.

The reason is because the chemical that is absorbed in the body is the chemical that is easily absorbed in the body, and that is the loose chemical that they are talking about washing out. The chemical that is left that is bonded as a part of the material is not going

to be absorbed. Otherwise, we had better concern ourselves about all sorts of things, sitting on plastic seat covers, and everything else.

Mr. DANIELSON. I am left with the understanding, and tell me if I am wrong, that your present suggestion for the problem would have been to simply ban a future use, and let the material that was in the marketplace proceed on through and be disposed of through normal channels.

Mr. SIMPSON. Yes, I think not to ban the future use, to the extent that the industry had already moved away from it it would have been a fruitless exercise, but to the extent that they had not or they had reason to believe they would not, then a future ban, yes; I do not believe any recall though.

Mr. DANIELSON. I think we are saying the same thing.

Mr. SIMPSON. Yes, I think we are.

Mr. DANIELSON. Right. The industry was moving away.

Can you tell us to what were they moving?

Mr. SIMPSON. To non-Tris.

Mr. DANIELSON. Are these others substances with which they treated the fabrics?

Mr. SIMPSON. You can treat either the fabric or the fiber.

Mr. DANIELSON. Or the fiber?

Mr. SIMPSON. There are some fibers that are reinherently fire retardant themselves, that you can weave garments out of that do not require treatment, for instance, but they are not as moisture absorbent and have other undesirable features; but yes, there were other alternatives.

Mr. DANIELSON. And the industry was moving in that direction?

Mr. SIMPSON. My understanding is, almost universally it either was moving or had moved in that direction at the time of the regulatory action.

Mr. DANIELSON. I infer from that that even though there is a ban in effect, children's sleepwear with a high-nonflammability factor is available on the market without Tris.

Mr. SIMPSON. Well, if it isn't available on the market, whatever they are wearing is in violation of the statute, and I think it is in fact on the market.

Mr. DANIELSON. You are saying the same thing I am?

Mr. SIMPSON. Yes, it is available on the market.

Mr. DANIELSON. Lastly, one of your phrases, I believe in response to Mr. Kindness, was that the problem to the extent there was a problem, and so and so?

Mr. SIMPSON. Yes.

Mr. DANIELSON. I infer from that that you are not satisfied that there truly was a serious carcinogenic problem involved in the use of Tris; is that correct?

Mr. SIMPSON. That is correct.

I am convinced that the animal testing, which is ingestion feeding, produced tumors, and I believe rats were the primary test animals, but you don't eat sleepwear; you wear it. So even if it caused cancer in test animals through ingestion it may not be relevant.

There were some tests which dealt with skin absorption, and one of the researchers when I was there did some work on rabbits, and

he did in fact find traces of Tris in the urine sample of the rabbit, demonstrating that it had been absorbed, when he laid a treated garment on the back of a shaved rabbit. The researcher also did some tests on his daughter, and his tests demonstrated that the Tris was not absorbed through the skin of his daughter, so it was at least at best speculative evidence.

Also, it is true that the risk, to the extent that the risk was there, we certianly minimized and probably dealt away with through washing, so I don't believe the evidence suggested a recall.

Mr. DANIELSON. I appreciate your answer.

We had comparable tests on the cyclamate ban a few years ago. It does bring up, of course, the question that used to be asked by the gentleman with whom I learned how to practice law, and that is, who wants to test an electric chair? There is some validity in that .

I do thank you for your help. It is very valuable to us.

I yield back.

Mr. SIMPSON. Thank you.

Mr. HARRIS. Thank you, Mr. Danielson.

Thank you again for your testimony.

Mr. SIMPSON. Thank you.

Mr. DANIELSON. The next testimony will be from a panel of witnesses from the American Apparel Manufacturers Association. The listed witnesses are Mr. David Shirey, president of Shirey Co., Greenville, Tex., Mr. Leo J. Feuer, of the William Carter Co. of Needham Heights, Mass., and Mr. Dan M. Byrd, Jr., Springs Mills, Inc., Fort Mills, S.C.

Are the gentlemen all here, or your representatives?

Mr. BYRD. Yes, except I am appearing for the American Textile Manufacturers Institute.

Mr. DANIELSON. Why don't you gentlemen be seated and I will indicate for the record who you all are.

What is your name, sir?

Mr. FEUER. Leo J. Feuer, president of the William Carter Co.

Mr. HEROLD. My name is Arthur Herold, counsel.

Mr. SHIREY. David Shirey, president of the Shirey Co., Greenville, Tex., speaking for the American Apparel Manufacturing Association.

Mr. DANIELSON. You are with Mr. Herold?

Mr. SHIREY. Yes.

Mr. DANIELSON. He is with you?

Mr. SHIREY. We are together.

Mr. DANIELSON. And you are Dan Byrd, Jr.?

Mr. BYRD. Yes.

Mr. DANIELSON. We know who you are now, and the reporter does.

I would like to have you proceed in whichever manner you find will be most effective. I am going to give you one caveat. It is about 5 minutes beyond the hour of 12. I do not mind staying, and Mr. Harris is deeply interested, too, but bear in mind that things happen along the way.

TESTIMONY OF DAVID T. SHIREY, PRESIDENT, SHIREY CO., GREENVILLE, TEX., ACCOMPANIED BY ARTHUR HEROLD; LEO J. FEUER, PRESIDENT, THE WILLIAM CARTER CO., NEEDHAM HEIGHTS, MASS.; AND DAN M. BYRD, JR., AMERICAN TEXTILE MANUFACTURERS INSTITUTE

Mr. SHIREY. I am speaking for the American Apparel Manufacturing Association. My company is a member of the association, and I serve on the board of directors. This association does represent 71 of the 100 children's sleepwear manufacturers here in this country today, and it is on their behalf that I speak to you today and ask that you support the provisions for indemnification contained in Senate bill 1503. By and large those of us who manufacture children's sleepwear, and that is the involvement of my company, we are small manufacturers. Many of us employ less than 100 employees. We cumulatively only produce an annual volume of approximately $500 million a year.

Despite the small size of this segment of industry, we do provide employment for about 27,000 people. These are taxpaying, productive jobs, and we are obviously very interested in protecting them.

The unusual thing, maybe, about our industry is the fact that many of our productive facilities are in very small towns. One of my own, employing only 50 people, is the largest employer in the town, and if plants like these are required to close because of the effects of this Government action, the effect on the entire town would be enormous.

The word Tris, as you have already indicated, Mr. Danielson, in your opening remarks, is now almost a household word here in the United States. The effects of the publicity given because of the CPSC ban have been enormous.

The other story possibly that has not been told with such rapidity is the effect that we as children's sleepwear producers have suffered as a result of the ban.

The background you are familiar with. The Flammable Fabrics Act was first passed in 1953 and amended in 1967. Under the provisions of this act, flammable fabrics themselves were removed from the marketplace. This was a fabric test where the mills producing the fabric were requested to pass certain performance standards.

Acting under the provisions of the 1967 amendment, the Department of Commerce, as Mr. Simpson has already acknowledged in prior testimony, amended the standards with the children's sleepwear standard, which was first promulgated in 1971, and again in 1974, the second time by the Consumer Product Safety Commission, which by this time had the responsibility for enforcement under the Flammable Fabrics Act.

The new standards were extremely stringent. They involved both requirements for the textile mills which had had performance standards under the originam Flammable Fabrics Act, and also performance standards for those of us who were actually producing the garments.

In most cases these new performance standards required the addition of chemicals to the fabric in order for us to be able to produce a product which would meet these standards.

At the time the initial hearings were taking place before both the Department of Commerce and the Consumer Product Safety Commission, both the apparel industry and, as has already been indicated, the textile industry, questioned the conditions that may relate to the toxicological and dermatological side effects of these chemicals which were mandated in order to meet the standards.

These concerns were ignored and the standards were passed, and we were required to meet them.

It was soon found that fabrics containing the chemical Tris were meeting highest levels of consumer acceptance, both in terms of price and wear characteristics. Mr. Simpson described the boardy characteristics of some of the other fabrics which did not use Tris, but met the standard.

You know, much as you gentlemen are elected to your offices, we are elected, too, by our consumers. Their vote for us is in the purchase dollar, and they are king for us as your electorate is for you, and as they vote for a product, we are in a very sensitive market that is highly competitive, and we gravitate rapidly toward fabrics that they have expressed a desire to purchase.

We found that they were expressing a desire for Tris-treated fabric, a fabric that met their demands, and at the same time met the requirements of the children's sleepwear flammability standards.

By early 1976, almost half of the fabric meeting this standard in children's sleepwear contained Tris. In March of 1976, almost 5 years after the standard was passed, the Environmental Defense Fund did petition the Consumer Product Safety Commission asking for this label to wash three times before wearing any garment containing Tris. This was the first time most of us who produced children's sleepwear had ever heard of the word "Tris." We did not put it on the garments. We did not add it to them. The Tris was added at the point where the yarn was made or the fabric was made. We had nothing to do with it, and never heard the word "Tris" before this 1976 petition.

Mr. DANIELSON. Before what petition?

Mr. SHIREY. 1976 in March was the first time I ever heard the word "Tris."

Mr. DANIELSON. In other words, what you bought was yarn?

Mr. SHIREY. I bought fabric that met the standard in compliance and with the requirements of the children's sleepwear standards.

Mr. DANIELSON. Let me see if we can move you back another tier.

Mr. SHIREY. All right, sir.

Mr. DANIELSON. Did the fabric manufacturer, if you know, add the Tris, or did it go in at an earlier stage?

Mr. SHIREY. It depended on the particular end-use fabric. In some cases it was added to yarn. In some other fabrics it was added to the fabric after it had been produced in gray goods form as a part of the finished process.

Mr. DANIELSON. After it had left the loom?

Mr. SHIREY. Yes, sir, or knitting machine.

Mr. DANIELSON. Thank you. I had been wondering about that. Do you know whether it was ever added at the fiber stage?

Mr. SHIREY. I am not familiar with that. Not that I know of.

Mr. BYRD. It was.

Mr. SHIREY. So fiber, yarn, or fabric.

Mr. DANIELSON. It may not make that much difference, but I have been puzzled over it.

Mr. SHIREY. At any rate, I had never heard of it before March 1976.

Mr. DANIELSON. I see heads bobbing up and down and wagging sideways. Everybody is confused. Go ahead, sir.

Mr. SHIREY. All right.

At any rate, because of the sensitivity which our industry has to the marketplace and the adverse publicity which Tris-treated products received, we began immediately trying to move away from fabrics for our sleepwear products that contained Tris. As a matter of fact, I did not add a single item to my line after the March 1976 petition was first filed that contained Tris, required me to buy Tris. Our problem was the fact that it takes about a 12-month cycle from the addition of a style until that style appears on a retailer's shelf, so although we wanted to move away immediately, many of us were not able to completely move away immediately because of this lead-time requirement in order to get from the point we purchase fabric, design, merchandise, sell, get it produced, and on the retailer's shelf.

They filed a petition in 1977. At the time they demanded that the Consumer Product Safety Commission prohibit any future sale of Tris. CPSC did not act quickly enough to suit them, and so they sued the CPSC in Federal courts. I may also make the comment that at the time this suit was filed, as Mr. Simpson has already inferred, the Tris chemical was no longer even being sold for end use that would end up with fabric in children's sleepwear, and all of us to my knowledge had already taken substantial steps in moving away from it.

Now, this second petition occurred in March of 1977, I believe, and at that time I do not know of anyone producing children's sleepwear who would have been producing Tris-treated garments for their fall 1977 line, so in concert with Mr. Simpson's comment, I think he is indicating properly that the market was already well on its way to emptying itself out of these Tris-treated products.

At any rate, at the end of March of 1977, a group of us from AAMA, the American Apparel Manufacturers Association, did meet with the commission to discuss possible economic adverse effects or varying effects if they issued the ban under the Federal Hazardous Substances Act, which was the vehicle that the EDF was suggesting the CPSC take, and there were a couple of paragraphs under that provision. One of them only related to children's wear, as I understand, and that was the only one that they could have issued where a recall would have been involved.

There were also other paragraphs which would not have been a recall. The option for a ban to have been instituted would have been under CPSA, which would not have been a ban for the recall to take place without due process.

We were amazed to find out that if they issued the ban under FHSA that we or somebody would have been faced with an automatic recall. We were not familiar with Tris. We did not know of

its health hazards. We simply met with them to tell them if you go this way you are going to decimate very likely an industry.

On April 7, 1977, this is exactly what the Consumer Product Safety Commission did, instituting the ban with recall provisions under FHSA. On April 13 we were further shocked to find out that they had defined us as children's sleepwear makers, cutters and sewers, as the only "manufacturer" as defined under the Federal Hazardous Substances Act, and that meant that we alone, this small segment of the industry, would be totally responsible for the financial involvement in this recall.

On May 3, after AAMA sued on behalf of its members, the Consumer Product, they did take steps to broaden the effect of the repurchase provisions. However, that same month Springs Mills, a textile manufacturer, sued the commission in district court for the district of South Carolina and the result ultimately of this was the entire ban was overturned.

Despite the decision in the South Carolina court case, the Commission did come back and issue a statement in December of 1977 stating that they believed Tris to be hazardous, and as has already been indicated, they were going to take the step of individually pursuing anybody in Federal court who did not abide by this opinion that it was in fact hazardous.

The net result of all this is still the fact that we, as children's sleepwear manufacturers, have borne almost the total cost of the recall, and what has been the result on our industry? As has already been indicated, there have been bankruptcies. Some of the folks have closed their doors. Others have simply quit business. Others have gone out on their own and are doing contract work. More importantly, the majority of the rest of us are continuing to exist because of confidence placed in us by our creditors, who think that this government is going to right a wrong that was done, and so they have expressed credit confidence in our ability ultimately to get this money back. Were it not for that confidence in the idea that Congress will take care of this problem, there are probably many others who would be out of business today.

Some of us have gotten SBA loans, but again, a loan you have to pay back, and when you take as much money out of a business as has been taken out as a result of the loss in this recall, you almost stunt the growth, this watering progress, and inhibit the future jobs that that business could provide in years to come.

At this point, a word or two maybe should be said about the export question. It has been raised already here this morning. On July 20, 1977, CPSC held public hearings on the export question, and then on October 20 of that same year, last year, the Commission voted that it had no authority to prohibit the export of these products or substances which it considered to be hazardous.

Relying on that action of the Commission some sleepwear manufacturers found a partial remedy to the financial box that the Government had placed them in, by being able to export Tris garments to other countries. In most instances manufacturers only recovered somewhere between 10 and 30 percent of their loss.

In May of this year, however, the Commission did reverse its position on exports, and voted that it did in fact have the authority

to prohibit export of goods that had already been introduced into domestic commerce.

Despite that change of position by the Commission, we understand, as Congressman Waxman has indicated this morning, that there has been criticism of firms which exported Tris garments between October 1977 and May 1978, and we would like to make it very clear that we believe these firms, as well as those which did not export, are equally entitled to indemnification.

The Government put these people in a box. They had to find any way they could to stay in business, and they acted in what the Government at that time had said was a legal manner.

One of the best indications of need for this legislation is further expressed in a letter of April 27 to Chairman Rodino from the five commissioners of the CPSC. The commissioners have stated that they support the legislation, that our industry has been economically harmed through no fault of their own. Furthermore, we agree with the commissioners that the Judiciary Committee should consider the very circumstances surrounding the use of Tris. We are prepared to discuss that today.

I would like to add one other statement. I would urge you today as a children's sleepwear producer that if at all possible you move with Senate 1503, because that would be the most expeditious way for us to get out of the financial squeeze this unfortunate action by Government and its bureaucratic arms have placed us in.

Thank you.

[The prepared statement of Mr. Shirey follows:]

STATEMENT OF DAVID T. SHIREY, AMERICAN APPAREL MANUFACTURERS ASSOCIATION

AAMA, the apparel industry's national trade association, supports S. 1503 as passed by the Senate and requests favorable consideration by this Committee.

The consequences of the CPSC ban actions has resulted in losses among approximately 100 small manufacturers of children's sleepwear.

These manufacturers neither put Tris on the fabrics nor specified its use. In spite of prompt, responsible efforts to use other materials, heavy losses were sustained.

Court challenges have prevented a sharing of the burden of loss by other industry sectors.

Consequences of these losses has already had a serious, adverse effect on some industry members.

Mr. Chairman, and Members of the Subcommittee, my name is David T. Shirey, and I am President of the Shirey Company, Inc. Appearing with me is Mr. Arthur Herold, counsel for the American Apparel Manufacturers Association (AAMA). My company is a member, and I personally am a Director of AAMA, the trade asociation which has represented and served as the official spokesman for the entire apparel manufacturing industry for the past forty years and represents 71 of the estimated 100 manufacturers of children's sleepwear. It is on behalf of AAMA that I speak to you today on the plight of those apparel manufacturers engaged in the business of making and selling children's sleepwear, and it is on behalf of AAMA that I urge you to vote favorably on the legislation to indemnify our industry for their losses as passed by the Senate in S. 1503.

By and large, the 100 or so children's sleepwear producers are small manufaaturers. Most of us are undercapitalized, and must depend on the credit of our suppliers and on our ability to obtain loans on accounts receivable, to stay in business. Many producers have less than 100 employees, and our total annual output amounts to only $500-million. Despite the relatively small size of this segment of the industry, it provides jobs for some 27,000 people. These are taxpaying, productive jobs which contribute to the economy. In many instances, children's sleepwear plants are located in very small communities where, despite their small size, they might still be a town's largest employer. One of my own plants employing

only 50 people exactly fits this description. If this plant were forced to close its doors, the economic impact on this small community would be enormous.

The word Tris is, I am sure, familiar to all of you. The efforts of the Consumer Product Safety Commission to ban products containing Tris have received widespread publicity, and there are probably few Americans today that have not heard of Tris at one time or another. The story that has not been told, however, is the devastating effect of the Commission's actions on our very small industry. In order for me to tell this story, though, it will be necessary to give you a little background.

In 1953, Congress passed the Flammable Fabrics Act. This law was designed to remove very combustible fabrics from the marketplace, and it required textile manufacturers to meet a fabric flammability standard. In 1967, Congress amended the Flammable Fabrics Act to permit the Secretary of Commerce to issue additional flammability standards, and in July 1971 the Secretary promulgated the first children's sleepwear standard. In 1974, a second children's sleepwear standard was promulgated, this time by the CPSC, which had assumed responsibility for administering the Flammable Fabrics Act. These new standards required both textile and apparel manufacturers to meet an extremely stringent performance level, and, in most instances, the standards necessitated the addition of flame retardant chemicals to the fabrics used in children's sleepwear. It should be added that the apparel industry, along with other segments of the textile industry, raised questions about the possible adverse dermatological and toxicological effects of these chemicals. The government, however, ignored our concerns.

It was soon found that certain fabrics containing Tris (2,3-Dibromoprophyl) phosphate were the most desired by the consumer in terms of cost and wear characteristics and could most readily meet the stringent standards requirements. We are in a highly sensitive, competitive industry and as soon as a fabric begins to meet with consumer acceptance, our industry will respond. For this reason, there was a rapid increase in the use of Tris-treated fabrics in children's sleepwear, and by early 1976, we estimate that at least half of all children's sleepwear fabrics contained this chemical.

In March, 1976, a private organization, the Environmental Defense Fund (EDF), filed a petition with the CPSC seeking a rule that garments containing Tris fabric be labelled with instructions to the consumer to wash the garments three times before wearing. EDF claimed that Tris had been found to be a mutagen under the newly developed Ames Test and that it might possibly be a human carcinogen. For most manufacturers of children's sleepwear, this March, 1976, petition was the first time that we had ever heard of Tris, or of the suspicion that it might be a possible health hazard. Nevertheless, because of the adverse public reaction generated by the EDF petition, we immediately took steps to replace the Tris-treated fabric in our garments. In many instances, however, such replacement was impossible, since our industry generally operates on a 12-month cycle from the time that fabric is purchased until the time that the garments might appear in the marketplace.

EDF filed a second petition with the Consumer Product Safety Commission on February 7, 1977 demanding that all garments already produced from fabric containing Tris be removed from sale. When CPSC did not act quickly enough on this second petition, EDF filed a lawsuit against the Commission in Federal district court. It should be added that by this time, the chemical Tris was no longer being sold for apparel uses. On March 31, 1977, representatives of AAMA met with the Commission to discuss the economic impact of a Tris ban on the children's sleepwear industry.

EDF had been pressuring the Commission to issue a ban under the Federal Hazardous Substances Act, and we found to our dismay that this Act contained an automatic repurchase requirement. We stated very candidly that we know nothing about the chemical properties of Tris, and that we had no way of evaluating possible health hazards. Our only purpose was to try to impress upon the Commission what would happen to our industry if the Commission issued a ban under the Federal Hazardous Substances Act.

On April 7, 1977, the CPSC issued its ban and our industry was faced with the prospect of having to repurchase all unwashed garments containing Tris, whether in the hands of consumers or on the retailer's shelves. On April 13, 1977 the Commission compounded this blow by stating that the children's sleepwear manufacturer was the only manufacturer who was required to repurchase Tris garments, and that our small industry should bear the entire brunt of repurchase. The unfairness of this interpretation was driven home to us by the fact that we had neither put Tris in the fabric in the first place nor specified its use.

On May 3, 1977, after AAMA had filed suit on behalf of its membership in the District Court for the District of Columbia, Judge Hart found that the CPSC had

acted arbitrarily and capricously, and ordered the Commission to redefine the banned product so that the repurchase responsibility under the Federal Hazardous Substances Act would be broadened. The Commission then averted the need to comply with Judge Hart's order by reissuing its ban so as to include the Tris manufacturer, the fiber, yarn and textile manufacturers, as well as the other segments of the children's sleepwear industry. Later that same month, however, Springs Mills, a textile manufacturer, sued the CPSC in the District Court for the District of South Carolina with the result that the entire ban was overturned.

Despite the decision of the South Carolina Court in the Springs Mills case, the Commission issued a "Statement of Policy" in December of 1977 stating that while they could not ban Tris by regulation, they still believed that Tris was hazardous and that they would therefore seek to block the sale of Tris garments in Federal District Courts throughout the country. The result, of course, has been a de facto ban, and we, the apparel manufacturers, are again the losers. We have reimbursed our retail customers who have sent back the Tris garments which they purchased from us, and yet we have no effective recourse against our suppliers. As a result, the entire loss falls on us.

And what has the impact been on our industry? A few of us have suffered bankruptcy, while others have simply locked their doors. Some have shifted completely and now manufacture other apparel products, while others continue to exist because of the confidence of their creditors, or through the temporary expedient of SBA loans. For most of us, however, we continue to survive because we believe that the many inequities imposed on us since April, 7, 1977, will eventually be recognized and that, through your actions, we will be given the compensation we so desperately need, and so properly deserve.

At this point, a word or two should be said about exports. On July 20, 1977 the CPSC held a public hearing on the export question and then on October 20, 1977, the Commission voted that it had no authority to prohibit the export of those products or substances which it considered to be hazardous. Relying on this action of the Commission, some sleepwear manufacturers found a partial remedy to their financial pressures and exported Tris garments to other countries. In most instances, these manufacturers recovered only 10 to 30 cents on the dollar. In May of this year, however, the Commission reversed its position on exports and voted that it did in fact have authority to prohibit the export of goods that had already been introduced into domestic commerce. Despite this change of position by the Commission, we understand that there has been some criticism of those firms which exported Tris garments and we would like to make clear that we believe these firms, as well as those which did not export, are equally entitled to indemnification.

One of the best indications of the need for this legislation is the letter of April 27, 1978 to Chairman Rodino from the five Commissioners of the CPSC. The Commissioners have stated that they support this legislation, and that our industry has been economically harmed through no fault of our own. Furthermore, we agree with the Commissioners that the Judiciary Committee should consider the various circumstances surrounding the use of Tris, and we are prepared to discuss these circumstances with you today.

Mr. DANIELSON. Mr. Harris.

Mr. HARRIS. Thank you, Mr. Chairman.

Are the sleepwear fabrics you are using today, have used in recent years, more flammable than fabrics previously used?

Mr. SHIREY. Flammability is determined in our industry by a test that is stipulated in the children's sleepwear standards, and it is a pass-fail test, so any fabrics that pass that test we consider acceptable under the Government standard, and it really does not qualify ranges. It simply is pass-fail.

I would say this in regard to that answer. The test has been modified by the Consumer Product Safety Commission since the first of this year. Now they concluded that the amendment that they made to it, which deleted what is called a residual-flame-time test criterion, did not seriously affect or adversely affect the safety of our products. I question the wisdom of the original standard in having included that provision in the outset, and it was to meet this criterion that most chemicals were used in our fabrics all the

years during which the standard existed, so since the test has been changed, that minor factor has been removed, and to that degree, there is a safety level which the Commission found inconsequential, which is no longer part of our requirement, but the removal of that test factor is the reason that today we are able to produce garments without chemicals, I might add, that do meet the present remaining standard.

Mr. HARRIS. This is new knowledge for the committee, to me at least. Let me take you a step back before these standards were issued that really required—or the industry apparently felt required—the use of Tris. What had been the nature of the use of fabric at that point? In specific terms, did the new polyesters, the synthetics and what have you, tend to be more flammable than the cottons and flannels you had used previously?

Mr. SHIREY. They were flammable in a different sense. They both failed, without chemical additives, the test as it was originally put in place.

Mr. HARRIS. I am merely asking what had been the nature of the industry?

Mr. SHIREY. Let me respond this way. Up until the standard was passed, the consumer, again who is king in our industry, had said they wanted basically a cotton sleepwear garment that was absorbant, comfortable, both warm and cool, depending on how it was produced, and about 80 percent of all children's sleepwear was made out of cotton.

Mr. HARRIS. This is my question.

Mr. SHIREY. Yes. The polyesters which replaced the cotton with Tris were most like cotton, and that was probably the reason that they exercised a growing prominence in the marketplace, because they, though a synthetic, were more like cotton than anything else we could produce.

Mr. HARRIS. Let me state this. You had an industry that had been making sleepwear for quite a few years.

Mr. SHIREY. Yes, sir.

Mr. HARRIS. All of a sudden, as I recall, we had a tremendous nationwide public relations, consciousness-raising process, which was one of the great miracles of our time, that sleepwear, children's sleepwear, was flammable, and that it shouldn't be.

What I am trying to determine is this: Had there been a development, as the synthetics came along, that tended to make the sleepwear in the 1960's more flammable than sleepwear in the 1930's?

Mr. SHIREY. No, not at all. In fact, in all fairness, they were less flammable because under the Flammable Fabrics Act of 1953, as amended in 1967, they were actually less flammable than they had been in the 1930's because there were refinements made to those fabrics that kept them from ever getting on the market if they were highly flammable, and there probably were some children's sleepwear fabrics on the market in the 1930's that would not meet the 1953 or 1967 Flammable Fabrics Act.

Mr. HARRIS. You are saying when the standards came along, when we had the big push to put higher standards on children's sleepwear, that the industry was manufacturing sleepwear that was in historical perspective safer than it had been in previous years?

Mr. SHIREY. Safer than it would have been prior to the Flammable Fabrics Act, yes.

Mr. HARRIS. Obviously, now I know what a businessman like you has to do in the market. I understand how competitive the apparel market is.

Mr. SHIREY. I am finding out again every day how competitive it is.

Mr. HARRIS. Someone said turkey one year, feathers the next.

Mr. SHIREY. Yes.

Mr. HARRIS. I can understand and I think your knowledge is good, how sensitive you had to be in the marketplace for consumer acceptance, just as we have to be to the electorate. But the point of the matter is that you do have a responsibility with regard to the product which you put into the market other than gaining consumer acceptance. The consumer may not be sensitive to the safety factor, may not be sensitive to health factors, and the manufacturer does have some responsibility. He can't just put a piece on the market without regard to health or safety factors.

Now you have safety factors come down to you in the way of Government regulations.

Mr. SHIREY. Right.

Mr. HARRIS. And you had to respond to it some way. Obviously when you went to your supplier, you had to be in a position of saying "I need fabrics that meet the safety standards."

Mr. SHIREY. That is the only fabric we could use, that is correct.

Mr. HARRIS. And so you did make that demand on your supplier?

Mr. SHIREY. Certainly. You see again the fabrics supplier had a test to pass, but after we made the garment, we had to test the garment once it had been produced. We cut seams out of the garment and tested it before we could ship them, so we had to get fabrics that passed in order to produce garments that passed, and the present standard is both a fabric and a garment standard.

Mr. HARRIS. But in that process, was the question asked, or did anyone in the industry express concern as to whether or not there were health problems here with regard to the fabric?

Mr. SHIREY. We asked at the time the original standards were being passed about the possible side effects of chemicals that we knew would have to be added and were told don't bother about that. You go meet a performance standard, and that is what we did.

Mr. HARRIS. Yes, but as you go round buying material, as a manufacturer, you have to be sensitive about a number of problems with regard to the fabric that you are buying, not just what those standards were that were set down by Government, but whether it is going to wear well, whether it will wash well, whether it is going to hold up. Certainly when you get a fabric, to manufacture a product, you have to be concerned about a lot of other qualities than just meeting the standards that the Government sets down.

Mr. SHIREY. Yes, we do. We are looking at the performance standards, however, because as apparel producers, we are not chemists. We are related to performance of our product. If the seams fall apart, we can deal with that. If the color washes out, we are not chemists. We send it back to the textile mill and say "Hey,

look, you gave us a color that faded." But we don't ask them what their dye formulation was because we wouldn't know if they told us.

Mr. HARRIS. But you are interested in the fact that it doesn't fade.

Mr. SHIREY. Certainly. That is a performance standard we can deal with. We have the technical ability to deal with.

Mr. HARRIS. And you probably are interested too, aren't you, in whether or not they are putting something into that fabric at some point in time that is going to cause cancer?

Mr. SHIREY. Oh, obviously so. We were very anxious to move away from it, for a whole variety of reasons, as soon as we found out that it was even suspected of being improper.

Mr. HARRIS. I am not talking about just that. I am talking about anything. I think you want the supplier to provide you with something that is not hazardous to health.

Mr. SHIREY. Certainly, just as we want the Government not to require us to use something that is.

Mr. HARRIS. Exactly, and I just wondered if you asked that question.

Mr. SHIREY. We did at the time the Government passed the standard.

Mr. HARRIS. I am not talking about asking the Government now. I am talking about asking the supplier whether or not he is supplying you with something safe.

Mr. SHIREY. I will tell you what. I would have as much reason to ask that question as I would the maker of my television set to give me a schematic, because I wouldn't have understood the answer. If he had given me the answer, I couldn't have understood it. We don't have that technical ability in apparel.

Mr. HARRIS. But you could ask the question whether or not, to his knowledge he has put any carcinogens into his product.

Mr. SHIREY. I could have asked the question, yes, I could have.

Mr. HARRIS. What do you think he would have answered?

Mr. SHIREY. No.

Mr. HARRIS. The essential question here that we have to deal with is what responsibility your industry has with regard to acquiring products that are safe as far as the consumer is concerned, both from the health standpoint and the safety standpoint. The real question, I think, that the committee is going to have to resolve is whether you met those responsibiliteis, whether in fact the taxpayers should pick it up for you and which responsibilities are purely those of government.

That is a tough question for this committee, I think, to answer, and I think my line of questioning is simply to try and get into the record a response from you that your industry took those steps that they thought were necessary, not just that were forced upon them by government, but those steps that they thought were necessary to assure the health standards and safety standards of the product they were putting to the public were being met.

Mr. SHIREY. Yes, absolutely. You know, were we to have asked the questions you are suggesting that we might have asked would have been beyond our position in the marketplace. We did not interface with the chemical companies; we did not buy chemicals.

We did not know what they had to do to make the fabrics meet the standards the Government put on them again.

It would make as much sense for my wife to ask about the chemical compound in her detergents so she would not mess up the stream. You just do not ask the questions beyond your intellectual capacities.

Mr. HARRIS. I understand that answer.

Just one last question: At what point in the line of your industry do those questions get asked in the absence of government intervention, at what point in the industry do those questions get asked as to the safety and health standards with respect to putting in a chemical or any other elements in a product to eventually reach the consumer?

Mr. SHIREY. I suspect it first gets asked by whoever makes the chemical and whoever buys the chemical.

However, it seems to me in this particular situation what we are looking at is a hazard that developed and if you want to trace it clear back to its roots, it is the scientist who must bear the blame, because he produced the product and he didn't have the wisdom to properly evaluate before he enabled his employer to put it in the marketplace.

Mr. HARRIS. I don't know. I don't know what the scientist means exactly, but there is somebody along the line that sold a product that was unsafe.

Mr. SHIREY. That is true, and that seems to be a part of the affluent society in which we live. If we are going to benefit by its amenities, we bear some responsibility for even living in the environment in which they operate.

Mr. HARRIS. It seems to me that there is someone other than government who takes responsibility for putting a product on the market as unsafe.

Mr. SHIREY. Maybe it's the development of human knowledge, and the Government required us to be forced into the use of a product that had not properly been evaluated. I too agree with Mr. Simpson, I think there were errors the Government made, not just one.

First, the unusual stringencies in this standard which have now been removed and were, in fact, the cause of our having to use chemicals in our products, or fabrics, chemicals in the fabrics in the products we ended up producing.

Secondly, I question also the ban. That involved the recall.

Mr. HARRIS. This was, of course, what my line of questioning with Mr. Simpson was trying to develop. There is not a single Member of the subcommittee that would not like to step in, if proper, to help an industry that has been especially hazardously affected this way, especially one comprised of as many small businesses as yours.

But, my question is, what Government action was improper? As close as I can come, the element that seems to be improper, that caused the economic detriment was the recall.

Mr. SHIREY. The recall, and let me make the further observation, the last statement of mine was a personal statement and not an American Apparel Manufacturers Association statement. It is a personal observation.

Mr. DANIELSON. I have only a couple of questions.

I was interested very much in Mr. Harris' questions. Someplace along the line the Tris was added to the fiber, to the threads, the yarn, the fabric, to the end product, to what became the end product.

Mr. SHIREY. Yes, that is correct.

Mr. DANIELSON. It is my understanding you in the manufacturing part of this chain did not add the Tris.

Mr. SHIREY. That is right, sir.

Mr. DANIELSON. You purchased the raw materials or fabrics from your suppliers which were represented as meeting the standards of the flammability tests.

Mr. SHIREY. We were required to do so, yes, sir.

Mr. DANIELSON. That is what you did, didn't you, whether you were required or not ?

Mr. SHIREY. That is correct.

Mr. DANIELSON. And beyond that you did not go back behind your supplier to find out what that person put into the fabrics. You bought a fabric.

Mr. SHIREY. That is right. I don't ask them the molecular structure of the compound of their dye stuff.

Mr. DANIELSON. I am simply trying to move backwards along a chain of processing to find out where the Tris came in. It is your representation that the Tris did not come in from your part of the industry.

Mr. SHIREY. Very definitely so.

Mr. DANIELSON. You made a statement, I think it was a part of your ad lib that I didn't find in the statement, referring to chemicals which were mandated, did they use the word "mandated".

I don't find any chemicals were mandated anywhere.

Mr. SHIREY. To use a term that Mr. Simpson used, he said that the practical result of the standard was to mandate the use of chemicals. I can explain that.

Mr. DANIELSON. Is that the sense in which you used it?

Mr. SHIREY. Yes; that is correct.

Mr. DANIELSON. Ok. No problems.

You assisted me greatly in one point. You said on October 20, 1977, the Consumer Protection Safety Commission voted that it had no authority to prohibit the export of these items.

Mr. SHIREY. That is correct.

Mr. DANIELSON. I didn't know that, and that remained in effect for several months?

Mr. SHIREY. Until May.

Mr. DANIELSON. Until they reversed themselves?

Mr. SHIREY. That is correct, sir.

Mr. DANIELSON. Now, do you know of any economic purpose to which the Tris-treated garments and fabrics can be used otherwise, I mean in light of the ban?

Mr. SHIREY. The suggestion was made that adult wearing apparel was not involved, the suggestion was made that other end use products, all other end use products other than children's sleepwear was not affected by the ban, so to the extent there is fabrics left, possibly it could be diverted into another use.

However, fabrics with little ducks all over them probably wouldn't go very well as a headliner in a car.

Mr. DANIELSON. It probably has a bad connotation.

I believe I have no further questions here.

Can you other gentlemen tell me, and I am going to go from left to right, just traditionally.

Do you have something that is new, additional, different that you would like to add to this information? I want to point out something: I don't want to cut anybody off, but we have a staff gone rampant, and we have enough witnesses to stay here until 8 o'clock, but I don't want to cut anybody off.

Mr. FEUER. Mr. Chairman, my testimony is somewhat different in certain respects that have not been covered, and I would like to have it a part of the record.

Mr. DANIELSON. Your statement, without objection, will be received in the record.

[The prepared statement of Mr. Feuer's follows:]

SUMMARY OF PREPARED STATEMENT OF LEO J. FEUER, PRESIDENT OF THE WILLIAM CARTER CO.

The William Carter Co., one of the largest manufacturers of children's sleepwear, actively supports the proposed legislation to provide indemnification for losses incurred by the apparel industry as a result of the ban and repurchase of sleepwear containing the chemical Tris. The use of Trus was effectively mandated by the promulgation of the standard for children's sleepwear, FF3-71.

Carter's stopped using Tris at the earliest indication of possible hazard, and yet, because the CPSC not only banned future sales but ordered the repurchase of previously manufactured merchandise, the company has suffered a loss of $7,000,000, approximately $5,000,000 of which would be recovered under the proposed legislation. While borrowed funds have helped the company sustain these losses temporarily, that is only a stopgap measure and these loans must be repaid. In the interests of equity and economic justice, those who manufactured Tris-treated garments should not be forced to bear the entire burden for losses resulting from well-intentioned but poorly implemented Government policy.

Mr. Chairman and Members of the Hearing Panel, my name is Leo J. Feuer and I am President of The William Carter Co. Our company was founded 113 years ago, and its trademark "Carter's" has become a household word in the United States, generally recognized by mothers as the top brand for infants' and children's underwear, sleepwear and outerwear. Throughout its history, the company's success has been based on integrity, quality of product and fair dealings with its employees, suppliers and customers.

Entirely apart from monetary losses, the company has suffered considerably from the Tris ban because of the feeling on the part of mothers, attested to by many letters and telephone calls, that somehow Carter's should have protected them from Tris and the anxiety of possibly having exposed their children to any risk of illness.

This loss of good will cannot be measured or restored by any legislation. Many mothers, however, blame the Government for the mandating the standards in the first place and particularly for not allowing them freedom of choice between flame-retardant an non-flame-retardant garments.

Specifically, the CPSC could and should have promulgated standards, as they were urged to do on many occasions, which would not require chemical treatment for sleepwear sizes 0–6X. Only after the April 8, 1977, ban and under considerable pressure from consumers, sleepwear manufacturers and the Congress, did the Commission initiate action to relax the standard for sizes 0–6X to conform it to the less stringent standard for sizes 7–14. Nearly ten months elapsed before the Commission took final action on this seemingly simple and logical step.

Even today we don't know how we as a manufacturer could have done anything differently after the FR standard for children's sleepwear for sizes 0–6X was promulgated and become effective in 1973. We do know that the need for chemical treatment could have been avoided if the original FR standard for sizes 0–6X had been made slightly less stringent, in line with the subsequently adopted sizes 7–14 standard. Furthermore, in 1974, when the Commission adopted the standard for

sizes 7–14, it could have revised the earlier 0–6X standard, an action which the Commission did not take until almost four years later.

Carter's did extensive research and other exploratory work during the two-year period prior to the promulgation of the first sleepwear standard FF3–71 and the further two-year period prior to its effective date. This work led to the conclusion that cotton, which had been the fiber of almost universal choice in the children's sleepwear field, would no longer be usable except in certain woven fabrics with very heavy chemical add-on. Knit cotton fabric simply could not be made to perform according to the standard. That left two domestic and several foreign inherently flame retardant synthetic fibers, but most of these had such serious drawbacks from a consumer standpoint that one major retail chain subsequently had to discontinue sale of one of them at great expense, after selling this merchandise for about a year and a half. In any case, the inherently flame retardant synthetics were not available in sufficient quantity to supply the needs of the market, and they had serious performance deficiencies for a number of specific sleepwear products. That left only chemically treated polyester as the most viable alternative and that is what in fact became the most desirable product from a consumer standpoint in terms of price, durability and aesthetics while still meeting the then stringent flammability standards.

Carter's and other manufacturers were very much concerned about the use of chemical treatments with which they had no prior experience, and particularly the dermatological and toxicological effects on young children. We worked with chemical companies, some of the doctors who strongly favored stringent flame retardant standards, and medical laboratories to try to assess these potential problems. We also apprised the Commerce Department, which was initially in charge of administering the Flammable Fabrics Act, and subsequently the Consumer Product Safety Commission, in open hearings of these concerns but they, nevertheless, promulgated a standard of such stringency that chemical treatment, in fact, became mandatory. We further asked this agency to include in the standard a list of chemical finishes approved by the Surgeon General, or at least a mandated protocol for testing such finishes, but these requests were not honored.

The selection of Tris was one in which the sleepwear manufacturers virtually had no choice. Tris was the only chemical available which could be commercially applied to polyester fiber and which met the durability requirements of the FR standard. It should be emphasized that the decisions regarding the use of FR chemicals were made at a time when there were no studies or scientific evidence available indicating that there might be a health problem associated with any of the alternatives. We were simply trying to provide the best product at a reasonable cost. Carter's did not begin using Tris until its own research work and other available information demonstrated that it cleared dermatological and toxicological tests. Furthermore, Tris had been used for over 20 years in other industries, and there was no reason to believe, based upon that expeicence, that the ultimate user of the Tris-containing product of the employees who came in daily contact with it would suffer any harmful effects.

Early in 1976, after the newly developed so-called Ames screening test indicated that Tris was a mutagen, Carter's considered it prudent to discontinue further use of Tris. The Ames test is designed to shorten the normal two and a half year testing period for carcinogenicity to a matter of days, but is predictive value is not universally accepted by the scientific community. There was also a contemporary study by the Environmental Protection Agency which appeared to exonerate Tris and other flame-retardant chemicals as possible carcinogens. It is clear that Carter's stopped using Tris at the earliest indication of possible hazard or adverse publicity, and that any financial loss from the subsequent ban and recall is not due to a disregard of any early warning signal, but rather to the massive repurchase of previously manufactured merchandise from retailers after the ban.

It is estimated that children's sleepwear covered by the FR standards represents about $500,000,000 per year in annual sales at wholesale cost. This so-called sleepwear includes not only boys' and girls' pajamas and nightgowns, as well as footed sleepers which are normally thought of as sleepwear, but also the widely used infants' stretch coveralls and other layette items for infants under the age of one, all of which are included in the definition of sleepwear for the purposes of flammability standard. There are slightly over 100 companies which make children's sleepwear. Carter's and a few other companies are substantial in size with the remaining producers being most small companies with annual sales well under $10,000,000, and located in many states. Under the present circumstances, we consider ourselves most fortunate in that two-thirds of our company's business is devoted to children's underwear and outerwear and only one-third to sleepwear. If it were not for our

relative size and diversified product mix, it is likely that the Tris ban and repurchase would have had a more devastating effect on our company and resulted in curtailment and layoffs, or even bankruptcy.

This committee is being asked to make recommendations on a bill which would indemnify manufacturers for the losses incurred in the government-mandated repurchase of Tris-containing children's sleepwear. Our best estimate is that the loss to Carter's is approximately $7,000,000—probably the largest loss sustained by any one company. Of this $7,000,000, approximately $5,000,000 would be recovered by the company if the proposed legislation is passed. You might well raise the question whether the company could not sustain a $7,000,000 loss without getting a helping hand from the government. Let me put this question into proper perspective. Profits in the apparel industry are very low compared to most other industries. Even a relatively successful company like ours has averaged only three percent net profits on sales over the past ten years, and in our best year we made only 3.8 percent. The children's sleepwear part of our business has made virtually no money at all since FR standards went into effect in 1973.

Our sleepwear manufacturing plants are located in Mississippi, Georgia, and Texas. It should be obvious in view of the low profitability at these products that without some form of indemnification, the continued existence of these plants and the associated jobs could be in serious jeopardy. We have been able to obtain commercial loans to help meet the costs associated with the recall, but these loans must be repaid. Under the circumstances we do not believe that our shareholders, our employees and our customers should be made to suffer because of the vicissitudes of government Commission regulations. Equity and fairness dictates that the resulting burdens be shared by the society which the industry and the government sought to protect.

The majority of sleepwear manufacturers being faced with severe or even fatal losses due to the Tris ban are considerably smaller, do not produce their own fabric as we do, nor have available to them research and other specialized personnel. If Carter's, with its resources and intensive efforts related to FR sleepwear dating back to early 1969, is faced with a staggering loss, it is not difficult to imagine the disastrous consequences that this ban and recall is having on other manufacturers.

Immediately after the April 8 ban, and in spite of our belief that it was unjustified, and could be overtuned by court action, Carter's forthwith initiated the procedures necessary to comply with repurchase regulations. This has been a major effort involving our entire sales force of approximately 70 persons, and the setting up of a huge, complex warehouse and check-in operation in newly rented space, to receive and process what has proven to be a return of well over a million garments. To put this into perspective, the weight of the returned merchandise is estimated at something over 200 tons of children's sleepwear, and we have as yet no method of disposal. Smaller companies could not undertake a comparable operation without going out business, unless there is indemnification. As you know, the CPSC's method of arriving at the order to ban and recall was challenged in a U.S. District Court and that court held that the ban is invalid because the industry was not afforded due process.

The Commission was enjoined from enforcing its ban and that injunction has been upheld pending appeal. The appeal by the Commission is still pending; however, in December of 1977, the Commission withdrew its interpretive rulings of April 8 and June 1, 1977 and issued a so-called statement of policy in which it states its intention to enforce the sales ban and repurchase through individual court action. It should be noted that the Commission promulgated standards which, in essence, mandated the use of Tris under the Flammable Fabrics Act yet chose to issue its interpretive ruling under the Federal Hazardous Substances Act. All of this, understandably, has created confusion in the industry.

As far as indemnification is concerned, however, the justification and immediate need is certain. in the public mind, Tris is a suspected carcinogen and Tris-containing sleepwear will never again be a salable item. No court decision or legislation can change that. For the many manufacturers who were somehow able to initiate repurchase, that process is well underway, if not nearly completed. As a result, losses have occurred which cannot be recovered unless there is indemnification.

I respectfully urge passage of this legislation for indemnification as the way to preserve a small but important segment of the apparel industry and to give consumers a broad, competitive choice of merchandise from a wide range of manufacturers.

Mr. DANIELSON. You can summarize it, probably.

Mr. FEUER. Yes.

The only things that may not have been covered are where we differ. Our company does differ from the majority of the industry in several respects.

One, we are the largest in this field.

Second, we were not making just the sleepwear.

Fortunately, two-thirds of our business was in underwear and outerwear. So we are not on the verge of bankruptcy. However, we were seriously hurt and this obviously is going to affect, unless we get some indemnification, all our future plans, our future expansion.

We need three plants basically at the present time, which could be paid for by this loss, and if we don't get it, then those plants will not go up and the people, roughly 1,000 people, directly will not be employed.

Now, there are a couple of other things. We differ also in the fact that we did not generally buy the fabrics. We are a vertical operation; we knit our own fabrics for those garments in sleepwear.

So, we bought yarn that already contained the Tris for certain products, and the Tris in that case was put in by the fiber manufacturer, not the yarn manufacturer, but the fiber manufacturer, and we thought it was an outstanding product because, having been added at that stage of manufacture, it was really locked in. It was not something that was added afterward.

Also, we did produce fabrics and, as Mr. Shirey said, before the standards practically all of the sleepwear was made of cotton. After that we could not use one ounce. We worked for 3 years trying to perfect a treatment, chemical treatment, the one Mr. Simpson referred to, to make a satisfactory knit fabric and it could not be done and has not been done to date commercially.

So we had to switch to a synthetic and we found that, in fact, we not only had to switch to a synthetic, polyester, but also to a chemically treated polyester.

At the time of the promulgation of the original standard there were practically no other choices. The other choices were so bad that they really were not available.

Subsequently, some other materials have become available.

For example, there is one fiber, there are really several fibers now that are inherently flame retardant. They are quite good for certain uses, for others they are not.

Of course, being synthetic, made from chemicals, there is no telling that some day somebody might not raise a safety question about those. But I would like to go back to the standard itself for a moment.

We do also believe that the original standard, and we testified at length at the time, was too stringent. The reason I believe it was put in, in the form it was is that there was one type of cotton flannel fabric available on the market at that time that had been chemically treated that could meet this particular standard, and they said, "See, it can be done."

But that was just for one product, one type of product, one weight. And it contained about 35 percent of chemicals in it. Not that that chemical was never found to be bad, but that much chemical we just didn't believe in for little children. Besides, it could not be done practically in knitted fabrics.

So we think the original standard was too stringent, and we try to point that out.

Second, the original standard only covered sizes from 0 to 6, the very smallest children.

In 1974, the Commission added a standard for the larger sizes, 7 to 14, and it recognized that the original standard might have been too stringent, so it made it slightly less stringent. That slight difference we believe made no difference in the safety of the garments, but it did eliminate the need for the chemical treatment, because this later, second standard, could be met with polyester that was not reated with chemicals.

That was in 1974 that that standard was adopted.

Now, at that point, logically the Commission should have conformed the earlier standard for the small size range to this later standard. But they didn't do it. If they had, it would have avoided this whole problem.

Mr. DANIELSON. May I interject?

You mean to say after that date there were two standards, one from 0 up to size 6 and a second one?

Mr. FEUER. Yes, sir; there were two standards in effect until February of 1978.

Mr. DANIELSON. One standard up through size 6 and another one 7 to 14?

Mr. FEUER. Right.

Mr. DANIELSON. Are they all the same now?

Mr. FEUER. They are all the same now, and it took the Commission 10 months after the ban and recall even to make a small change and logical change of conforming the two size standards. That certainly was something that almost anybody should have recognized at that point, certainly, in 1976 and 1977, that if chemicals are being questioned, let's use the one standard that does not require chemicals.

But it was not done until February of 1978.

I might just re-enforce the fact that although there were concerns about untested chemicals in the early days, we had all of the tests done that we knew about. We had dermatological studies done by outside consultants and toxicological studies. We thought of the fact the child could chew on a garment, and so we had certain tests run for that.

No one thought of the possibility of conducting a study that would actually feed a raw chemical in massive doses for 80 percent of an animal's life, that that could be in any way related to wearing apparel, so that no one ever thought of that, and when the thing first came out in 1976, this Ames test which threw some doubt on the safety of Tris, as has been testified here, everybody moved away from it quickly.

That was the first notice anybody had of any possible danger. And that is it.

Mr. DANIELSON. Thank you very much.

I have no questions.

Mr. Harris?

Mr. HARRIS. Do I understand that within your company you actually bought Tris and——

Mr. FEUER. Yes.

Mr. DANIELSON [continuing]. Treated fabric with it?

Mr. FEUER. Yes.

Mr. HARRIS. Who manufactured the Tris?

Mr. FEUER. We bought the Tris from a company or maybe a couple of companies that were so-called intermediary manufacturers. They didn't really manufacture it, they bought the Tris from the original manufacturer and then they compounded it, in other words, there were things added to it and it was put into an emulsion form so it could be usable by a textile firm like ours.

So we were really still two steps removed from the original manufacturer.

Mr. HARRIS. But when you bought this product you made inquiries as to the nature and——

Mr. FEUER. We certainly did.

Mr. HARRIS. And safety of this product?

Mr. FEUER. Yes.

Mr. HARRIS. Were the health factors with regard to this product inquired from the supplier?

Mr. FEUER. Yes, we inquired, and we got a record of all of the tests that had been conducted and they, frankly, were all of the tests that we or as far as we know anybody else knew about.

The carcinogenicity issue didn't come up until 1976 and, in fact, even when that issue came up, we started to do a lot of research into it, and we found an EPA study that had just been published in December, I think of 1976, I am sorry, it was 1975, just 3 months earlier, that completely exonerated Tris and other chemicals of a like nature from specifically carcinogenicity.

Mr. HARRIS. To pursue my line of questioning a little bit more, when you buy these chemicals you are obviously interested in health factors; you don't want to buy a chemical to put into your fabrics that is going to cause rashes over 80 percent of the kids that wear it.

Mr. FEUER. Right.

Mr. HARRIS. So you are concerned?

Mr. FEUER. Yes; we certainly are.

Mr. HARRIS. Certain tests are conducted by your supplier.

Mr. FEUER. And by us.

Mr. HARRIS. Before you buy the product?

Mr. FEUER. And, in fact, we sent the Commerce Department originally during the period of testimony, when the standard was first promulgated in 1971, we sent the Department the results of some tests that indicated rash problems with chemicals.

Mr. HARRIS. As you pursue those concerns, do you feel that there was a failing upon your intermediate supplier, or your ultimate suppliers, with respect to the proper testing of the safety of this chemical?

Mr. FEUER. I think they did everything they knew about that could be checked.

Mr. HARRIS. Don't you feel——

Mr. FEUER. You see, the Ames test which the Environmental Defense Fund referred to in their first notice of a possible hazard to the Commission, I think that was done in February or March of 1976.

Mr. HARRIS. February or March of 1976?

Mr. FEUER. Yes.

Mr. HARRIS. Were there any carcinogenic tests made with regard to the Tris product that you know of or previous to that?

Mr. FEUER. No; not that I know of.

Mr. HARRIS. You know, just as there must be some concern as to whether or not a chemical is a carcinogenic——

Mr. FEUER. I suppose in hindsight maybe there should have been some concern, but you see we are not producing a food product. As Mr. Simpson testified, there is still a lot of question about the real effect.

Mr. HARRIS. As to the Ames test and as to the standard?

Mr. FEUER. The real question of hazard when you are not dealing with a food product and daily ingestion, but when you are dealing with possible absorption through the skin.

Mr. HARRIS. With your knowledge and experience in industry, before you started using a product or certainly a chemical that is going to be put into your product, does the question of whether or not it is a carcinogenic arise or had it not arisen?

Mr. FEUER. It had never arisen previous to this, no. Now, of course, we would thoroughly check everything for that. But, tomorrow there would be something else, some other concern that we just don't know about today. After all, cancer is not the only hazard to man.

Mr. HARRIS. Indeed not. You are saying that the apparel industry, as we came into the 1970's, had not at that point become sensitized to the problem of the possibility of carcinogenics absorbed through the skin rather than ingested. Is that basically it?

Mr. FEUER. Yes, sir.

Mr. HARRIS. Thank you, Mr. Chairman.

Mr. DANIELSON. Maybe you are not the correct witness to ask, but I think you would be able to answer this.

Under the buy-back or repurchase or whatever you call it ruling, a manufacturer was required to repurchase from his vendees the manufactured garments; am I correct?

Mr. FEUER. Yes.

Mr. DANIELSON. Could the manufacturer in turn impose a similar obligation on the person, on the entity from which the manufacturer acquired its Tris-treated fabrics?

You are Mr. Herold?

Mr. HEROLD. Yes. The operation of the repurchase provision of the Hazardous Substances Act requires that the repurchase obligation flows back up the channel of distribution all the way up to the ultimate producer of the chemical, Tris, itself, under the existing Commission policy statement.

Mr. DANIELSON. Under the hypothetical situation?

Mr. HEROLD. Hypothetical, yes.

Mr. DANIELSON. Under such a situation you would ultimately get back to the vendor of the Tris itself?

Mr. HEROLD. Yes, but now, the extent of recovery, I might say, is quite limited. The way it would operate, as I understand it, is as follows: The retailer would recover from the apparel manufacturer the cost of the garment. The retailer would recover the cost of the finished garment. The apparel manufacturer would recover from the textile mill the cost of the fabric.

In other words, the apparel manufacturer would be out his own labor.

Mr. DANIELSON. His processing?

Mr. HEROLD. His processing.

Mr. DANIELSON. His own added value would be out?

Mr. HEROLD. Exactly. The textile mill would recover the cost of the fiber the mill purchased from the fiber company, and whether it was the fiber company or the mill that actually added the Tris to the item, the manufacturer of Tris would reimburse that entity for each cost of the Tris.

Mr. DANIELSON. At each link in the chain, the person who was required to repurchase, but then could resell would lose his own value added.

Mr. HEROLD. That is correct.

Mr. DANIELSON. I see. OK.

Mr. HEROLD. And I might add just to put it in some prospective, at least form the apparel manufacturer's standpoint, the apparel industry is very labor intensive, and it is estimated approximately two-thirds of the value of an item of apparel is labor, so even under the repurchase obligation imposed by the Hazardous Substances Act, the burden still falls very heavily upon the apparel manufacturer.

Mr. DANIELSON. I follow you on that. Ultimately, you would get back to the man who sold a barrel of Tris, I guess.

Mr. HEROLD. Absolutely; that is right. His value may be——

Mr. DANIELSON. It would be somewhat less than the value of the finished garments.

Mr. HARRIS. I guess, if I may, the point is in that chain that the major value you added is at the apparel manufacturing stage and, therefore, they are the ones that are really taking the brunt of the recall.

Mr. DANIELSON. I understand that. I just wanted to trace it is all.

Mr. FEUER. In our case or similar cases where a mill is vertical, it would be something like 90 percent.

Mr. DANIELSON. You would be really stuck; wouldn't you?

Mr. FEUER. Yes.

Mr. SHIREY. I might further add there has been no recovery up the chain at this point.

Mr. DANIELSON. There has been no recovery?

Mr. SHIREY. No recovery from apparel producers receiving anything at all up the chain. Right now we are stuck.

Mr. DANIELSON. Any efforts been made?

Mr. SHIREY. Yes, sir, in some cases. You see, there are only about six major suppliers of fabrics for our industry, and we have to continue buying from them because they are the only ones producing certified products.

Mr. DANIELSON. You don't want to offend the cow that produces the milk.

Mr. SHIREY. That is very much like it. In fact, we have been required to sign off we would not offend that cow to get milk in certain cases.

Mr. DANIELSON. I understand the practicalities of it.

I have no further questions. I kind of wonder if the flammability was any more of a hazard here; I am not sure.

All right, any of you other gentlemen?
Mr. BYRD. Yes.
Mr. DANIELSON. Mr. Byrd?

TESTIMONY OF DAN M. BYRD, JR., SPRINGS MILLS, INC., FORT MILLS, S.C.

Mr. BYRD. Mr. Chairman, despite the fact the hour is late, I heard myself quoted, not by name this morning, on some of the things that were testified to on the Senate side and I think, if I may, I would like to give direct testimony rather than leaving the hearsay in the record.

Mr. DANIELSON. You go ahead.

I wish we could adjourn. You gentlemen and others waiting have gone to considerable expense to take a day or more off from your work, and we are going to have to just suffer, but we won't have this long a schedule the next time.

Go ahead.

Mr. BYRD. First, let me say this, that getting to the question of the fabrics in the children's sleepwear market, I am sure that Mr. Simpson, when he mentioned a two-year period, was talking about the time from the original proposed regulations. But actually, in fact, the regulations became effective in 1971. And we then for the first time knew precisely what would be required.

So we had only a year within which to conform to the regulations.

I would point out to you that that 1 year period is only a half of the time that was spent by the rat and mouse feeding studies that developed the question of whether or not Tris was carcinogenic, so when we are talking about did the industry do the tests, we had a time frame there to meet this stringent test that was only half the time that is required for the rat and mouse feeding studies.

Now, at that particular time, basically the textile industry produced lightweight, produced fabrics for children's sleepwear, but my company produced lightweight fabrics. They were either 100-percent cotton or blends of cotton and polyester.

We could not at that time and we have not today been able to find a way to make 100-percent cotton fabrics pass flammability tests. The same thing is true of the blends of cotton and polyesters, there is still no way we know.

When the standard was promulgated in 1971 we immediately begin research on 100-percent cottons and on 100-percent polyesters. We could not get the test with the cotton. It passed the test erratically, but we were able with the use of Tris to meet the test, and produce a fabric to supply the market that we had traditionally been a bug supplier of.

Now, at that particular time Tris was the only chemical that was available. I have with me copies of articles taken from technical journals at that time, the Textile Industries, the Chemical Week, the Journal of the American Association of the Textile Chemists and Colorists, and American Dye-stuff Reporter.

All of these show at the time the Secretary of Commerce standard was announced the state of the art was not sufficiently advanced so that blends of cotton and polyester or cotton could be

satisfactorily treated, and that the only chemical that was available to treat 100-percent polyester was Tris.

This is a Hobson's choice. They say they developed a performance standard. It reminds me of when my wife told me to buy any color I wanted so long as it was red. There was no other chemical available at that time to treat 100-percent polyester than Tris.

Mr. DANIELSON. How about blends, was there any other chemical to treat blends?

Mr. BYRD. No chemical to treat blends, and there is still none today to treat blends.

On the question of safety, at that particular time the only requirement of the CPSC was a toxicity test, and we ascertained from the supplier of Tris if the Tris passed the toxicity test provided by the CPSC. In addition to that, we went further and we employed dermatologists to make tests on skin sensitization.

At that particular time, as Mr. Shirey pointed out, no one would have dreamed, just like today no one could dream of a test about something that nobody had had any experience with.

What we have basically here on this whole thing is a question of imposing on the textile and apparel industries rat and mouse feeding tests that are basically designed for foodstuffs, and it just was unthinkable anybody would say you have got to test for cancer by using tests that are designed at that time.

Now, it was my company, Springs Mills, when we were denied an opportunity to be heard on the ban, that ban was promulgated without notice, it was promulgated without opportunity to be heard, without an opportunity to cross-examine or otherwise test the validity of the so-called scientific information.

Mr. DANIELSON. Was it on that basis that the district court issued, I guess it's an injunction?

Mr. BYRD. Yes, sir. It was on that basis that the district court issued an injunction, and in my written testimony, which I would like permission to file in the record——

Mr. DANIELSON. Without objection, that will be received into the record.

[The prepared statement of Mr. Byrd follows:]

SUMMARY OF STATEMENT BY DAN M. BYRD, JR.

At the time (1971) the Secretary of Commerce proposed stringent flammability standards for children's sleepwear, the industry urged additional time and further tests before their effective dates. These urgings fell on deaf ears. The standards were imposed despite industry's repeated warnings and pleas.

To comply with the Secretary's standards, it was necessary to treat children's sleepwear with a chemical fire retardant.

TRIS was the only flame retardant available to treat polyester, acetate and triacetate fabrics used for children's sleepwear which would enable the sleepwear to comply with the Secretary's standards. Nothing was available to treat cotton and blends of cotton and synthetic fibers, the traditional fabrics used for children's sleepwear.

The Secretary's standards had the practical effect of the Federal Government's ordering that TRIS be used.

On April 8, 1977, the CPSC banned TRIS-treated sleepwear and ordered its repurchase.

Thus, another department of the same Government has not only banned TRIS but ordered the repurchase of articles containing it. Moreover, it did so without notice of a hearing, without a hearing, and without opportunity to cross examine or otherwise test the creditability and validity of evidence.

The CPSC's ban was enjoined by the U.S. District Court for South Carolina and the matter is now on appeal to the U.S. Circuit Court for the 4th Circuit. Evidence from CPSC's files in the court case raises serious questions as to whether there was a scientific basis for the CPSC's determination that TRIS in children's apparel was a hazardous substance in the first place.

The apparel and textile industries have acted responsibly throughout this entire debacle which was forced upon them by the Government.

The Government has a financial responsibility and should respond in an adequate and timely manner. S.1503 provides a fair and equitable course for Government to take.

STATEMENT OF DAN M. BYRD, JR. ON BEHALF OF THE AMERICAN TEXTILE MANUFACTURERS INSTITUTE, INC.

Mr. Chairman, my name is Dan M. Byrd, Jr. I am Vice President, General Counsel and Secretary of Springs Mills, Inc. Our executive offices are located at Fort Mill, South Carolina, and our textile plants are located nearby in North and South Carolina.

The national trade organization for the textile mill products industry is the American Textile Manufacturers Institute. ATMI's members constitute about 85 percent of the spinning, weaving, knitting, and finishing capacity for textile mill products in the United States.

ATMI appreciates deeply the opportunity to testify in support of S. 1503, H.R. 7158, and other bills to provide for the payment of losses incurred following the actions of the Consumer Product Safety Commission (CPSC) declaring the chemical flame retardant TRIS, and all garments, fabrics, yarns, and fibers containing TRIS, intended for use by children to be "banned hazardous substances" under the Federal Hazardous Substances Act.[1] The CPSC's actions, if valid, would trigger the repurchase provisions of the Federal Hazardous Substances Act, resulting in losses to the industry which have been estimated by the CPSC to be approximately $200 million.

Any consideration of the textile industry's use of TRIS as a flame retardant should begin with the history of our industry's involvement in seeking to comply, within an extremely limited time frame in 1971-72, with the Government's mandate for flame resistant fabrics for children's sleepwear.

The Flammable Fabrics Act was passed by Congress in 1953 and, effective July 1, 1954, required that all fabric intended for use in wearing apparel thereafter introduced into commerce had to meet a certain standard for flammability. That standard was known as CS191-53. It was, and still is, a relatively simple, flame spread standard. It was the sole flammability standard for apparel fabrics from 1954 until 1972.

Until 1967, the adoption of any new standard would have required the recommendation of the Secretary of Commerce and action by Congress. No other standard was adopted. In 1967, the Act was amended to give the Secretary of Commerce, and later the Consumer Product Safety Commission authority to promulgate standards by administrative action. Pursuant to this new authority the Secretary on July 29, 1971, promulgated standard DOC FF 3-71, commonly known as the Children's Sleepwear Standard for sizes 0-6X. This standard applied to all children's sleepwear and fabrics intended for use in children's sleepwear produced after July 29, 1972.

At the time the Secretary of Commerce proposed standard DOC FF 3-71, the industry urged additional time and further tests before the stringent new standards were imposed. These urgings fell on deaf ears. Nevertheless, I deem it important that the record contain at least one example of these efforts. Some nine national trade organizations, including ATMI, American Apparel Manufacturers Association, and the National Cotton Council of America, joined in an informal Textile-Apparel Flammability Advisory Council, popularly called TAFAC, to cooperate with the Government on the flammability issue. On April 7, 1971, TAFAC gave the Secretary of Commerce a full report on the lack of technological capabilities of the industry to meet the proposed standard and cautioned against hasty action, without adequate time for allergy and toxicity tests. The report stated: "It would be a grave mistake and a serious setback for progress in fire-resistant textiles if, through hasty action, large numbers of children were exposed to fabrics which caused skin rashes and other allergic or toxic reactions."

The efforts of TAFAC and others were to no avail and the new standard was promulgated. Secretary of Commerce Maurice Stans, in disregard of the industry's

[1] The first action of the CPSC appeared in 42 Fed. Reg. 18850 (April 8, 1977), and was thereafter amended (42 Fed. Reg. 20479 (April 20, 1977), 42 Fed. Reg. 21274, 22878 (May 5, 1977), and 42 Fed. Reg. 2860 (June 1, 1977)).

protestations, was quoted in the press as saying, "'I am satisfied that with extra efforts industry can meet the standard.' within the time specified." (Daily News Record, July 29, 1971)

When the Secretary made this statement, our company—Springs Mills—had already been engaged for over a year in a program for testing and evaluating various flame retardants being offered by the chemical companies. In fact, we had sold a flame retardant fabric for certain industrial uses in the 1960's but had been forced to withdraw it when the manufacturer of the substance used to treat the fabric ceased production of that chemical.

I am using Springs as an example for two reasons: first, because I am personally familiar with the company, and second, because Springs has been a prominent supplier of children's sleepwear fabrics and may be considered a representative example for the industry.

Springs' fabrics sold to the children's sleepwear market in 1970–71 were exclusively lightweight, woven fabrics principally utilizing blends of 50 percent polyester fibers and 50 percent cotton fibers. The Company's initial efforts to achieve flame retardancy were therefore concentrated on finding a suitable treatment and devising a commercially feasible method of applying it to these blended, lightweight fabrics. No such methodology could be developed and, in fact, none has been developed to the present.

As a result of the lack of success with blended fabrics, Springs' research turned to evaluating treatments on 100 percent cotton fabrics and 100 percent polyester fabrics. Although the Company's efforts on all-cotton fabrics did meet with some success, it was found that the desired flame retardant results on such fabrics were achieved erratically and then only on heavier weights, such as twills and flannels, fabrics which had not been handled by Springs for this market.

As a result of the foregoing and as a result of the announcement by the Secretary of Commerce on July 29, 1971, that the Children's Sleepwear Standard DOC FF 3-71 was going into effect one year from that date, Springs turned its concentration to development of a flame retardant finish for lightweight, woven 100 percent polyester fabrics. Although work continued on cotton and on blends, it appeared that Springs' survival in the market—one we had long served—was going to depend upon success with the all-polyester fabrics.

Springs does not now and never has had the capacity to produce chemicals for the treatment of fabrics. It must rely upon the chemical industry. The criteria which the Secretary of Commerce had adopted required that any fabric intended for use in children's sleepwear had to self-extinguish before burning more than an average of seven inches and that it has to do this after being lit with a gas a flame while bone-dry and held in a vertical position. In addition, the fabric has to pass this test even after being washed and dried 50 times. Neither Springs nor any other company in the textile industry had the technology in 1971 to produce an acceptable lightweight, woven fabric that would so perform.

Springs found that only one chemical was available which might result in successful treatment of 100 percent polyester in 1971. That chemical was Tris, which was being produced by several companies for use in other industries. Springs ran numerous trials on fabrics utilizing the substance and, after much trial and error produced a fabric which was accepted by the trade. Among the problems which had to be overcome before commercial production of the product were: (1) The production of the 100 percent polyester base fabric, a construction which had not ordinarily been run by the Company until this time; (2) technique to apply and fix Tris to the fabric; (3) dyeability and printability of the fabric; (4) "hand" or feel of the fabrics; and (5) completion of tests to assure the safety of the fabric with this treatment for human use.

I have with me copies of articles taken from technical journals of the period including "Textile Industries, Chemical Week", "Journal of the American Association of the Textile Chemists and Colorists", and "American Dye-stuff Reporter". All of these clearly demonstrate that at the time the Secretary of Commerce's standard was announced, the state of the art was not sufficiently advanced so that cotton or blends of cotton and synthetic fibers could be satisfactorily treated. The report by R. Bruce LaBlanc published in "Textile Industries" for February, 1973 and February, 1974, confirms that Tris was and remained the only known treatment for 100 percent polyester at the time the standard was put into effect and for some time thereafter.

I need not rely solely upon these facts to show that the practical effect of the Secretary's flammability standard was to force the use of Tris to treat polyester, acetate, and triacetate fabrics for children's sleepwear. I can refer to the Court's findings of fact in our lawsuit in Federal District Court in South Carolina. This is a

declaratory judgment action in which U.S. District Judge Robert F. Chapman has concluded that the actions of the CPSC declaring Tris treated garments, fabrics, yarn, and fiber intended for use in children's apparel are null and void because of the failure of the CPSC to adhere to the procedures specified in the Federal Hazardous Substances Act. In his Findings of Fact and Conclusions of Law, Judge Chapman found as follows: "In 1953 Congress enacted the Flammable Fabrics Act, 15 U.S.C. § 1191 et seq. covering the standard for measuring flammability of wearing apparel. Thereafter the Secretary of Commerce was granted authority by the Congress to issue mandate flammability standards and in 1971 the Secretary issued his apparel flammability standard FF 3-71 (16 C.F.R. § 1615) prohibiting the sale in interstate commerce of all childrens' sleepwear sizes 0 to 6X that fail to comply with certain flammability standards. In order to comply with this standard it was necessary that this size childrens' sleepwear be treated with a chemical flame retardant, and Tris was the only flame retardant available to effectively treat polyester, acetate and triacetate fabrics used for childrens' sleepwear, which would enable the sleepwear to comply with the Secretary's standards. This had the practical effect of the Federal Government ordering that Tris be used. Now another department of the same Government has not only banned Tris, but ordered the repurchase of articles containing it."

I also might add that the CPSC, in its answer to our complaint in the case, admitted that at the time the standard was adopted by the Secretary, Tris was the only flame retardant which could be used to treat polyester, acetate and triacetate fabrics so as to enable children's sleepwear to comply with the standard. (Complaint, paragraph 10)

Our lawsuit for a declaratory judgment, as I indicated earlier, sought a determination of whether the CPSC had followed the procedures required by the Federal Hazardous Substances Act before it took action banning Tris treated garments, fabrics, yarn and fiber. As part of our court case, we presented evidence to show that the CPSC should have held hearings, if for no other reason, to avoid or resolve the CPSC's uncertainties in the case. This evidence consists solely of documents from the CPSC's own files and raises serious questions as to whether there was a sufficient scientific basis for the CPSC's determination that Tris in children's apparel was a hazardous substance in the first place. I would like to give some examples of the questions raised in these documents which should have been explored by cross examination at a hearing in conformity with the procedures of the Federal Hazardous Substances Act.

The CPSC acknowledged in its TRIS regulation, that the CPSC had no evidence before it that TRIS had ever caused a single case of cancer in humans. 42 Fed. Reg. 18850. This is confirmed by a memorandum by Dr. Albert F. Esch, Medical Director of the CPSC, dated February 15, 1977, in which Dr. Esch stated, "This, then is an instance where a substance present in a consumer product has been determined to be carcinogenic in laboratory animals, but there is no immediate evidence of a health hazard in humans * * *. This may be the first instance in which the Commisssion is faced with making a major decision under these conditions." Pl. Ex. 5.

The entire scientific basis for the ban on TRIS appears to rest principally on the result of the mouse and rat feeding studies conducted by a contract laboratory retained by the National Cancer Institute. On February 4, 1977, the NCI delivered to the CPSC a computer printout prepared by Mason Research Corporation that conducted the rat and mouse feeding studies under contract with NCI. At the time this printout was delivered to CPSC, NCI stressed that "these data were preliminary, unverified, and uninterpreted * * * these pathological findings are not an official document and presently express the opinion of the Mason Research pathologist. They do not constitute an NCI evaluation of the test results. An NCI evaluation will be presented in a report which will be issued after all components of the experiment and the data and the information are compiled and validated." Pl. Ex. 3-0. Apparently, the rats and mice used in the NCI studies were inbred species that have inherently high rates of cancer. As Dr. Robert Hehir, the CPSC's Director of Biomedical Science, pointed out—"[W]e recognize as biologists that we are dealing with an extremely sensitive inbred animal species that has a high known incidence of tumor to start with. We exacerbate that situation by giving a maximum load tolerated dose of material and treating that animal over its lifetime to this material." Pl. Ex. 9; Official Transcript, pp. 19-20.

Furthermore, as a February 18, 1977 memorandum prepared by the CPSC's Division of Human Toxicology and Pharmacology, and endorsed by Dr. Esch, states: "[O]f all the animals available for experimental purposes none simulates man in all

respects * * * [and] the cause of cancer or mechanism by which it occurs has not been established." Pl. Ex. 6.

Apparently, both the Environmental Defense Fund, the organization which requested the CPSC's ban, and the CPSC's own medical staff have serious doubts as to whether rat feeding studies should be considered as valid scientific evidence of cancer in man. As Dr. Robert Harris, the EDF's leading advocate of the ban on TRIS, acknowledged at an ex parte meeting with the staff of the CPSC held on February 18, 1977: "There is no, as you know, no good scientific method for extrapolating from animals to humans in terms of carcinogenicity."

Pl. Ex. 8; Official Transcript p. 21 (Feb, 18, 1977). Dr. Hehir, the CPSC's Director of Biomedical Science concurred with this position in a meeting between the EDF (including Drs. Highland and Harris) and the members of the CPSC, held on March 8, 1977: "And admittedly, as Dr. Harris pointed out, there is no good way of extrapolating animal carcinogenic data to man." Pl. Ex. 9; Official Transcript p. 19 (Mar. 8, 1977).

In addition, it appears from the record that much of the evidence that TRIS can be absorbed through the skin is based on so-called "maximization testing" methods which guaranteed that the chemical got into the system of the test animals by abrasion of the skin, injections into the footpads of guinea pigs, or the use of a "solution of sodium lauyrlsulfate which so disturbs the epidermal layer that it really loses its official barrier status." Pl. Ex. 8; Official Transcripts p. 16 (Feb. 18, 1977). Dr. Hehir, of the CPSC, criticized these tests in the February 18, 1977 meeting with EDF, stating that "it is really not a valid test as far as I am concerned to say skin sensitization done that way shows absorption, because you have breached the [skin] barrier * * * that is a tough way of getting it into the system and calling it a natural mechanism." Pl. Ex. 8; Official Transcript p. 16. At the same meeting, Dr. Hehir pointed to research of at least three scientists that Dr. Hehir stated "could be offered as evidence that material [i.e., TRIS] did not cross the normal skin barrier." *Id.* pp. 18-19. Dr. Hefir further noted that while the EDF petition alleged that TRIS accumulated in the system, "I find no basis in fact in any of the published literature to find that it is cumulative." Pl. Ex. 8; Official Trancsript p. 20.

Although the TRIS regulation refers to the possibility that small children might ingest "surface TRIS" by "mouthing" a garment, the transcript of a closed meeting of the CPSC indicates that this was thrown in for emotional appeal and that the CPSC believed that the principal method of absorption of TRIS would be through the skin. See Pl. Ex. 2, Official Transcript p. 46 (April 4, 1977).

At the ex parte meeting between the EDF and the members of the CPSC on March 8, 1977, Dr. Harris and the EDF's lawyer, Mr. Rauch, argued forcefully for an immediate ban on children's sleepwear containing TRIS based on extrapolation of the NCI data and the skin absorption studies to humans. During the meeting, Commissioner Kushner made several observations which are paricularly pertinent in the light of the CPSC's assertion in the June 1, 1977 republication of its TRIS regulation, that "the evidence supporting the risk of illness presented by TRIS products is overwhelming." 42 Fed. Reg. at 28063.

"Commission KUSHNER: If I can respond to that, to pursue this. Let me say I am really struck by the discussions in this particular area in which we start out by criticizing all of the methods of extrapolation and then saying but let's look at the numbers.

"Once again, there are so many assumptions that are involved here. And it seems to me that the figures there, if we are going to rely on those figures to back the case, are simply not overwhelming. Not only are they not overwhelming, they are not terribly convincing at that level of exposure." Pl. Ex. 9; Official Transcript pp. 29-30.

Chairman Byington likewise referred to the extrapolation of the data as a "numbers game * * * everybody keeps saying that none of the numbers are very good, everybody keeps picking out those they want and throwing out those they don't like." Pl. Ex. 9; Official Transcript p. 46 (March 8, 1977).

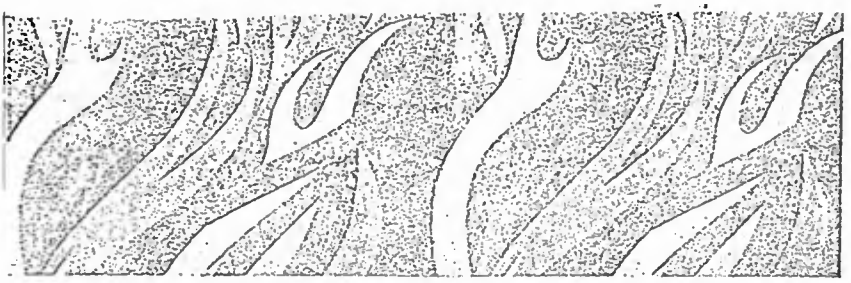
There are other examples, not the least of which is that during the hearing Judge Chapman, ruled that the CPSC "did not make any examination or test of any fabrics, yarns or fibers containing tris, or any children's garments made from such fabrics, yarns of fibers, commercially available on the market for the purpose of determining whether such fabrics, yarns, fibers or garments are hazardous substances or contain a hazardous substance in such a manner as to be susceptible to access by a child." (Requests for Admission paragraph 13(c), (d). Transcript of June 13, 1977 trial, pp. 26-29).

It is my opinion that this recitation clearly shows that the Government forced textile and apparel manufacturers into this debacle against our repeated urgings,

warnings, and pleas. It did so on the basis of burn statistics which are now seriously questioned and with full knowledge that the only chemical which would impart flame resistance to 100 percent polyester was TRIS. Because of the emotional appeal of even one burn injury, pressures caused the standards to be promulgated before a reasonable and risk-related test method could be devised and before manufacturers had proven technologies to comply with Government's demands.

"Now", in the words of Judge Chapman, "another department of the same Government has not only banned TRIS but ordered the repurchase of articles containing it." Moreover, it has done so without notice of a hearing, without a hearing, and without opportunity to cross examine and otherwise test the credibility and validity of evidence.

The actions by CPSC have caused havoc in the children's sleepwear market and generated confusion, lawsuits, and uncertainty. Litigation among the various segments of the fiber/yarn/fabric/apparel industry could go on for years as a result of the CPSC's action. Government should not now be allowed to wash its hands and require the costs of the debacle to be shouldered by the manufacturers, many of whom could be bankrupted, throwing hundreds of people out of work. Government has a financial responsibility and must respond in an adequate and timely manner. ATMI believes that the prompt adoption of S. 1503 by the Congress is the fair and equitable course for the Government to take.



What's Available for Flame-Retardant Textiles

Published directories of flame-retardant chemicals are at best misleading, at worst a disservice to the industry. Here, finally, is an analysis of *commercially available* chemicals *for meeting present and potential government standards*—plus a table of flame-retardant fibers

by R. Bruce LeBlanc
President, LeBlanc Research Corp.

SINCE THE 1967 amendment to the Flammable Fabrics Act, it has been common practice for associations and trade journals to publish tables or directories of flame-retardant chemicals. For example, three pages (59-62) in the 1971 Proceedings of the Information Council on Fabric Flammability are devoted to a table of companies that sell such chemicals, the chemicals they sell, and the fabrics that the chemicals can be used on.

These directories can be misleading to the uninitiated, who may think there is a wide choice of chemicals available for any kind of market where flame-retardant fabrics are required. They may also encourage the uninitiated in the federal government to push for extension of flammability standards to cover more textiles in commerce without getting a true picture of the balance between what the technical possibilities are, what the cost will be, and what good will be accomplished.

The directories are misleading for several other reasons. Most of the chemicals are listed by trade name, with some vague reference to the chemical nature, such as "inorganic" or "mixture." In many cases the chemical nature is the same for products with different trade names. Most of the products listed are temporary treatments, composed of such things as di-ammonium phosphate or borax-boric acid, and they will leach out the first time the fabric is washed. This would be of no help to someone who is in the children's sleepwear business, for example.

Other listed chemicals are merely used in formulations with other chemicals and are almost useless by themselves. For example, PVC latices are listed. They are not very effective alone, but they are very effective in combination with antimony oxide and a reactive phosphorus compound.

Some of the chemicals listed are water-soluble and they may be listed as being durable to dryecleaning. Others are solvent-soluble and may be listed as being durable to laundering. This is not always exactly correct.

No attempt has been made in these directories to suggest what may be available in the line of flame-retardant fibers.

The tables presented here are an attempt at a pragmatic approach to advise the textile and related industries as to what is available for meeting present flammability standards and possible standards in the future.

The tables are small for two reasons: There are only a few commercially available finishes or fibers that will meet even *minimum* laundering and/or drycleaning requirements; and the author has limited listings to those finishes and fibers of which he has personal knowledge.

The chemical nature that is given in the tables for each finish and fiber is based on information gleaned from the literature and the author's experience working with these fibers and finishes.

The tables have to be used with some input from the user as to what is desired in his product. For example, if he is in the children's cotton sleepwear business and hand of the fabric is very important, he would have to choose between Pyrovatex CP, Fyre-Fix, and THPOH-NH_3. Most of the other cotton apparel finishes give a stiffer hand.

All of the finishes listed in *Table I* are applied by a pad-dry-cure-afterwash method. But there are variations in this procedure. For example, the THPOH-NH_3 finish utilizes a chemical cure with gaseous ammonia.

There are not finishes commercially available for all fibers and fiber combinations. In some cases fire-

TABLE 1. Textile Finishes

Market	Fiber	Finish	Chemical Nature	Company	Strong points	Weak points
Apparel	Cotton or Rayon	Pyrovatex CP[1]*	N-methylol dimethyl phosphonopropionamide	Ciba-Geigy Corp.	Durable to over 50 L & TD; soft hand	Strength losses
		THPC-amide[2]	tetrakis (hydroxymethyl) phosphonium chloride	Hooker Chemical Co	Durable to over 50 L & TD	Strength losses; hand
		THPOH-NH_3[3]	see above	Hooker Chemical Co	Durable to over 50 L & TD; soft hand; strength	Lack of resistance to chlorine bleach
		Pyroset TKPI[4]	Mixture of tetrakis (hydroxymethyl) phosphonium phosphate and tris (hydroxymethyl) phosphine oxide	American Cyanamid Co.	Durable to over 50 L & TD	Strength losses; hand
		Fyre-Fix[5]	Phosphonate type	Synthron, Inc.	Durable to over 50 L & TD; soft hand	Strength losses
		MCC 100/200/[6] 300	Phosphoramide derivative	Monsanto Co.	Durable to over 50 L & TD	Cost; hand
	Wool	Proban[7]	Tetrakis (hydroxymethyl) phosphonium chloride and urea pre-polymer	Proban, Ltd.	Durable to laundering and dry-cleaning	
	Polyester	tris [2, 3-dibromopropyl] phosphate [8]	self-evident	Michigan Chemical Co.	Laundering durability	Less durable to dry-cleaning
	Reverse blends of polyester and cotton	THPC[9]	tetrakis (hydroxymethyl) phosphonium chloride	Hooker Chemical Co.		Hand
		Pyroset TKPI[4]	Mixture of tetrakis (hydroxymethyl) phosphonium phosphate and tris (hydroxymethyl) phosphine oxide	American Cyanamid Co.		Hand
	50/50 and 65/35 polyester and cotton blends	Nothing commercially available				
Bed sheets and bedding	All	Same as apparel				

*See references.

retardant fibers are available, and these can be found in *Table 2*.

The tables may not be complete, because the author has limited listings to those finishes and fibers with which he has had personal experience. Companies that have finishes or fibers that could have been included should contact the author so that their fibers or finishes can be included in a future up-date of the tables.

References are given for each of the chemicals listed so that the reader can get more detailed informa-

TABLE 1. Textile Finishes (continued)

Market	Fiber	Finish	Chemical Nature	Company	Strong points	Weak points
Drapery and upholstery fabrics	Cellulosics	Same as apparel if resistance to both laundering and drycleaning is desired				
		Pyrosel CP[10]	Cyanamide and phosphoric acid	American Cyanamid Co.	Low cost; durable to drycleaning	Semi-durable to laundering Strength Losses
		A number of water-soluble non-reactive organic and inorganic compounds	Various chemical compositions	Arkansas Co. Apex Chemical Co.; Laurel Products Co. and others	Low cost; some resistance to drycleaning	Not durable to even one mild laundering
	Wool	Same as for wool apparel				
	Polyester	Same as for polyester apparel				
	Nylon	Nyloset	Thiourea-formaldehyde derivative	Scher Bros. Inc.	Low cost	Stiff hand; semi-durable to laundering and drycleaning
	Cotton and polyester blends	Same as for cotton and polyester blends for apparel				
Industrial and military fabrics	Cotton or rayon	THPC-amide[2]	tetrakis (hydroxymethyl) phosphonium chloride	Hooker Chemical Co.	Very durable to laundering	
		THPC, Sb_2O_3 and PVC[11]	self-evident	Hooker Chemical Co.	Lower cost	Hand
		Pyrosel TKP[4]	mixture of tetrakis (hydroxymethyl) phosphonium phosphate and tris (hydroxymethyl) phosphine oxide	American Cyanamid Co.	Very durable to laundering	
		FYAMR[11]	antimony oxide and chlorinated paraffins	Various	Fire, water, weather, mildew and rot resistant	Hand
Carpet	Cotton	THPC[12]	tetrakis (hydroxymethyl) phosphonium chloride	Hooker Chemical Co.	Meets DOC FF 2-70	
		Pyrosel CP[12]	cyanamide and phosphoric acid	American Cyanamid Co.	Meets DOC FF 2-70	
	Wool	Pyrosel CP[13]	cyanamide and phosphoric acid	American Cyanamid Co.		

tion on the finishes. More information can also be obtained from the author.

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TABLE 2. Flame Retardant Fibers

Fiber	Company	Chemical Nature	Composition of Fabrics	Major Markets
Kynol	Carborundum	Phenolic-based	100% Kynol and blends	Industrial fabrics
Arnel FR	Celanese	Triacetate with organic bromine additive	100% triacetate and blends	Apparel
Saran	Dow Badische	PVC-PVDC fiber	100% Saran	Auto seat covers and others
Nomex	Du Pont	Aromatic nylon	100% Nomex and blends with fibers such as Kynol	Apparel and industrial fabrics
Acele FLR	Du Pont	Acetate with organic bromine additive	100% acetate and blends with up to 18% polyester.	Apparel and others
Orlon FLR Type 775	Du Pont	Modacrylic	—	Apparel
Dacron FLR	Du Pont	Polyester	—	Apparel
Sayfr	FMC Fibers	Acetate with dibromo propyl phosphate additive	100% Sayfr and blends with nylon	Apparel
Avril FR	FMC Fibers	Rayon with a phosphazene additive	100% Avril FR and blends with other fibers	Apparel
Fiber 410 FR	FMC Fibers	Rayon with a phosphazene additive	100% Fiber 410 FR and blends with other fibers such as Nomex	Industrial uses—safety apparel, aircraft upholstery, etc.
Cordelan	Kohjin	Vinal-vinyon bicomstituent	100% Cordelan and blends with up to 25% cotton	Apparel and others
SEF	Monsanto	Modacrylic	100% SEF	Apparel and others
Fiberglas	Owens-Corning	Glass	100% Fiberglas	Curtains and drapes
Verel	Tennessee Eastman	Modacrylic	100% Verel and blends with rayon	Apparel, contract drapery and others
Dynel	Union Carbide	Modacrylic	100% Dynel and blends with rayon	Apparel, contract drapery and others

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What's Available for Flame Retardant Textiles

An updated analysis of commercially available chemicals for meeting present and potential government standards—plus a table of flame-retardant fibers

by Dr. R. Bruce LeBlanc
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THIS IS AN up-date of a similar article by the author published in the February 1973 issue of TEXTILE INDUSTRIES. New finishes and fibers, including semi-commercial and developmental products, have been added to *Tables 1* and *2*. In addition, many more literature references are cited where the reader can find more information on specific products.

For those who might not have read last year's article, these Tables are an attempt at a pragmatic approach to advise the textile and related industries as to what is available for meeting present flammability standards and possible standards in the future. This will hopefully take some of the mystery out of tables of flame retardant products which list hundreds of flame retardant chemicals as being available to the textile industry and which create misunderstandings among industry, government, and consumer groups.

A few explanations of *Tables 1* and *2* may be helpful to the reader. A number of abbreviations are used:

THP—Tetrakis(hydroxymethyl) phosphonium radical

THP salt—Tetrakis(hydroxymethyl)phosphonium salts e.g.,

Tetrakis(hydroxymethyl)phosphonium chloride

TDBPP—Tris (2,3—dibromopropyl) phosphate

TM—Trade-Mark

L & TD—Launderings and Tumble-Dryings

It is also important to point out that, even though there are over ten finishes (that are durable to laundering) listed for cellulosic apparel, over seven are based on tetrakis(hydroxymethyl)phosphonium salts (THP salts) or derivatives of them. For example, there are three different manufacturers of tetrakis(hydroxymethyl)phosphonium chloride and each manufacturer has a different name for the product. Some of these same products are repeated for other fibers and fiber combinations and for other textile markets such as drapery, upholstery, industrial fabrics, etc.

Table 1 lists only finishes which could be used on certain fibers and/or certain markets. Where a fiber or market is not listed, either finishing is not a viable process or else finishing is not required to give fire-retardance. For example: Acrylic fabrics cannot now be finished commercially to give fire-retardance to meet the Children's Sleepwear Standard FF 3-71. But modacrylic fabrics will meet this standard without finishing and are listed in *Table 2*.

Finishes for other fibers such as acetate and triacetate are not listed because there are flame-retardant counterparts for these fibers listed in *Table 2*.

Carpets of most pile yarns can meet the Carpet Standards FF 1-70 and 2-70 by proper construction without the necessity of finishing. Even though wool and cotton carpet finishes are listed, this does not imply that properly constructed wool and cotton carpet will not meet the carpet standards without finishing.

Mattresses can be properly constructed without finishing to meet the Mattress Standard FF 4-72 and therefore no finishes are listed for this market.

TABLE 1. Textile Finishes

Market	Fiber	Finish	Chemical Nature	Company	Strong Points	Remarks
Apparel	Cotton or Rayon	Pyrovatex CP (TM) (1)	N-methylol dimethyl phosphonopropiona-mide	Ciba-Geigy Corp.	Durable to over 50 L & TD; Soft Handle	Reletively high strength losses
		THPC (TM) finishes (2,3,4)	Tetrakis(hydroxy-methyl)phosphonium chloride	Hooker Chemical Co.	Durable to over 50 L & TD	Problems with hand and strength losses
		THP chloride (2)	Tetrakis(hydroxy-methyl)phosphonium chloride	Albright & Wilson (agent in U.S. is Aceto Chem. Co.)	Similar to THPC	Similar to THPC
		Pyroset TKC(2,5)	Tetrakis(hydroxy-methyl)phosphonium chloride	American Cyanamid Co.	Similar to THPC	Similar to THPC; semi-commercial
		Pyroset TKP(5,6)	THP salt with mixed phosphate and acetate enions	American Cyanamid Co.	Similar to Pyroset TKC	Problem with hand; semi-commercial
		Pyroset TKS(5)	THP salt with organic anion	American Cyanamid Co.	Similar to Pyroset TKC; Softer hand	Relatively high strength losses; semi-commercial
		Proban (TM) (7,19)	THP salt-urea pre-condensate	Albright & Wilson (agent in U.S. is Ventron Co.)	Soft handle; Good strength retention	Requires speciel ammoniating equipment
		THPOH-NH_3 (8)	THP Salts at a pH of about 7	All of above manufactur-ers of THP Salts	Soft handle; Good strength retention	Requires special ammoniating equipment
		MCC 100/200/300 (TM) (9,10)	Trimethyl phosphoramide	Monsanto Co.	Dureble to 50 L & TD	Stiff hand; semi-commercial
		E-7176(11)	Condensate of bis (beta-chloroethyl) vinyl phosphonate	Steuffer Chemical Co.	Durable to over 50 L & TD; Some DP properties	Semi-commercial
	Wool	THP Salts	(see above)	(see above)	Durable to laundering and dry-cleaning	
		Proban (TM) (12)	(see above)	(see above)		
		Multi-Krome (TM) (13,14)	Mordanting with Cr, Ti or Zr Salts	Various		
	Polyester	Apex Emulsion 462-5 end 567 (15)	tris(2,3-dibromo propyl)phosphate	Apex Chemical Co.	Durable to over 50 L & TD	Less durable to dry clean-ing; some UV instability

TABLE 1. Textile Finishes (Continued)

Market	Fiber	Finish	Chemical Nature	Company	Strong Points	Remarks
		Tanotard PN 2	tris(2,3-dibromo propyl)phosphate	Chas. S. Tanner Co.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Glo-tard PE-2 and PE-10	tris(2,3 dibromo propyl)phosphate	Glo-Tex Chemicals, Inc.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
	Reverse blends of polyester and cotton	THP Salts(5,16)	(see above)	(see above)		
	50/50 and 65/35 polyester/cotton blends	Pyrovatex 3762 (TM) (17)	Oligomer of THP Chloride	Ciba-Geigy Co.	Durable, to over 50 L & TD	Relatively stiff hand developmental product
Bed sheets and bedclothes	All	Same as apparel				
Drapery and Upholstery Fabrics	Cellulosics	Same as apparel if extensive resistance to both laundering and drycleaning is desired.				
		Pyroset CP (TM) (18)	Cyanamide and phosphoric acid	American Cyanamid Co.	Low cost; durable to dry cleaning	Semi-durable to laundering; Strength losses
		A number of water-soluble non-reactive organic and inorganic compounds	Various, such as phosphate salts and esters, sulfamates, sulfates, dicyandiamide, borax-boric acid, borophosphates, etc.	Arkansas Chem. Co., Apex Chemical Co., Laurel Products Co., U.S. Borax, etc.	Low cost	Not durable to laundering; some resistance to dry cleaning
	Wool	Same as for wool apparel				
	Polyester	Same as for polyester apparel				
	Nylon	Nyloset (TM)	Thiourea-formaldehyde derivative	Schei Bros. Inc.	Low cost	Somewhat stiff hand; Semi-durable to laundering
		Hamcogard (TM)	Thiourea formaldehyde derivative .	Hamilton-Austander Co.	Low cost	Somewhat stiff hand; Semi-durable to laundering
		Celluset (TM) (15)	Thiourea-formaldehyde derivative	Apex Chem. Co.	Low cost	Somewhat stiff hand, Semi-durable to laundering

TABLE 1. Textile Finishes (Continued)

Market	Fiber	Finish	Chemical Nature	Company	Strong Points	Remarks
	Polyester/cotton blends	Same as for polyester/cotton blends for apparel				
Industrial and military fabrics	Cotton or rayon	THP Salts(20)	THP Salts	Hooker, American Cyanamid, Albright & Wilson	Durability to laundering	Some hand and strength loss problems
		FWWMR(20,21)	Sb_2O_3, chlorinated paraffins, etc.	Various	Fire, water, weather, mildew and rot resistant	Stiff hand
	Wool	Multi-Krome (TM) (13,14)	Mordanting with Cr, Ti or Zr Salts	Various		
Carpet	Cotton or rayon	THP Salts (22)	THP Salts	Hooker, American Cyanamid, Albright & Wilson	Meets FF 1-70 and 2-70	
		Pyroset CP (22)	Cyanamide and phosphoric acid	American Cyanamid	Meets FF 1-70 and 2-70	
		MCC 100/200/300 (9)	trimethyl phosphoramide	Monsanto Co.	Meets FF 1-70 and 2-70	
	Wool	Multi-Krome (TM) (20,21)	Mordanting with Cr, Ti or Zr	Various	Meets FF 1-70 and 2-70	
		Pyroset CP (23)	Cyanamide and phosphoric acid	American Cyanamid	Meets FF 1-70 and 2-70	

developed as a dyeing process.

The non-durable or temporary finishes listed in *Table 1* are lumped together in one category without any attempt being made to list the numerous products that fall into this category. They can be used only in specialized markets where they are reapplied each time an article is laundered.

The Tables have to be used with some input from the user as to what is desired in his product. He must pick the best compromise among a number of things—fiber, hand, cost, durability to laundering and dry-cleaning, aesthetics, etc.

The chemical natures of the finishes and fibers in *Tables 1* and *2* are based on information gleaned from the literature and the author's working experience with these finishes and fibers. If there are any glaring errors in the Tables, the author would welcome constructive criticism in order that future updates will be more valuable to the reader.

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TABLE 2. Flame Retardant Fibers

Fiber	Company	Chemical Nature	Composition of Fabrics	Comments and Major Markets
Arnel FLR (TM)	Du Pont	Acetate with TDBPP additive (24)	100% acetate and blends with up to 20% polyester	Apparel
FR Acetate	Celanese	Acetate with TDBPP additive	100% acetate and blends with up to 20% polyester	Apparel
Sayfr (TM)	FMC	Acetate with TDBPP additive (24)	100% acetate and blends with up to 20% polyester (25)	Apparel
Arnel FR (TM)	Celanese	Triacetate with TDBPP additive	Blends with polyester	Apparel
Dacron 489 (TM)	Du Pont	Polyester copolymer with ethoxylated tetrabromobisphenol	100% polyester and blends	Developmental product
HEIM (TM)	Toyobo Co.	Polyester containing aromatic, sulfur-containing phosphonate		Semi-commercial
Exter FR (TM)	Teijin Co.	Bromine containing polyester		Developmental product
Orlon FLR (TM)	Du Pont	Modacrylic		Developmental product
SEF (TM)	Monsanto	Modacrylic	100% SEF and blends with acrylic or polyester	Apparel, drapery, and industrial fabrics
Verel (TM)	Eastman	Modacrylic	100% Verel and blends with rayon or acrylic	Apparel, drapery, carpet and others
Dynel (TM)	Union Carbide	Modacrylic	100% Dynel and blends	Apparel, carpet and others
Leavil (TM)	Montedison	Vinyon	100% Vinyon and blends with polyester or cotton	Apparel, drapery and others
Clevyl I (TM)	Rhone-Poulenc-Textile	Vinyon	100% Vinyon and blends with polyester or cotton	Apparel, drapery, carpet and others

TABLE 2. Flame Retardant Fibers (Con't)

Fiber	Company	Chemical Nature	Composition of Fabrics	Comments and Major Markets
Velon (TM)	Teijin	Vinyon	100% Vinyon and blends with polyester or cotton	Apparel, drapery
Cordelan (TM)	Kohjin Co.	Vinal-Vinyon Matrix	100% Cordelan and blends with up to 20% of cotton or polyester	Apparel
Avril FFR (TM)	FMC	Rayon with a Phosphazene derivative added	100% rayon and blends with fibers such as Nomex	Safety apparel, aircraft upholstery and others; Developmental product
Bell Flame FR (TM)	Kanebo Co.	Rayon with FR additive		Developmental product
Wool		Protein	100% Wool and blends with Fiberglas, Vinyon, Nomex, etc.	Apparel, industrial work clothes, aircraft upholstery and others
Fiberglas (TM)	Owens-Corning	Glass	100% Fiberglas and blends	Drapery, industrial work clothes and others
Nomex (TM)	Du Pont	Aramid (Aromatic Nylon)	100% Nomex and blends with Kynol, Wool, etc.	Apparel, industrial fabrics, airline upholstery
Kynol (TM)	Carborundum	Phenolic-based	100% Kynol and blends	Industrial fabrics, semi-commercial product

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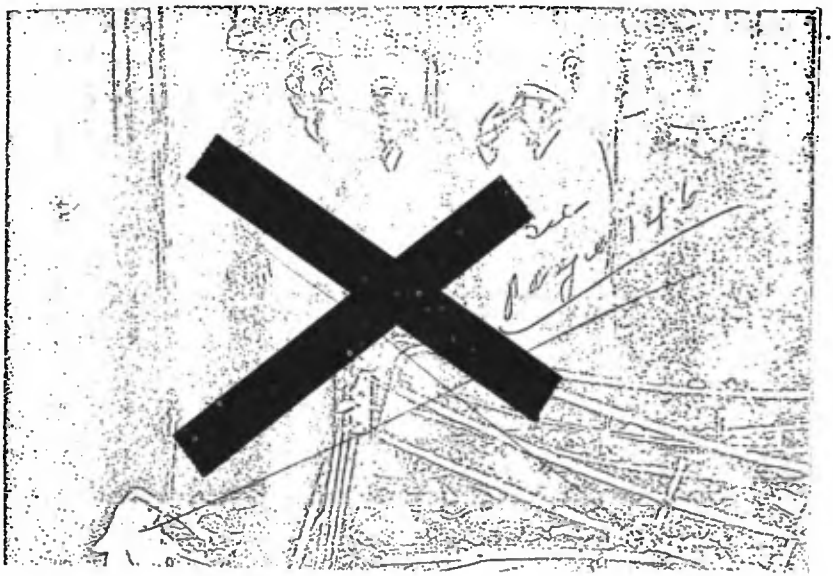


Fire fans furor over flammable fabric

Makers of flame-retardant chemicals and fibers find market stifled by the lack of government standards and fabrics' high price, low consumer appeal

Most fires, no matter how tragic, are quickly forgotten. But not the one at a Marietta, O., nursing home (*photo, above*) that last January claimed 32 lives—caused primarily by inhalation of smoke from burning carpets. It has focused new attention on the complex and vexing problems of flame retardants for textiles, culminating in Senate hearings last week on how the Commerce Dept. and Federal Trade Commission are implementing the Flammable Fabrics Act.

Spurred by the Marietta fire, FTC has issued a flammability standard for large carpets and rugs that must be met by next April. The Dept. of Transportation has proposed flammability standards for materials used in the interiors of passenger cars, multipurpose passenger vehicles, buses and trucks. And standards are being developed for bedding and children's wear.

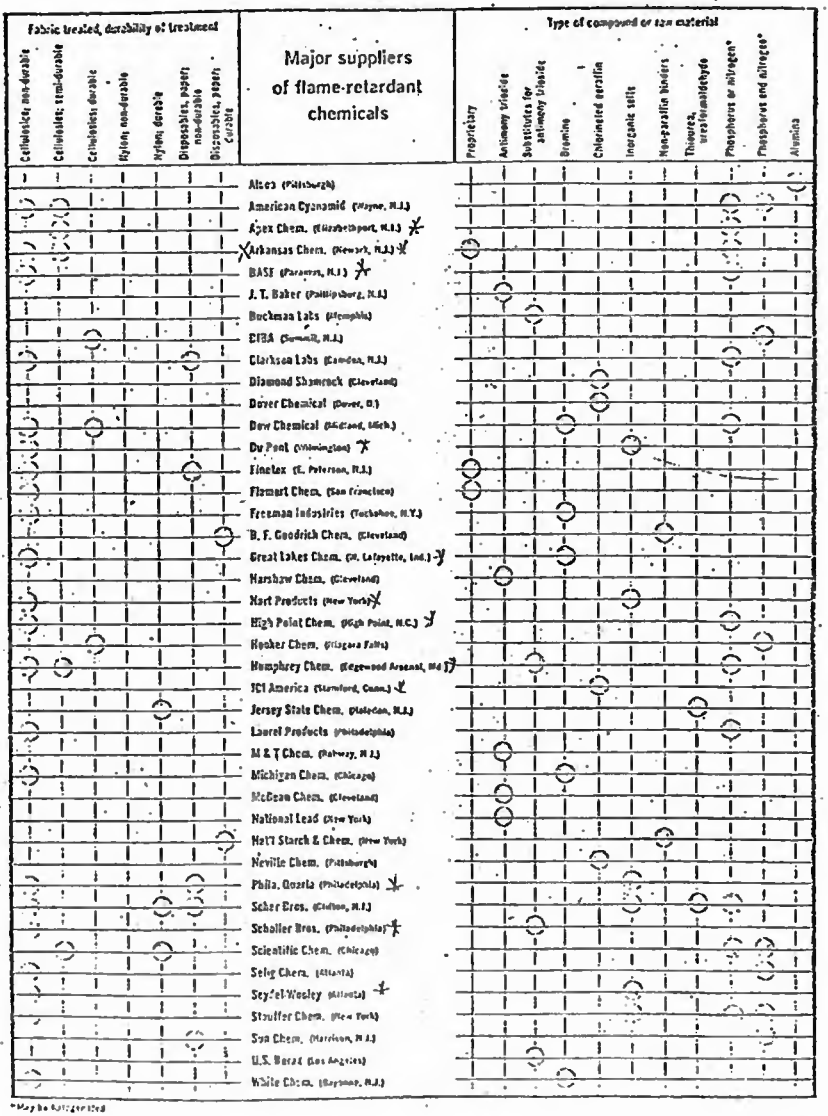
Chemical producers and fiber makers are attacking the problems of flame retardants with work on add-on finishes, graft polymerization and fiber modification.

Yet, measurable results are disappointing so far. As one fiber maker sums it up: "We're like a nervous swimmer at the edge of the pool—dipping a toe in to test the water, but not quite prepared to dive in."

Market figures tell the story. About 10 million lbs. of flame-retardant chemicals—primarily inorganic salts for nondurable FR finishes—will be sold this year. If these chemicals are used at the minimum effective level indicated by most research—about 10% of the fiber weight—roughly 100 million lbs. of fib will be treated, less than 1% of the est mated 10.2 billion lbs. of fiber that wi be consumed in the U.S. in '70.

In fact, National Cotton Council da indicate that more than 600 millio lbs./year of cotton alone would be a fected by the bedding and children wear standards that are now under d velopment.

Standard Sluggishness: A major re son for the sluggish growth of fire-reta dant textiles may be found in the go ernment's slow pace in settin standards. FTC's standard for large ca pets and rugs is the first stemming fro a '67 amendment to the original Flam mable Fabrics Act of 1953. That act h been developed to eliminate sale of e tremely hazardous clothing—e.g., so



*May be halogenated

materials that were being used for women's sweaters were so highly flammable that they exploded into flames in the presence of a lighted match or cigarette. The amendment attempted to update and broaden the act and gave the Secretary of Commerce the authority to issue new standards.

Stiff Problems: However, the slowness of standards development is not the only reason for the small size of the flame-retardant textile market—or its lack of vigorous growth. Producers of FR chemicals for fiber finishes have been having difficulty solving some basic problems. FR finishes tend to stiffen the fabric, some weaken the fiber substrate and many are nondurable, wash out. The durable finishes that have been developed add to cost.

"We can provide the technical effect—the flammability protection. But if the fabric is not within the esthetics or price limit demanded by the consumer, she simply won't buy it," says one researcher.

For example, Sears and Montgomery Ward both offer treated children's nightwear. Prices are about $1 more than for untreated garments. (Most treated garments cost about 25% more than comparable nontreated ones.) And neither company has reported many sales.

British experience with treated fabrics is similar. As a result of Britain's Consumer Protection Act of '64, many shops stopped selling all-cotton or rayon children's nightdresses, which had to be treated. Instead, they are selling pajamas, which are not covered by the act. And treated yardgoods, even when offered at the same price as untreated cloth, are bypassed by consumers because the untreated materials feel softer.

Most Vulnerable: Cotton is particularly vulnerable to the effects of fabric stiffness. Unlike synthetics, which can be modified to improve fire-retardant properties, cotton must find protection provided by add-on finishes—usually to the tune of 20-30% of fabric weight. And some finishes produce other undesirable side effects: lessening of wear resistance; dyeing difficulties; discoloration.

The most commonly used cotton finishes are inorganic salts, organic compounds or combinations of both. Included in this group: aluminum sulfate, ammonium phosphates and sulfamate, antimony chloride and trioxide, borax and boric acid, titanium oxychloride, dicyandiamide and thiourea. And chemical suppliers are numerous (*see table, p. 142*).

These finishes, often applied with latex binders, are usually inexpensive (average about 20¢/lb.). But they wash out, thus are used extensively for drapes in public buildings, for theater curtains, mattress ticking and institutional carpets. State and local fire regulations have improved sales of these finishes.

Brominated compounds—e.g., dibromopropanol, ammonium bromide, hexabromobiphenyl, tris(2, 3-dibromopropyl)phosphate—are also being touted for this market. Suppliers include Dow Chemical, Michigan Chemical, Great Lakes Chemical, White Chemical and Freeman Industries.

Semidurable finishes that withstand about five launderings or dryclеanings include American Cyanamid's dicyandiamide-phosphoric acid and Apex Chemical's organic brominated phosphates. Apex also produces inorganic-organic combinations durable to drycleaning, but not to laundering.

Also making the semidurable materials: Scientific Chemicals, which markets phosphorus-nitrogen compounds, and Arkansas Chemical.

In the Wash: The most successful of the durable finishes—those that last through as many as 50 washings—are probably those produced by Hooker Chemical and Ciba.

Hooker's finish system is based on tetrakis(hydroxymethyl)phosphonium chloride, trademarked THPC. Much of the development work was done by the U.S. Dept. of Agriculture's Southern Research Labs (New Orleans). THPC is ammonia-cured, forms an insoluble fire-retardant polymer, which Hooker says remains inside the fibers for the life of the fabric. Cost: 20-30¢/lb. of fabric. Most promising market: industrial clothing, tent liners, mattress ticking and drapery material.

A recent extension of THPC technology has produced another treatment system. It uses the hydroxy-substituted form (THPOH), is also ammonia-cured. THPOH is less expensive than THPC. It can be used at 15-20% of fabric weight, rather than 25%, as with THPC, to further reduce cost.

Moreover, the lesser amount needed for treatment also reduces fabric stiffness. Hooker suggests uses in ordinary garment fabrics, and in knit goods for children's and adult's wear.

Ciba's product is Pyrovatex CP, chemically, N-methyl dialkyl phosphonopropionamide. Fabric treated with 25-35% by weight is said to produce a result that is nearly indistinguishable from untreated cotton in stiffness. And fabric durability is essentially unchanged. Cost: about $1/lb. Use: in garment fabrics, particularly for children's nightwear.

Dow marketed a durable finish for cottons, tris(1-aziridinyl)phosphine oxide (APO). But it has been withdrawn for lack of markets. Drawbacks included high cost and toxicity.

Other durable finishes are offered for noncotton items. For example, Scher Bros. and Jersey State Chemical market thiourea and urea-formaldehyde resins for nylon netting and tulle used for wedding gowns, window decorations, etc.

Military Use: Until this year, the lion's share of durable-finish treatment has gone into fabrics for the military, where high cost is not necessarily a drawback. More than 50 million yds. of cotton, mostly duck for tents and tarpaulins, were processed in '67. But military procurement has dropped sharply in the last two years because of the reduction of forces in Vietnam.

The finish used for the military is based on antimony trioxide and chlorinated paraffins, such as those produced by Dover Chemical, Diamond Shamrock, ICI America and Neville Chemical. The finish resists fire, water weather and mildew. But FR producers point out that all the treated fabric come out feeling like a tent, which limits the use of the finish primarily to tentage, carpet backing and outdoor sporting goods.

Antimony oxide is also used with some halogenated semi- or non-durable finishes for synergistic effect. Combinations with halogens are considered among the most effective FR systems yet devised. And until the past year, they were among the least expensive. But China has removed its antimony—from 25 to 50% of world supply—from the marketplace. Prices in the U.S. have risen from 43¢/lb. in '68 to the present quoted price of $1.07. (Unofficial prices are as high as $1.67/lb.)

One M & T Chemical executive has called the shutoff "a disaster," his com-

pany is now quoting monthly prices. July's price: $2.48/lb.

Harshaw Chemical and McGean Chemical are supplying regular customers, but do not plan to go after new business. And National Lead's Metal Division marketing manager, Robert Putney, foresees little price settling despite the government's release of 6,000 tons of antimony metal from stockpiles.

This has increased demand for substitutes. For example, Buckman Labs makes Busan-11 M-1, a modified barium metaborate. The company says sales have gone up, but will not indicate how much. It's being used on cottons, also in a carpet-backing coating developed by Dover Chemical.

U.S. Borax is marketing a zinc borate, called Firebrake, and sodium polyborate, tagged FR-23. Borax says there has been "substantial interest in our zinc" as a replacement for antimony trioxide.

For Throw-aways, Too: Finishes for cotton and rayon can usually be used for disposable items. As one papermaker says, "Basically a wood fiber has the same physical properties as cotton." These finishes include the nondurable inorganic salts and nitrogen-phosphurus compounds, at about 25-45¢/lb., from companies such as Sun Chemical, Clarkson Labs, and Scher Bros.

For disposables and paper products that require more durable finishes, National Starch and Chemical and B.F. Goodrich Chemical are marketing phosphate polymer binders that are used for resin saturation. Some are halogenated, used with antimony oxide.

Grafting Research: Graft polymerization is a new technique, still in the research stage, that may have some advantages over currently used add-on finishes. Says one Scott Paper Co. researcher: "In forming a chemical linkage, the durability of the flame retardant is improved, and we retain the strength of the fiber substrate. Also, new fibers can be engineered from the original ones."

Early this year, Scott and American Enka began a joint project for graft polymerization of flame-retardant compounds onto cellulosic fibers. Enka is currently equipping a pilot plant for use of Scott's process.

In the process, the hydroxyl groups of the cellulose are activated (dithiocarboxation)—although not to the extent required for xanthation of rayon. The activated substrate is mixed with a peroxide catalyst and the flame-retardant monomer (e.g., a phosphated or halogenated compound). Polymerization of the monomer and grafting to the substrate proceed simultaneously. During the reaction the pH drops, the dithiocarbonate groups are destroyed, and the cellulose is regenerated.

Scott says the process works on all cellulosics, and on silk, nylon and wool (wherever there is an active hydrogen atom in the polymer). Other properties—e.g., bulk and resiliency—can be built in by using selected grafting compounds.

Another method of grafting has been developed by New York University researchers. NYU's substrate is polypropylene. The graft is a copolymer: N-methylolacrylamide and Stauffer Chemical Co.'s bis(beta-chloroethyl)vinylphosphonate.

One drawback: the N-methylolacrylamide is said to stiffen the hand (feel) of the fabric because 20-30% by fabric weight is required.

Modifying Synthetics: While cotton can't be modified for inherent flame retardance, synthetic fibers can. And that's the ideal solution, according to most fiber makers, chemical suppliers and textile houses.

Fiber manufacturers, though, are reluctant to discuss development programs, or even their involvement with flame retardance. Allied Chemical's fibers division, for example, says flatly, "We would rather not comment on the subject."

A chemical-finish supplier offers one possible reason: "Fiber makers are up against the wall. They can make fire-resistant synthetic fibers, but the mills might not be able to process them with existing equipment. And even if they could, with a couple of exceptions, the consumer just wouldn't buy the fabrics produced—they'd be far too stiff, bulky, and expensive."

Fibers that are being produced and marketed include Du Pont's Nomex nylon, American Viscose's PFR (permanent flame retardant) rayon, Monsanto's Durette and Carborundum's Kynol. Glass fibers or glass-synthetic fiber blends are also in the picture.

Du Pont's Nomex was first on the market, has the largest share. An aromatic polyamide nylon, it insulates to 400 C without burning; at that point it chars. Used in suits for racing drivers, it's said to afford about 11 seconds of protection in the event of an intense gasoline fire. (This, the company feels, is sufficient time for the driver to get out of the car.)

Other uses: institutional and consumer work clothes, mattress covers. One of the most important markets is pajamas, now being used by the Veterans Administration in its hospitals. Smokers were the first to get the pajamas. The VA plans to provide them for all patients eventually. It is also test-

ing sheets, blankets, robes of Nomex.

Primary drawback to Nomex is cost: $3.50-6.50/lb. This results in prices four to five times those of comparable items (e.g., of polyester). But Du Pont contends that Nomex will usually outwear other materials, so that on a per-wear basis it is cheaper.

Durette, Monsanto's fire-resistant fiber, is also an aromatic polyamide. Monsanto won't divulge composition, but it's probably similar to Nomex. It's also being aimed at high-risk markets—racing driver uniforms, for example, which average $150 each.

Carborundum's Kynol fibers are phenolics, said to resist temperatures up to 4,500 F. Last month, Carborundum introduced a Kynol liner for racing suits, which it says extends several fold the protection time offered by fabrics such as Nomex.

Carborundum is also touting its fibers for upholstery fabric in aircraft, hospitals, hotels and automobiles, and for cold-weather clothing for fishermen, hunters, skiers and snowmobilers.

Rugged Rayon: American Viscose, division of FMC Corp., has marketed its PFR rayon since late '67. It's made by dispersing fine droplets of water-insoluble flame retardants (generally, a mixed-propyl ester of phosphonitrilic chloride) into a viscose solution. When the rayon fibers are drawn, the FR is encapsulated in a cellulose matrix. Says FMC, there is little change in the fiber's physical properties, and the flame retardancy is "permanently locked in."

Again, price has helped keep demand down. When it was introduced, for example, it was 45¢/lb., conventional rayon about 30¢/lb. The PFR had been in commercial use for only a short time. Orinoka Mills is now using the fiber in blends with Nomex for aircraft upholstery. Orinoka says it helps lower the cost of the Nomex, from $15-16/sq. yd. to about $11-12 for blends.

Other Solutions: Still another answer to the problem of flammability: glass it in. Latest development in this field: Coortaulds Ltd.'s new Teklan Heat Shield fabric. It's a blend of modacrylic fiber and Owens-Corning's Beta Fiberglas core, spun and woven so the glass doesn't touch the skin, cause irritation. It's going into garments for steel mills, fire fighting, auto racing and other high risk occupations, and into nonapparel uses such as filtration units and aircraft escape chutes. It's been particularly successful for chemical workers, says Courtaulds, because it prevents chemical penetration.

Possibilities for flame-retarding polyester and acrylic fibers are offered by Dow. The company says a vinyl bromide (for acrylic fibers), and dibromoneopentyl glycol (for polyesters) alter the structures to make them permanently flame retardant without sacrificing hand, durability, or dyeability.

Blending Problems: Cottons can be treated with flame-retardant finishes; synthetics can be modified. But blends cause headaches. Example: in cotton-polyester, the polyester melts and falls away from a flame, is therefore considered self-extinguishing. But in blends, the cellulose forms a "ladder" that supports the polyester. Untreated cotton-polyester burns more readily than either unblended fiber. Blends with treated cotton lose effectiveness as the polyester content is increased to about 15%; at that level, flame-retardant characteristics are essentially lost.

And flame-retardant treatment of the blend has proved unsatisfactory because as yet no material has been found that will durably flameproof combinations of cotton and synthetics.

There is also room for continued research toward finding permanent add-on finishes that will impart satisfactory characteristics to natural and synthetic fibers, as well as blends. One reason: fiber makers could not economically afford to develop flame-retardant polymers to fit every end-use situation.

Slow Growth: Few fiber makers or FR chemical suppliers see widespread use of flame-retardant fabrics within the next 5-10 years because of the many problems involved.

Carpets will be an exception, in part the result of the new standard. But there is already a trend to synthetic-fiber carpets—and flame retardance is not generally a problem with synthetics because most melt away from a flame. Acrylics do not, but primarily due to the use of bicomponent melts, flame-retardant properties have been greatly improved.

For example, Monsanto's Acrilan 71 carpet fiber is made by spinning a multilayer stream of two acrylic components. The company says the fiber has built-in flame retardance: the use of additives (possibly vinyl bromide), which reduce combustion rate to about the level of wool's.

Moreover, carpet and fiber makers are spurred by the prospect of new standard being amended to include a more stringent test procedure. Many point out that the carpet used in the Marietta nursing home would have passed the present test. And FTC says the present test should be considered a "first generation" one.

The procedure, called a tablet test, uses a methenamine tablet. A dry carpet sample is held in place by a steel plate with an 8-in. diameter hole in the center. The tablet is placed in the center of the open area and ignited. A carpet fails if, in more than one of eight test runs, burning proceeds to within an inch of the plate.

The Carpet and Rug Institute proposes amending the test by having the methenamine tablet burned on both sides of the carpet. This would eliminate the use of potentially hazardous backing materials, the institute contends.

Many opponents of the tablet test opt for the "tunnel" test specified by the Hill-Burton Act controlling federal funds to hospitals. In this test, which measures the rate of fire propagation, a carpet sample is cemented to an asbestos-cement board on the ceiling of a 25-ft.-long furnace. A gasoline fire is introduced at one end, and the time for the fire to progress down the tunnel is measured.

More Than One: The controversy over tests carries into other fabric areas as well. The basic test outlined by the Flammable Fabrics Act of 1953 calls for the igniting of the lower end of a fabric swatch placed in a frame at a 45-degree angle.

"We run this test only on very lightweight or sheet fabrics that may be questionable. Most cottons will pass—we know that. And we don't bother to test wool because there's hardly anything you can do to wool to make it not pass," says the director of testing labs for a major chain store.

Fabrics carrying a "flame-retarded" claim must pass a more stringent test. A Bunsen burner is held beneath a vertical swatch; the cloth can char, but must not burn.

Neither test is satisfactory to most textile makers or the National Bureau of Standards. But no one has come up with anything better—although NBS, the American Society for Testing Materials and textile houses are all researching new procedures. END

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The Present Status of Fire Retardance

By R. BRUCE LeBLANC, National Cotton Council of America, Memphis, Tenn.

ABSTRACT

The present fire retardant finishes for fabrics are reviewed. These have for the most part been designed for cotton fabrics, but will usually be somewhat effective on rayon fabrics.

There are no commercially-used methods for chemically finishing the flammable, thermoplastic synthetic fabrics to achieve durable flame retardant properties.

Test methods and standards are also discussed, especially with respect to textile standards on children's apparel.

Past and present markets for fire retardant fabrics have been small. Potential markets could be very large if standards become more restrictive.

KEY WORD INDEX

Cotton
Finishing
Flameproofing Agents
Flammability
Man-Made Fibers
Standards
Testing

FIRE retardant finishes for cotton fabrics have been known for about two hundred years. In the past twenty years, a great deal of progress has been made in developing fire retardant finishes for cotton fabrics which are durable to laundering and have acceptable esthetics. The finishes that achieved some commercial significance are the various THPC finishes (*1*), the APO-thiourea finish (*2, 3*) and the Pyrovatex CP finish (*4*).

Much work is being done by various groups on new fire retardant finishes for cotton which give improved hand, simultaneous durable press properties, lower cost, etc. Recently, the USDA Southern Regional Laboratory has reported on their new THPOH finishes (*5, 6*), some new Cotton Producers' Institute finishes were reported at the recent Chenfical Finishing Conference (*7*), and several chemical companies have announced that they are working on durable fire retardant finishes.

In general, the finishes that have worked on cotton can be used on rayon, but usually a higher add-on is required for rayon. Fire retardant rayon fiber is commercially available at a rather high premium, but is little used at present. It evidently contains around 20% of a phosphazene derivative (*8*).

A finish composed of THPC and *tris* (dibromopropyl) phosphate has been reported for polyester-cotton fabric (*9*). The THPC is effective on cotton and the dibromopropyl phosphate on the polyester. This finish has not been used commercially.

A few synthetic fibers are considered to be inherently fire retardant, such as the modacrylics, saran and some aromatic nylons. These have been used in markets where standards require some degree of fire retardance, such as certain draperies, upholstery fabrics and carpets.

There are no commercially-used methods for the chemical finishing of the bulk of the thermo-plastic synthetic fibers to make them non-flammable (*10*). Textile fiber producers are reported to be on the brink of developing flame resistant versions of these fibers via the additive route (*11*). Besides the premium in price for these fibers, there is a feeling among many technical people that there will be a loss in many of the desirable properties of synthetics if a fire retardant additive is included in the fiber when it is spun.

Test Methods And Standards

In 1953, the Federal Flammable Fabrics Act eliminated the most dangerous flammable fabrics from clothing in interstate commerce. The flammability of fabrics is determined by CS-191 which is equivalent to AATCC 33-1962. At the time of this act, the standards were set so that the torch sweaters, the rayon pile cowboy chaps and other highly flammable articles of clothing were eliminated.

In the 1967 revision of the 1953 act, provisions were extended to include household textiles and it empowered the Secretary of Commerce to establish new standards if the need were demonstrated. Since that time the commerce department has found that new standards may be needed in carpets and wearing apparel. Standards for carpets may be proposed before the end of 1969*. Standards for chil-

* See TEXTILE CHEMIST AND COLORIST, Vol. 2, 1970, p13 for the complete text of the proposed standard—Ed.

dren's apparel (which may be the first apparel items for new standards) will take longer to develop.

Many consumer representatives and others are collecting and reporting statistics on burn accidents. Some have been rather unscientific, such as a recent report on an analysis of the type of clothing worn by burned children. The analysis consisted of asking the parent or guardian of the burned child what was the fiber content of the burned garment (*12*).

Spokesmen for the various segments of the textile industry are volunteering for committee work in various test methods and standards organizations so that they can guide the adoption of test methods and standards which do not show their product in an unsatisfactory light.

It has been reported that of 117 garments involved in burn accidents, all easily passed CS-191 even when ignition was forced (*13*). In spite of this there are many people in the textile and fiber industries who are suggesting standards based on some modification of the CS-191, such as requiring forced ignition. Some are recommending against flame tests. One of their arguments is that if a standard such as the AATCC 34-1969 (vertical flame test) is used as a standard, it would eliminate most of our present textile products.

But if one looks at this problem of standards logically, there are several things which are apparent:

- Government and consumer groups feel that present standards of flammability are inadequate.
- Many groups feel that at least children and old people should be protected from having their clothing ignited by open flames even when due to negligence.
- More restrictive standards are forthcoming according to the Commerce Department.
- As a consequence in certain markets, textiles barely passing present standards will be eliminated and replaced by textiles meeting the more restrictive standards.

Once one faces up to these four points, it may be easier to agree on standards. If standards are agreed on, which are more restrictive in certain markets where it is felt that they are needed (i. e., children's apparel), possibly the standards in other markets will not be so restrictive.

If children's clothing can burn and cause injury and death, making the CS-191 standard more severe (such as a change from 3.5 seconds to 10 seconds) will not significantly reduce these injuries and deaths. Of 117 garments involved in burn accidents, over half did not ignite in the test and the rest had an average burn time of over 14 seconds (*13*). If a more restrictive standard is needed, it is not logical that it be a rate-of-burning standard such as a modified CS-191. It should be a burn/no burn one, such as one based on the AATCC 34-1969 (vertical flame test) for children's wear.

Before we can have new standards of fire resistance in textile fabrics, we need to have good test methods on which to base them. An example of legislation which put new standards of fire resistance on textile products before adequate test methods were available is illustrated by the recent regulations in England. In 1964, the Children's Nightdress Regulations went into effect which required that all children's nightdresses be flame-retardant according to British Standards BS 2963 and BS 3121. These British standards were designed for treated cotton, but the test method was not restricted to treated cotton (*14, 15*). At the time the legislation was passed, there was really only one flame retardant treatment for cotton that was adequate—one based on THPC, called Proban. This finish would render cotton flame retardant so that it would not propagate flame at all. Brushed nylon of much lighter weight than the flannelette normally used for nightdresses could be produced at about the same price as the Proban-treated cotton. Since the test method was designed for treated cotton, flammable, thermoplastic synthetic fabrics should not have been tested by this method because they burn in a different way from cotton—particularly they melt as well as burn (*14, 16*). A consumer group in England tested some garments both by the BS 3121 (a vertical strip test) and by holding a flame to the bottom hem of the garments draped on wire frames. They found that certain nylon garments pass BS 3121, but burn completely when tested in garment form (*17*). There is a committee working on revising of the British Fire Resistance test methods to make them more generally applicable and reproducible (*18*).

Table I—Heats of Combustion of Various Fibers

Fiber	Heat of Combustion (BTU/LB)
Cotton or Rayon	7,400
Acetate	7,700
Polyester	9,300
Nylon	12,550
Acrylic	13,000
Spandex	13,500

In the U.S., we have the British experience to prevent us, hopefully, from making a similar mistake. We should make sure that we have adequate test methods for any standard that is put into effect.

Until just recently, we have not had a good test method to measure the flammability of thermoplastic fabrics. The vertical flame test designed for treated cotton would not really distinguish between something like Nomex, which is a fire resistant nylon, and ordinary nylon. During 1969 the AATCC has approved a modified vertical flame test method for thermoplastic fabrics (*19*). This modified vertical flame test will distinguish between fibers like Nomex and ordinary nylon, and between Nomex and polyester, between the modacrylics and polyester or nylon. In this one test at least, we are better prepared than were the British for new standards.

But this is not the only thing that is important in new standards. The commerce department has found that the present standard is inadequate because of "lack of provision for measurement of characteristics, such as melting, dripping, disintegrating into flaming brands" (*20*). Obviously, we do not have test methods to measure these properties. So it would behoove the government to go slow on standards involving these properties until adequate test methods have been developed. The AATCC Research Committee RA-46 is working on test methods to measure these properties (*21*).

The commerce department has al-

Market Area	Linear Yards of FR Cotton Fabrics Finished (Millions of Yards) 1967	1968
Finished FR Finished Fabrics	50	8
Other Durable Military Fabrics	12-15	2-3
Non-Military Fabrics	2-3	2-3

fact that a technical inadequacy of the existing standard is lack of quantitative measure of flame intensity, heat generation or heat transfer (*10*). Heats of combustion are known for the various fibers of commerce. The heats of combustion of the most common fibers are given in Table I (*22*).

Table I shows that the heats of combustion of the thermoplastic fibers, such as polyester, nylon and acrylic are higher than the non-thermoplastic fibers, cotton and rayon. For fabrics which have a self-extinguishing property, the difference in heat of combustion will be less important, but without a fire retardant treatment all of the above fibers are flammable.

Markets for Fire Retardant Fabrics

The markets for fire retardant treated fabrics have been variable for a number of years because military purchasing, the chief market, has been variable. Table II illustrates this variability.

The downward trend in military purchasing is continuing into 1969. The non-military market has increased in 1969. A good part of this increase is accounted for by about 2-3 million yards of flannelette containing a modification of CIBA's Pyrovatex CP finish going to children's nightwear sold by about two large retail firms.

The sorts of markets that presently exist would not encourage one to spend much money on research for new fire retardant finishes. Table III, however, lists some markets that may possibly come under more restrictive fire retardant standards.

Table III gives a clear picture of what can be the future of fire retardant fabrics. For example, only about 1% of the children's nightwear in this country can presently be called truly fire retardant.

Conclusion

There are several conclusions I would like to draw:

- The textile industry faces the possibility of more restrictive standards of flammability which could affect over four billion yards of fabric.
- Test methods exist which can measure fire retardance of both non-thermoplastic and thermoplastic fabrics.
- Methods are lacking for measurement of melting, dripping disintegrating into flaming brands, flame intensity, heat generation and heat transfer.
- The problem of greater safety in [illegible] tardant fiber or finish, This fiber or finish should meet both the esthetic and the economic requirements of this market.

Table III—Potential Markets (24)

1968 Markets	Square Yards (Millions)
Automotive fabrics	285
Children's nightwear	235
Children's playclothes	245
Bedding and bedclothes	2,371
Curtains, drapery, and upholstery fabrics	1,457

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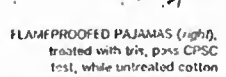

FLAMEPROOFED PAJAMAS (*right*), treated with tris, pass CPSC test, while untreated cotton pajamas (*left*) go up in flames under exposure to propane torch.

Markets for tris burned by new tests

NCI cancer study is halting use of chemical for fabrics

In 1972, the Consumer Product Safety Commission came up with flammability standards for children's sleepwear. In response, the chemical industry came up with tris 2,3-dibromopropyl phosphate (commonly known as tris), a substance the Environmental Protection Agency's Office of Toxic Substances called the most economical and convenient solution to the flammability problem.

But now, CPSC is on the brink of banning this use of tris because of positive mutagenicity tests with bacteria and a two-year feeding study commissioned by the National Cancer Institute, which seems to indicate that the material is carcinogenic.

The raw data from the NCI study were released last month by the Environmental Defense Fund (*CW, Feb. 16, p. 20*). EDF had called upon CPSC to require that tris-treated fabrics be washed three times before use; now the group favors an outright ban. CPSC says it will wait until the NCI report has been completed, perhaps by mid-March, before taking action.

Market Hurting: Meanwhile, some $50 million worth of sleepwear treated with tris is on the market—although it is probably unsellable.

Velsicol, major supplier of tris for fabrics, has announced it is dropping out of production of tris for the apparel market. Stauffer, one of the major makers of tris for rigid and flexible urethane foam, informed its customers late last month that it is dropping out of tris production entirely. And Great Lakes Chemical, the third major tris supplier, is using an outside consultant to study the raw NCI test data before it makes a decision on continuing to offer the product.

With tris in jeopardy, some substitutes are being developed, but none now seems to be as broadly applicable or as economical. Moreover the voluntary effort to extend flameproofing to garments other than childrens' pajamas has suffered a severe setback. And, more basic to the future development of new chemicals, are the questions industry must ask after having developed a cheap, effective material to meet a regulated need—only to be charged with exposing children to a potential carcinogen.

Dropouts: The recent dropouts from the tris trade have been pondering that decision for almost a year. "Since the positive results on the Ames test in March, 1976, were reported, there has been considerable concern over use of the chemical in the textile trade," reports Raymond Bilski, business manager for Stauffer's booming flame retardant chemicals business.

The so-called Ames test—named after its originator Bruce Ames of the University of California (Berkeley)—has been widely applied as a mutagenic screen that could identify possible carcinogens. In the test, a specific breed of salmonella strain bacteria is exposed to the chemical. Development of mutagenic strains under these conditions has been closely correlated to chemicals that are carcinogenic.

There has been some controversy over this test, although several chemical companies are actively using it as a screen to chemicals that must undergo more extensive testing. Recently more sophisticated short-term screening tests, using animal tissues, have been developed.

Researchers at New York Medical College (Valhalla, N.Y.) reported in *Science* (January 7) on tests exposing salmonella to tris washed from fabrics. They had been attracted to tris because it has structural properties similar to two other classes of mutagens: it's a trialkyl phosphate as well as an alkyl bromide. Results of the mutagenicity test on tris were positive. But the researchers warn that "our results do not conclusively demonstrate that tris is a cancer-causing agent."

They call for "additional data on the possible oral and dermal absorption of the chemical from fabric as well as data on whether or not tris or its active metabolites, once absorbed, can reach germinal tissue" before the hazard in sleepwear can be evaluated.

Outrageous Example: The Environmental Defense Fund thinks the raw data from the NCI study is enough to make an evaluation about tris' cancer causing potential. EDF's Robert Harris called it, "the most outrageous example I've ever seen of involuntary human exposure," and urged CPSC to ban its use in fabrics.

The NCI study, conducted at Mason Research Institute (Rockville, Md.), used the standard NCI protocol lifetime test, putting tris in the feed of rats and mice over a two-year period. Histopathology (examination of the animals' tissues) is complete, but data are still undergoing statistical analysis.

NCI expects a report on the test program to be out within two weeks. EDF obtained the data under the Freedom of Information Act. EDF earlier petitioned CPSC seeking a warning label on tris-treated sleepwear and a caution to wash

the garment three times before use.

Tris, which can make up 10-20%, by weight, of the polyester, acetate or triacetate fiber, is applied by swelling the fibers so that the chemical can penetrate. When the fiber cools, the chemical flameproofer is locked in. EDF reasoned that the material that wasn't locked in could be washed out and thus prevent the hazard exposure. But the New York Medical College study indicated some mutagenic activity in the extracts from the fabric after three cycles of laundering.

In any case, EDF has dropped the washing petition in favor of a complete ban. There has been some quibbling with the environmental group's interpretation of the NCI data. But NCI itself doesn't appear to quibble. "They didn't distort the data," says Melva Weber of NCI's bioassay group. "The data was so strongly positive that the final analysis will certainly show evidence of carcinogenicity," she says.

In The Beginning: The growth of the market for flame retardant chemicals began with the enactment of the Flammable Fabrics Act in 1953. A general wearing apparel standard was established in 1954 to keep highly flammable apparel like brushed rayon sweaters off the marketplace. The act was amended in 1967 to allow flammability standards to be set for other products.

The first children's sleepwear standards, for sizes 0 to 6X, became effective July 28, 1972. CPSC was established that same year. Standards for childrens' sleepwear sizes 7-14 became effective on May 1, 1975. These standards were similar to those for smaller pajamas but less stringent. And CPSC is now establishing uniform federal standards for upholstered furniture and tents.

Result of all this emphasis on flameproofing has been a boom in flame retardant chemicals. In 1971 some 175 million lbs. of flame retardant compounds were produced. In 1975, that amount climbed to more than 300 million lbs. and is expected to reach 500 million lbs. by 1980. Most of that, almost two-thirds, is inorganic material such as alumina trihydrate and antimony oxide, used in carpets.

Before federal standards were established, Sears tried, in the late 1960s to market treated sleepwear. But the garments, which were more expensive than regular ones and had an unpleasant texture and odor, sold poorly. Sears abandoned the effort.

The regulations also affected the kinds of fabrics used in children's sleepwear. In 1971, 56% of it was cotton and 27% cotton-polyester blends. By 1975, 87% of children's sleepwear was made of synthetics. Cotton, which couldn't be impregnated with flameproofing compound, had suffered a market loss.

But the market for flameproofing chemicals in children's sleepwear never was huge. One estimate puts it at 5-7 million lbs./year at its 1975 peak. That has since dropped to less than 1 million lbs./year. And Velsicol says tris for children's pajamas had become only an $400,000/year business for the company.

Hazard Data: One question is, has the use of the chemical caused a decrease in burns and death to children? The answer is hard to get. The Shriners Burns Institute in Galveston, Tex., reports treating some 100 cases per year of burned children before 1972, about 25% from sleepwear. They have no good statistics since then but claim the number of cases has been "fewer."

The National Electronics Injury Surveillance system is not geared to provide data on exactly what a burn victim may have been wearing. And even if the burns are clothing-related, reports do not give data on whether or not the garments had been flameproofed.

A 1972 Food and Drug Administration report states that about 200,000 burn injuries and 400 deaths are associated each year with flammable fabrics, but a recent report for the National Advisory Committee for the Flammable Fabric Act suggests these numbers may be 10 times too high. The latter report estimates that 20% of these burn injuries and deaths could be associated with children's nightwear, injuries and deaths that could have been prevented with flameproofing.

Test Of Fire: Measure of a material's flameproofing quality is determined by how it does in standard tests devised by CPSC. Children's sleepwear fabric exposed to a gas flame along its bottom edge for 3 seconds is required to exhibit a char length of no greater than 7 in. The fabric must be bone dry (desiccated in a 105 C oven for 1 hour and cooled) before the flame test.

This last requirement prevents wool, which is inherently fire resistant, from meeting the standard. Reason: wool, like cotton, has high moisture content. Moreover, the peculiarities of the standards have prevented the use of 100% polyester without flame retardant. Polyester doesn't support burning easily. But the material melts and carries flame in its "drips." These drips, part of CPSC measurement, keep polyester off the flame-retardant approved list.

Sara Policu, director of the burn prevention division of the Shriners Burns Institute, says the tests do not reflect real-life situations. As a member of the National Advisory Committee for the Flammable Fabric Act she has been promoting her idea of revised sleepwear standards to allow 100% polyester and blends with acetate and triacetate to be sold untreated. EDF's Harris has added his approval to this suggestion.

Substitute Search: Other untreated fabrics also appear to have sufficient fire resistant properties. Examples: Cordelan, modacrylics, as well as blends of these with polyester, nylon, and matrix fabrics based on polyvinyl chloride and polyvinyl alcohol. Moreover, vinyl bromide could be a base for a fire resistant fabric.

But can other fabrics be made flameproof with the addition of safe chemicals? "Tris had such good performance at low add-on levels that nobody looked for a substitute," says Stauffer's Bilski. But now they're looking.

Tris had such good performance at low add-on levels that nobody looked for a substitute. But now they are looking, and some may be available in three months

Stauffer has developed Fyrol FR-2-TG, which has had "limited performance success." Mobil Chemicals' Antiblaze 19 and Apex Chemical's Emulsion 212 seem to have the same deficiencies. Ciba-Geigy is reportedly testing a new compound.

Velsicol's Sander Allen says the company has developed a new product that is "undergoing a battery of tests." It may be available in three months. And Great Lakes Chemical's Allen Smith says the company has developed a "potential flame retardant candidate for the textile industry." The compound has already undergone some tests, including the Ames test, has "performed in the same ballpark as tris," and is ready for pilot plant production.

Smith says they will be looking at it for each former tris application. "The customers will be making the final judgment," he says.

That judgment is no longer based solely on performance and price. Safety, backed by extensive and expensive testing, will be increasingly important to the marketing of new chemicals.

Flame Retardancy:
Its Status Today

By GEORGE L. DRAKE, Jr.

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FIRE HAS BEEN an essential factor in the growth and development of civilization, and has made it possible for man to inhabit many otherwise unusable areas of the earth. Even though man has appreciated benefits from fire, there has always been a great fear of its destructive effects, a fear that is justified.

According to statistics from the Department of Health, Education and Welfare, the annual toll from burns associated with flammable fabrics is estimated at 3,000 to 4,000 deaths and 150,000 to 250,000 nonfatal injuries. In terms of financial loss, the yearly total exceeds a quarter of a billion dollars.[1]

The State of California has been a leader in developing test methods for measuring flammability of apparel fabrics. California had standards for flame retardancy before the U.S. Congress enacted the first national legislation in the area of flame resistant textile materials. The Flammable Fabrics Act of 1953 came as the result of deaths from fires due to the flash burning of brushed rayon sweaters and flimsy negligees. The Act prohibits the marketing of highly flammable textiles including all wearing apparel regardless of fiber content or construction. Standards to be applied in the testing of textiles for flammability also were established. For an item of apparel to be imported or sold through interstate commerce, it must pass standard CS 191-53.

Now, more than ever, chemical producers are seeking ways to produce chemicals that can impart flame resistance to fibers. Mills are also cooperative and willing to evaluate new chemical finishes and fibers to improve the flame retardancy properties of their products. The major driving force has been the passage by the U.S. Congress in December 1967 of a bill which amended the Flammable Fabrics Act (FFA) of 1953.[2]

The new law strengthens the old and extends it to cover paper, plastics, rubber, synthetic fibers, foams, interior furnishings as well as apparel fabrics. It also now includes hats, gloves, footwear, and interlining fabrics. The FFA was first implemented by publication of standards for carpets and rugs, in the *Federal Register, 35*, 74, April 16, 1970. The methenamine pill is used as the ignition source in the test procedure. The specifications and test method do not vary for small carpets and rugs from the regular carpet standard. Only the labeling requirement differs. If a small carpet or rug fails to meet the acceptance criteria, it is proposed that it must be labeled permanently and conspicuously stating that it is flammable (Fails DOCFF2-70) and should not be used near sources of ignition or flammable furnishings. The final standard was published in the *Federal Register*, Dec. 27, 1970.

The Commissioner of Social Security has proposed regulations with the approval of the Secretary of Health, Education, and Welfare that certain carpeting, carpet assemblies, and other floor covering for hospital inpatient areas shall be tested by the "Steiner Tunnel Test" (ASTM E84-68) and have a flame spread rating of not more than 75. This test is more severe than the methenamine pill test (*Fed. Reg. 35*, 171, Sept. 2, 1970).

On Nov. 17, 1970, the Proposed Flammability Standard for Children's Sleepwear was published (*Fed. Reg. 35*, No. 273). It proposed that children's sleepwear (any product of wearing apparel up to and including size 6X), such as nightgowns, pajamas, and similar related items such as robes, intended to be worn primarily for sleeping or activities related to sleeping must be fire retardant. Diapers and underwear are not included. The items covered must pass the vertical flame test. General requirements of the test method are: 5 conditioned (dry) specimens 2¼ by 10 in. selected from an item or items representative of the lot, are suspended vertically one at a time in holders in a prescribed cabinet and subjected to a standard flame along the bottom edges for 3 sec and 12 sec. The afterflame and char length are measured. If an individual specimen has a char length of 10 in., the item fails.

Test methods are being reviewed, and revised, while much needed information on burn accidents is being collected. Meanwhile the textile industry, along with the government and universities, has accelerated its research and development efforts to supply flame retardant materials for varied and numerous end uses.

No new theories for the action of flame retardants have been offered since Schuyten, Weaver and Reid[3] proposed the chemical theory that flame retardants for cotton were based on a dehydration process in which Lewis acids or bases are formed through a carbonium ion or carbanion mechanism. Much of the published information since then has been to further clarify existing theories. The most recent work published in this area is by Hendrix, Bostic, Olson and Barker.[4] They suggested that when fabrics treated with compounds containing phosphorus to impart flame resistance are exposed to a flame they first undergo phosphorylation during decomposition, in all probability at the C-6 hydroxyl, preventing the formation of levoglucosan. The second step is an acid catalyzed dehydration and thermal decomposition of the cellulose.

Technology

Phosphorus containing compounds are by far the most important class of compounds used to impart durable flame resistance to cellulose. Used in conjunction with phosphorus are the elements nitrogen or bromine or both. Reeves, Perkins, Piccolo and Drake[5] recently reported some of the chemical and physical factors influencing flame retardancy.

Proper selection of the nitrogenous polymer or compound to be used with phosphorus-containing flame retardants is very important. The combination can aid flame resistance, have a neutral effect, or reduce flame resistance contributed by the phosphorus. Amide and amine nitrogen generally aid flame resistance, whereas nitrile nitrogen can detract from it. Amide nitrogen from nylon fiber is unusual in that the nylon detracts from flame resistance. Several factors may contribute to this

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effect. Perhaps the most important reason for the nylon effect is that the amide is part of a thermoplastic polymer which has a high percentage of combustible hydrocarbon. Cyanamide, which contains an amine and nitrile nitrogen, contributes flame resistance much the same as amides. This is due to the conversion of cyanamide to urea and dicyandiamide during treatment of the fabric. This study indicates that flame retardants, such as those containing cyanoethyl phosphonate groups, would contribute much less flame resistance than the corresponding amino or carbamoylethyl phosphonate.

Nitrogen contributes most efficiently to phosphorus-containing flame retardants when it is present in low concentrations relative to the phosphorus. N/P atomic ratios of about one in the fabric contribute maximum flame retardancy per unit weight of nitrogen. Much of the nitrogen lost during charring must contribute flame resistance by acting in the vapor phase; otherwise, the efficiency of nitrogen would drop more rapidly as the N/P atomic ratio in the fabric is increased. Many factors should be taken into consideration in deciding the amount of nitrogen to use with phosphorus. Some factors are (a) cost — nitrogenous agents may be much less expensive than the phosphorus being replaced, (b) tensile properties of the fabric, and (c) hand.

Small amounts of phosphorus contribute more flame resistance per unit weight of phosphorus than large amounts. If complete flame resistance is desired, it is usually necessary to use large and less efficient quantities of phosphorus. All flame retardants examined decrease in effectiveness per unit weight of retardant as the add-on of retardant is increased. Thus, the first 5% of flame retardant added to a fabric is more efficient than the second or third 5%. This and other data indicate the most efficient flame retardant system will contain two retardants — one acting in the solid and the other in the vapor phase.

In the absence of nitrogenous materials, essentially all of the phosphorus in a flame-resistant fabric can be accounted for in the char produced by pyrolyzing the fabric in air. The phosphorus also can be accounted for in the char when nitrogen is present, as an amide, pseudo amide, or amine. With nitrile nitrogen in the fabric, there is a significant loss of phosphorus from the char and reduced efficiency of the phosphorus. The amount of nitrogen in the char is dependent on the N/P atomic ratio in the flame-resistant fabric. High ratios in the fabric are decreased substantially during the charring, while ratios slightly above 1 are reduced very little. The most stable ratio is 1. Based on atomic ratio and insolubility in water, acids, and alkali, it is assumed that the thermally stable residual compound may contain phosphorus oxynitride.

Any bromine present in a flame-resistant fabric escapes to the tar or vapor phase during pyrolysis in air and appears to have little or no effect on the amount of phosphorus remaining in the char. Bromine contributes to the flame resistance of phosphorus-containing flame retardants, although it acts independently of the phosphorus. To do this, it must act almost completely in the vapor phase.

At present, except for military, institutional, and certain industrial uses, few fabrics are treated with durable flame retardants.

Durable Retardants of Commercial Interest

Heat Cure. The most widely used durable flame retardants for apparel and household goods, and for certain military items, such as tent liner fabrics, are based upon tetrakis (hydroxymethyl) phosphonium chloride (THPC), high yield from formaldehyde, phosphine, and hydrochloric acid. This is a water-soluble, crystalline compound produced in the U.S., THPC is sold by Hooker Chemical Co. and Aceto Chemical Co., and in Europe by Albright & Wilson Ltd., England. The methylol groups of THPC react readily with amines and amides.[6] During a study of the physical and chemical properties of aminized cotton, the value of THPC as a flame retardant was first recognized.[7] A flame retardant based upon THPC and an amide was then developed. The formulation consists of THPC, urea, and trimethylolmelamine (2:4:1 mole ratio) plus various auxiliaries.[8] Normally about a 35% solution is applied (70% wet pick-up) to an 8-oz cotton fabric dried and heat cured. The finish passes the Standard Vertical Flame Test and is durable to both laundering and dry cleaning. Its primary limitations are the stiffness imparted to some types of fabrics, and a reduction in fabric tearing and tensile strength. Durability of the finish is inversely related to the urea concentration of the treating solution. Urea is needed to improve tensile and tear strength. Thiourea can be substituted for urea, in about equal weights, to give a finish that is actually more durable to laundering and alkaline boiling. Trimethylolmelamine is preferred over N-methylol amides.

When methylated methylolmelamines are substituted for the trimethylolmelamine, treated fabrics have a softer hand, but the amount of phosphorus fixed is lower. Generally the same is true when other N-methylolamides such as dimethylolethyleneurea, dimethylolethylhrizone, dimethylol-4, 5-dihydroxy cyclic ethyleneurea, and dimethylol carbamates are substituted for trimethylolmelamine in the formulation.

Sodium hydroxide is used in the formulation to neutralize the free hydrochloric acid that is usually present in the THPC. Any excess sodium hydroxide neutralizes or reacts with THPC and converts it to other P-methylol compounds. Other bases, including alkanolamines, can be used instead of sodium hydroxide.

Wetting and softening agents are the main auxiliaries used in the formulation. Generally about 0.1% of a wetting agent is used. The amount of softener used can vary considerably. The softener can have a significant effect on tearing strength; 0.5% cetylamine or stearamide causes an increase of about 25% in tear strength which is retained through as many as 15 laundry cycles. Usually laundering reduces the tearing strength.

Addition of sodium sulfite to react with free formaldehyde reduces premature polymerization in the treating formulation and produces fabrics with a better hand, less stiffness, and higher tearing strength. The amount of sulfite can vary from about 0.9 up to 2.0 moles per mole of THPC.[11] A polymerization catalyst, such as magnesium chloride or an amine hydrochloride, is also necessary in this formulation.

The THPC-amide flame retardant has been modified in several ways in an effort to improve the properties of the treated fabric and/or to reduce the cost. The bromoform adduct of the allyl ester of phosphonitrilic chloride can be produced in an aqueous emulsion using a peroxide catalyst and then added to the THPC-amide formulations.[12] The adduct is a very efficient flame retardant and less of the combined formulation is required than of the THPC-amide alone. The major objection to this modification is that the overall cost is increased. Another adduct that has been added to the THPC-amide formulation is the bromoform adduct of triallyl phosphate.[13] Again cost was the deterrent factor.

A recent modification for use on polyesters/cottons sheets was made by the Piedmont Section of the AATCC.[14] Tris(2,3-dibromopropyl)-phosphate, which is water-insoluble, can be emulsified and added directly to the THPC-amide formulation. The brominated phosphate penetrates both the polyester and the cotton and produces a very durable finish for the blend fabric. The presence of the phosphate with the THPC-amide preserves

loss in lightfastness of certain dyes.[13]

Antimony oxide-polyvinyl chloride mixed with the THPC-amide formulation and applied to cotton fabrics of over 5 oz. per sq yd imparts excellent flame resistance durable to more than 50 laundry cycles. This finish is used primarily on military fabrics, work clothing and hospital curtain curtains.

A flame-retardant finish based on cyanamide-phosphoric acid has been known for a number of years.[16] The recent commercial availability of an economical, relatively stable aqueous solution of cyanamide has renewed interest in this flame retardant. O'Brien[11] has recently described a cyanamide-phosphoric acid flame retardant finish for cotton. His findings show that the degree of durability depends on the concentration of the reactants and on the hardness of the wash water. One of the major faults of this finish is that 40-45% of the fabric strength is lost. Since it is subject to ion exchange, the durability of the flame resistance in laundering is low. This finish has found some commercial acceptance for use on drapery fabrics.

A new durable flame retardant finish for cotton based on THPC, cyanamide and phosphoric acid has been developed by Normand, Donaldson and Drake.[18] The treatment consists of padding fabric with an aqueous solution of the reactants, drying for 2 min at 90°C, and curing for 3 min at 155°C using conventional textile finishing equipment. Solutions containing 25-36% of cyanamide and THPC in a 2:1 molar ratio and 2.0-2.5% of phosphoric acid, applied to 8.5 oz sateen and 3.2 oz print cloth imparted flame resistance that was durable to 30 laundering cycles. The resin add-on was 8-20%. Phosphorus content of the treated fabric decreased only slightly during laundering. Little or no yellowing of treated fabric was observed when it was bleached with sodium hypochlorite solution and scorched between heated plates. Little odor or smoke was observed when the treated fabric is ignited. The wrinkle recovery angle of the treated fabric was 253° (W+F), with a durable press rating of 3+ after 10 laundry cycles.

Fabrics treated by this process have considerably reduced tearing and breaking strength. Recently Donaldson *et al.* have modified this finish to overcome these excessive strength losses.[19] This was done by replacing the phosphoric acid in the above formulation with 3-3.5% NA_2HPO_4.

Chemical Cure. The treatments described above made the cellulose insoluble in cuene and imparted some wrinkle and rot resistance to the fabric. A method of polymerizing the phosphorus compounds inside the fiber, with little or no reaction with the fiber, produces flame-resistant fabrics without causing degradation of strength has met with success. The most successful technique is to chemically "fix" the polymer with anhydrous ammonia.

The original process utilizing ammonia to insolubilize methylol phosphorus polymers inside cotton to impart flame resistance was done in 1953.[20] THPC, trimethylol-melamine, and urea were padded onto fabric and dried. The fabric was then exposed to ammonia and/or ammonium hydroxide which immediately insolubilized a polymer containing phosphorus and nitrogen inside the fiber. Strength of the treated fabric was essentially unchanged. Slight modifications of this process have been made to increase the stability of the pad bath and to make it more attractive for application using commercial laundry equipment.[21]

A water-soluble precondensate of THPC and urea has been made that is suitable for the process.[22,23] After impregnation with the precondensate the fabric is dried, exposed to ammonia vapor, and then passed through ammonium hydroxide. The ammonia causes polymerization within the fiber; subsequent aqueous ammonium hydroxide treatment insured the production of a highly insoluble polymer. The finish is flame resistant even after repeated laundering and drycleaning. Tearing strength is slightly reduced but breaking strength is essentially unchanged. This process has been used in Europe for about 10 years. The ammonia gas step can be eliminated by incorporating diammonium sulfite in the treating solution. Ammonia is released during the drying step and initiates the polymerization reaction.

A new, simple, chemical fixation process is the THPOH-NH_3 system.[24] THPOH is made by adjusting the pH of THPC with concentrated NaOH to about 7.2. Fabrics are impregnated with the THPOH solution, dried to about 20% moisture, and exposed to anhydrous NH_3 gas. An 8.5-oz twill or sateen so treated will pass the standard vertical flame test with about a 13% add-on. This process also can be used on very light-weight fabrics — a 2 oz fabric requires about 20% add-on. Stiffness is essentially unaffected; breaking strength remains unchanged or sometimes increases; and, with a softener, tearing strength reduction is about 10%.

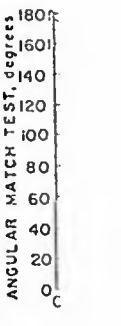
The ammonia gas fixation step can be eliminated by a slightly different approach. Copper nitrate is added to the THPOH solution for greater stability and subsequently ammonium hydroxide is added.[25] Fabric impregnated with the solution is heated at about 150°C to set the polymer. However, because of the presence of the copper salts, the treated fabrics have a light bluish-green color.

Cellulose Reactive Finish. A finish based on N-methyiol dialkyl phosphonopropionamide[26] was introduced in the United States in 1968 by the Ciba Co. under the trademark Pyrovatex C.P. A typical treating solution consists of 40% Pyrovatex* C.P., 5% melamine formaldehyde resin, such as Cyanamid's Acrotex 23 Special, 2.0% polyethylene softener (25% solids), 0.4% ammonium chloride, or 3% amine hydrochloride, 0.1% wetting agent, and 52.9% water. Fabric is wet out with the solution, padded to about 75% pick-up, dried, cured for about 4 min at 330°F, and given an alkaline aqueous rinse. This finish has low toxicity, an excellent hand and is durable to washing and tumble drying. Tensile strength is decreased about 20-30% and tearing strength about 30%. Effective treatments require an add-on of 25-35%. The finish is sensitive to acid sours and its heat stability could be improved. Cost is relatively high.

Laundering Effects

While phosphorus-containing flame retardants have some unique features such as glow resistance, they require proper application and care to assure maximum efficiency and durability. Alkali and alkaline earth metal ions reduce or inhibit the flame resistance contributed by phosphorus. These ions need not be in direct union with the retardant to exhibit their effect; mere presence in the fiber is adequate. Calcium acetate is more detrimental to flame retardants than calcium phosphate. Calcium and magnesium can be picked up by flame-resistant fabric from wash water during laundering. This can occur through ion exchange properties of the retardant and through precipitation in the fiber by combining with phosphate from detergents or fatty acids from soap. The amount of phosphate picked up by the fabric depends on the nature of the flame retardant and the amount of phosphate and calcium (or magnesium) in wash water. Pickup of these phosphates can lead to erroneous results when the phosphorus content of fabric is used as a measure of durability of the flame retardant. Calcium and magnesium soaps in a fabric similarly can effect flame tests which are often used to measure durability. The adverse effects of the foreign materials may be eliminated by rinsing the laundered fabric occasionally in dilute acid (Fig. 1).

*Use of a company or product name by the Department does not imply approval or recommendation of the product to the exclusion of others which may also be suitable.



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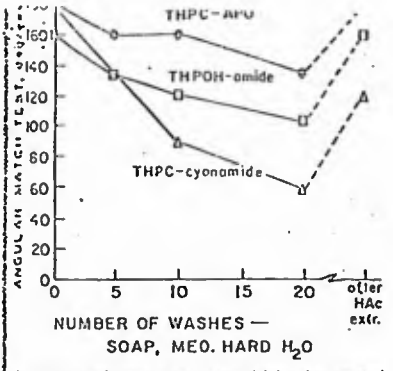

Fig. 1. Flame resistance of three cotton fabrics after repeated laundering and after acetic acid extraction.

Copper ions pick up in solution have little effect on flame resistance.

The oxidation state of phosphorus in the finish affects the durability of flame retardant fabrics. THPC retardants with trivalent phosphorus are less durable to laundering than are the retardants which contain the corresponding phosphine oxide structure. Thus, the application of THPC type retardants should include an oxidation step.

Retardants are generally degraded, at least to a small extent, when exposed to sunlight. This becomes a significant problem for some retardants when the treated fabrics are laundered and line dried. The unoxidized retardant based on the reaction of "THPOH" with ammonia is particularly sensitive to sunlight. A small amount of pigment can protect some flame retardants from the destructive action of sunlight. Pressing, which is sometimes part of the laundry cycle for apparel and household goods, also decreases the effectiveness of some flame retardants. The ester groups of alkyl phosphonates are hydrolyzed at the pressing temperature to produce sites for ion exchange which is detrimental when the fabrics are laundered.

Analysis of the Art

As discussed above, there are several flame retardants which, although not ideal, can be used to impart excellent flame resistance to cellulosic textiles. These finishes are based mainly on formulations containing phosphorus. Some flame retardants can impart other properties to fabric such as wrinkle-, rot-, and mildew-resistance. At present, there is no one finish which is applicable to fabrics of all weights and constructions. Flame retardants suitable for use on the polyesters, and polyester-cotton blends are needed. At present, it is probable no such durable flame retardant exists. Progress is being made in designing a flame retardant for manmade fibers. With the passage of the amendment to the Flammable Fabrics Act, research efforts to develop suitable flame retardant processes have increased markedly, and new advances can be expected. □ □ □

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State-of-the-Art Report: Flame Retardant Fibers, Fabrics, and Polymers (Conclusion)

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Technology, Economics and Politics of Textile Fire Resistance

Dr. G. S. Buck Jr., a member of the Commerce Department's Flammability Advisory Committee recently spoke on the above subject at the April, 1970, annual meeting of the Textile Research Institute (24). Although predicting future improvements, he reported that "present inadequacies in testing and finishing technologies will necessitate great caution in extending the scope of the act if serious difficulties are to be avoided."

In considering economics, Dr. Buck estimated a cost to the consumer of more than a billion dollars per year for potentially mandatory fire resistant children's garments alone.

In considering politics, he observed that there is little evidence of effective consumer demand for fire resistant fabrics. He also indicated that some agents of various organizations who work on flammability opportunities are motivated more by personal or political advantage than they are by realistic problems of textile flammability that are related validly to consumer safety (25).

More specifically, in relation to the "state of the art" and competitive industry interests, Buck stated that none of the currently commercially available fire resistant synthetic or made-made fibers offers a very realistic answer to textile industry problems related to the 1967 Amended Flammable Fabrics Act (FFA 67). Therefore, he concluded that politics have outrun technology and indicated that the textile industry is being pressured to adopt standards that are "inadequate, impractical or premature." To cope constructively with this situation he recommended cooperative textile and fiber industry efforts to provide improved fire safety for the consumer through strengthened research and educational programs. However, he equally advocated fair, but firm, industry resistance against unwise implementation of FFA 67 and cited the ineffective carpet and rug "pill test" as the type of political trap to be opposed in the future. This hexamethylene tetramine pill test was chosen for the first standard proposed under FFA 67. Unfortunately, the rug involved in the Marietta fire previously referred to repeatedly would have passed the proposed pill test. Accordingly, a majority of the Commerce Department's Flammability Committee recorded their opposition to the first proposal on Carpet and Rug Standards based on the pill test (26).

Textile Flammability and Consumer Safety

Deliberations from a 1969 international conference on textile flammability and consumer safety, tend to support the preceding judgment of the general, practical state of the art (27). The conclusions of the conference which was organized by the Gottlieb Duttweiler Institute for Economic and Social Studies and held in Rüschlikon-Zurich, Jan. 23-24, 1969, are as follows: "The flammability of textiles cannot at present be reduced sufficiently to meet the consumer's desire for beauty and safety equally. For the present one can only select some particularly hazardous articles for flameproof finishing. At the same time there must be intensive research in the following fields: (1.) statistical data on accidents caused by textile fires; (2.) development of better tests and international standards etc.

ABOUT THE AUTHOR. Lawrence L. Heffner has continuously participated in and contributed to cooperative industry and government research, development, production and educational programs for durably fire resistant textiles since his graduation as a chemical engineer from the Johns Hopkins University in 1933. He is the original inventor and principal developer of a single-step, organic solvent cyanamide Fire, Water, Weather and Mildew Resistant (FWWMR) finish for cotton fabrics which has accounted for the greatest amount of durably fire resistant organic textiles of any type ever produced by industry. Heffner is currently chairman of the Research Committee of the Information Course on Fabric Flammability, an Associate Professor (U.S.D.A.) of Textile Chemistry at the School of Textiles, North Carolina State University, a licensed professional engineer, a staff member of the Division of Marketing and Utilization Sciences of the Federal office of the Cooperative Extension Service of the U.S. Department of Agriculture, and for several years has assisted USDA's Southern Regional Research Laboratory in New Orleans in cooperative research and educational programs with industry. He is also a past chairman of the Committee on Evaluation of Fire Resistant Textiles and is currently a member of the Committee on Flameproofing and Fire Resistance of the American Association of Textile Chemists and Colorists.

tolerances; (3.) study of inflammability and combustion processes of all fibers in use; (4.) production of effective flameproof finishes or flameproof fibers. Finally, consumers must be better informed of the dangers that can be caused by flammable textiles, how to prevent accidents, and how to purchase flameproof goods. These requirements can only be met by intensive international cooperation between the medical profession, chemists, lawyers and other experts." Representatives of these professions from industry and government, many from the U. S., recorded their views on some of these problems at the conference. The proceedings also briefly identified most of the materials and methods currently available for the production of fire or flame resistant fibers, fabrics, and polymers.

Similarity of FR Systems for Textiles and Plastics

Effective, durable flame retardant textile and plastic materials that have achieved some measure of competitive commercial adoption in the past are basically similar and include principally those organic compounds or compositions containing chlorine, bromine, antimony, phosphorus, nitrogen and, to a lesser degree, fluorine and boron. Synergistic combinations of compounds containing some of these elements have been found to be most effective, especially those containing antimony, chlorine, bromine, phosphorus, and nitrogen.

The oldest system of this type is based on a synergistic combination of arsenic, antimony or bismuth compounds (principally antimony oxide) in combination with halogen-containing organic compounds, mostly those containing chlorine, such as chlorinated paraffin and polyvinyl chloride. This system has been used for the Federal or military-specification procurement of U. S. military fire resistant cotton textiles for outdoor uses continuously since 1939 (*4*). DiPietro described the use of this system for imparting flame retardance to a variety of plastic materials at the 1969 Zurich conference (*26*).

Hindersinn and Wagner also have reviewed the development and extensive use of this chlorocarbon-antimony oxide system for the production of fire retardant textiles and plastics (*29*). However, they concluded that "no satisfactory theory has yet been suggested to explain the synergism between halogen and antimony compounds in conferring fire retardancy on polymer compositions." Furthermore, they state that "a coherent theory of fire retardancy which can be applied to polymer compositions has not yet been evolved."

Accordingly, most, if not all of the present textile and plastic fire or flame retardant materials have been discovered and developed by empirical methods. This observation is not intended to imply that more government funds should be devoted to so-called basic research on flammability problems. Indeed, recent studies indicate that authorization of funds for basic research without some continuing critical evaluations and requirements for practical results would be irresponsible and probably unsuccessful (*30*).

The following discussion of the materials and methods presently available for the production of fire resistant textiles will be concerned therefore more with practice than theory.

Other Systems for FR Cotton

LeBlanc (*31*) and Aenishanslin (*32*) identified the types of chemical finishes currently available for the production of fire or flame resistant cotton apparel fabrics at the 1969 international conference. One of these, an N-methylol compound of di-alkyl phosphono-

[illegible] co-workers, has been used for the commercial production and marketing of fire resistant cotton nightwear for children since 1968.

LeBlanc, at Zurich, referred to a continuing development of the U. S. Department of Agriculture's Southern Laboratory in New Orleans, which is also being commercially evaluated for similar cotton apparel (*33*).

Reeves and Guthrie of this USDA laboratory first disclosed the use of related organophosphorus and nitrogen systems for flame retardant cotton textiles around 1954 (*34*). Since then these P–N containing organic compound systems have been used commercially for the production of military and industrial FR protective clothing, mostly in combination with the antimony oxide-chlorocarbon system, for improved afterglow and tactile qualities of the latter system.

Recent investigations at USDA's Southern Laboratory indicate that without effective light stabilizers some of the P–N FR systems previously reported to be durable lose effective fire resistance after repeated launderings combined with outdoor line dryings. Therefore, the recent USDA Cotton Utilization Research Conference in New Orleans included three papers related to the effects of weathering on the laundering durability of fire resistant cotton apparel fabrics (*35,36,37*).

For indoor end-uses such as mattresses, however, combined with outdoor line dryings. Therefore, the requirements. USDA has identified a variety of water soluble, and other less-than-permanent to laundering flame retardants as functionally feasible for the production of fire resistant cotton mattresses (*38,39*). Using such systems, Buck has reported that fire resistant cotton mattresses can be produced at a relatively modest cost. However, he warns that mandatory fire resistance requirements for all bedding, including sheets, blankets, etc., requires expensive materials much more durable to laundering and states that "we simply don't have finishes suitable for that market at this time (*24*)."

Nevertheless, most of the durable fire resistant textiles produced by industry up to the present time, have been the classical Fire, Water, Weather and Mildew Resistant (FWWMR) finished cotton fabrics, based on the antimony oxide-chlorocarbon system previously discussed (*4*). For example, FWWMR production during World War II reportedly involved the largest textile procurement in our government's history (*40*). The vertical flame test has been used in part for the specification production and procurement of this FWWMR finished cotton fabric since 1939. Thus it has been demonstrated for many years that for certain specialty markets durably fire resistant cotton textiles are technologically, commercially, and competitively feasible.

USDA, the National Cotton Council of America and related organizations continue to devote many man-years in research for improved and more versatile fire resistant cotton products.

Wool and Fire Resistance

In 1969 the International Wool Secretariat announced its development of a durable fire resistant finish for wool based on THPC, an organophosphorus compound originally discovered and developed as a cotton flame retardant by USDA's Southern Laboratory (*41*). Koroskys has reported on this wool finishing development for the severe safety requirements of aircraft use (*42*). In 1970, five major U. S. airlines announced their choice of wool carpet for the interior of their new 747 jumbo jets. Because of wool's natural flame resistance one airline also chose wool for its 747 blankets and upholstery (*43*). Another airline, however, selected an aromati[illegible]

polyamide high temperature resistant fiber for its 747 flame retardant upholstery and carpeting (41). Thus it is apparent that wool interests will also compete with the man-made fiber industry for future fire resistant textile markets.

More detailed accounts of the comparative fire safety of wool in contrast to other natural and man-made fibers were reported by Straehl of the International Wool Secretariat at the 1969 Zurich Conference (45). Straehl presented data on ease of ignition, rate of burning, and smoke hazards, indicating significant superiority of wool blankets over those made of non-FR treated cotton, rayon, polyester, and acrylic fibers.

Rayon Situation Is Confusing

Beginning in 1967 rayon producers introduced flame retardant rayons for commercial exploration. These are currently being evaluated by the textile industry for various markets. The possible increased use of such materials in the future is dependent to a great degree on potential future mandatory government fabric flammability standards. Accordingly, current textile industry reports indicate a high degree of confusion regarding the present and future potential of FR rayons, as well as other flame retardant man-made fibers (46).

Thermoplastic Man-Made Fibers

Most of the man-made fibers currently consumed by the textile industry, such as the polyamides, polyesters, acrylics, acetates, and polyolefins, are thermoplastic as well as flammable. Since 1967 increased research efforts by the textile and man-made fiber industries have been devoted to the special problems of evaluation and consumer safety related to the use of these thermoplastic flammable fibers. In reporting on the state of the art in July, 1969, Dr. G. C. Tesoro, original chairman of the research committee of ICFF, stated that: "The development of technology for imparting and even evaluating flame retardant properties in thermoplastic man-made fibers is just beginning; and at this time, chemical finishing processes imparting durable flame retardant properties to fabrics made from thermoplastic fibers are not available commercially and essentially not known (47)."

Polyvinyl chloride fibers, the modacrylics and the more recently developed fire- and high-temperature resistant fibers are partial exceptions to the preceding general comments.

Nametz has also recently identified and discussed various approaches for imparting improved flame resistance to synthetic textile fibers. He classifies them as follows: (1) copolymer or blend of polymers; (2) finish; (3)additives; and (4) chemical modification. He concluded that "The state of the art in flame retarding acrylic fibers is fairly well advanced and effective ways to impart this characteristic are being employed commercially today." However, he indicated a need for additional research for improved methods for imparting flame resistance to polyesters, polypropylene, and polyamides (48).

Blends

Most of the flammable thermoplastic fibers are used in blends with cotton or wool for the fabrication of apparel textiles of high priority importance to present and future consumer safety investigations. At the 1969 Zurich conference, Kruse reported that such blends "are in one respect inferior to single component fabrics from the fiber types concerned, and this respect is that [illegible] inferiority is attributed by Kruse to a "scaffolding effect" from the support provided for the burning of thermoplastic fibers such as polyester by the carbonaceous char resulting from the combustion of non-melting fibers such as cotton or wool.

An increasing amount of thermoplastic, flammable synthetic fibers, especially polyester, has been used for the fabrication of apparel textiles in recent years. Much of the increased use of polyester fiber has been in blends with cotton for the production of no-iron textiles. Hopes to impart effective fire resistance to such fabrics is of great importance to those in industry and government who are concerned with the potential implementation of the 1967 Flammable Fabrics Act Amendments.

Reeves and his co-workers at USDA's New Orleans laboratory are investigating this urgent problem. Thus far their published results indicate that if the polyester content is less than 35 percent in a blend with cotton "adequate" flame resistance might be obtained from the use of one of their P-N organic flame retardants (50).

However, Tesoro reported in mid-1969 that less than satisfactory aesthetic and other properties had resulted from the use of an organo-P-N-Br system originally proposed for all-cotton fabrics by USDA's Southern Laboratory, and they had not achieved commercial feasibility for polyester/cotton blend fabrics (47). Accordingly, the 1969 chairman of the research committee of the ICFF, T. D. Miles, recommended in his annual report that more emphasis should be placed on research on the flammability problems resulting from fabrics made of blends of thermoplastic and non-melting fibers (51). Miles recommended less emphasis be placed on burning rate and ease of ignition in future research for fire resistant children's clothing. Miles did record noteworthy progress in 1969 for advancements in developments for high temperature resistant and fire resistant man-made fibers and fabrics.

High Temperature and Fire Resistant Polymers

"Kynol" and "Durette" high temperature polymer product developments supplement the previously available "Nomex," PBI and carbon fiber products for fire resistant textile market development and exploration. Whether or not such materials have significant potential for future mass consumer textile markets is uncertain at present. However, their reportedly superior resistance to fire and high temperatures indicates that they will be increasingly and carefully evaluated for markets where such properties may be necessary.

At the 40th annual meeting of the Textile Research Institute Ross and his co-workers at the Wright-Patterson Air Force Base, Ohio, reported on their current evaluations of these materials. Comparative fire resistance and other data was presented on fabrics and flight garments made of PBI, Nomex, Kynol, Durette, glass fibers, and FR treated cotton (52).

In 1969 Delman of the Naval Applied Science Laboratory, Brooklyn, N. Y., reviewed the burning behavior of a variety of man-made flame retardant polymer compositions, including the thermoplastics and some of the more thermally stable ones such as the polybenzimidazoles, which were indicated by Ross to be superior for Air Force requirements to other currently available FR textile materials. Delman attributed the flame resistance of such polymers as PBI to the relatively small number of hydrogen atoms bound in their molecule and therefore suggested the development of new polymers containing few or no hydrogen atoms, for improved fire resistance (53).

A reduced-cost carbon fiber process was reported

which seems to be an [illegible] suggestion. The Japanese process uses a "lesliuous pitch" hydrocarbon as raw material for a reportedly more economical carbon fiber with improved properties over those made from rayon or polyacrylonitrile. The hydrocarbon raw material for the Japanese process was reported to contain 93 percent carbon as compared to 65 percent for polyacrylonitrile and 45 percent for a rayon raw material (54).

For many years it has been observed that effective flame retardants for cotton textiles cause the formation of a heat insulating carbonaceous char when the FR cotton is decomposed by flames (55). In this respect, therefore, the older fire resistant textile processes for natural fibers are similar to some of the most recent FR high temperature man-made fiber and fabric developments.

However, flame resistance is only one of the many desirable properties that require careful, objective consideration by those who hope to provide improved protection and service to the textile consumer. Other requirements of high importance to the consumer include many functional and aesthetic properties. Perhaps most important is the property of economical consumer service or cost.

Accordingly, a highly competitive situation exists between the more recent high temperature-resistant fiber developments and the older flame retardant textile and polymer products.

Evaluation — Natural and Man-Made Fire Resistant Textiles

The problems of objective, critical, constructive evaluation are of continuing paramount importance in the development of proposed new standards for potential implementation of the 1967 Amended Flammable Fabrics Act by the U. S. Secretary of Commerce. This law has stimulated the development and dissemination of an increasing amount of related research and other information since its enactment in December, 1967. Various government agencies such as the Department of Health, Education, and Welfare, USDA, the U. S. Army Natick Laboratories and others are cooperating with the Commerce Department for the constructive evaluation of present and potential materials and methods for improved flame retardant textiles that might be feasible, reasonable and practical.

The ICFF also cooperates with representatives of all of these government agencies and, in addition, those of industry and of the various professions, to assist in the dissemination, exchange, and appraisal of information for the development of improved fire or flame resistant textiles. ICFF provides a neutral forum for public identification, discussion, and evaluation of significant developments in industry and government related to the potential implementation of FFA 67.

Summary and Conclusion

Some problems and developments in flame retardant textiles that have evolved since December, 1967, have been identified and reviewed; their relevance to the current state of the art of flame retardant fibers, fabrics, and plastics have been discussed.

From this review of the current state of the art it can be concluded that, as in 1967, there is a continuing need for additional research and for the objective, critical evaluation of any present or proposed fire or flame retardant textile process or material prior to potential, mandatory mass production.

ICFF publishes an annual bibliography of information on developments related to potential advancements in FR textiles and plastics.

This report has been reviewed by and discussed with T. D. Miles of the U. S. Army Natick Laboratories and 1969 chairman of the ICFF research committee. His cooperation is gratefully acknowledged. Any errors or omissions are, however, the responsibility of the author.

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Mr. DANIELSON. You mentioned some magazines, publications. If you have an extra copy, I would like to have it.

Mr. BYRD. Mr. Chairman, I would supply you if I had only one copy.

Mr. DANIELSON. We don't want to deprive you.

Mr. BYRD. They are replaceable, because it was well known throughout the industry, and I expect they are in the files of every technical company and every apparel manufacturer.

Mr. DANIELSON. I would like, if you would supply that, leave that with us. That will be part of the your record.

Mr. BYRD. I will be delighted to do so.

When we had this high-handed action, we regard it as high-handed, by the Consumer Product Safety Commission, we went immediately to the Federal district court, and we filed a complaint that had four counts. The first count was the failure of the CPSC to follow the processes that are prescribed by the Federal Hazardous Substances Act. It doesn't come under the Administrative Procedure Act. There are specific procedures set forth in the Federal Hazardous Substances Act. We asked the CPSC to invoke those procedures. They refused to do so, and thereupon we went to court and got the injunction.

That injunction is now on appeal to the Fourth Circuit Court, but in the meanwhile, the CPSC withdrew their ban and said it has been miscontrued, and we really meant it just as an interpretation, and therefore, they went into the fourth circuit and asked the fourth circuit to moot our case, and the fourth circuit denied their motion.

I hope that on final decision, the fourth circuit will continue to deny their motion to moot our case for denying us due process.

In the course of the proceedings, both the district court and the fourth circuit said that there are other remedial provisions in the Federal Hazardous Substances Act. There are two sets of procedures, one an administrative procedure, which they refused to follow, and had they done so, it would have bound the whole world. Failing to do that, they have to proceed on a case-by-case basis to seek an injunction forcing a ban and a recall.

I think it was clearly within Judge Chapman's contemplation when he enjoined the ban on the procedural grounds that we would be afforded a hearing, an administrative hearing, before the CPSC, but we were not, and furthermore, we not only were not provided one, the CPSC tried to moot our attempts to get one.

So we are going ahead in South Carolina on the other counts in our complaint which challenge the scientific basis for the CPSC's actions, and we have filed discovery proceedings to get the documents from the CPSC, and the CPCS filed a protective order claiming that their documents should be protected and not turned over to us, to keep us from seeing what the evidence was, and the judge overruled that motion and has ordered the Government to respond within 30 days and supply the documents to us.

Now we have gotten some documents under Count 1, and it is from those documents that I would like very much to discuss, because the question of the scientific basis for the ban has been raised. I start with the fact that the CPSC acknowledged in its

regulation that it had no evidence that Tris had ever caused a single cancer in human beings, despite the fact that it had been produced for many years, in the workers who produced it. There is no scientific evidence of any cancer caused at that time.

This was confirmed in a memorandum by Dr. Esch, the Medical Director of CPSC. He said:

> This then is an instance where a substance present in a consumer product has been determined to be carcinogenic in laboratory animals, but there is no immediate evidence of a health hazard in humans. This may be the first instance in which the commission is faced with making a major decision under these conditions.

The entire scientific basis for the ban on Tris appears to rest principally on the results of a mouse and rat feeding study that were conducted by a contractor under contract with the National Cancer Institute. On February 4, NCI delivered to the CPSC a computer printout that concluded that the rat and mouse feeding studies had been completed. At the time this computer printout was delivered, the National Cancer Institute stressed:

> These data were preliminary, unverified, and uninterpreted. These pathological findings are not an official document and presently represent the opinion of the Mason research pathologists. They do not constitute an NCI evaluation of the test results, and NCI evaluation will be presented in a report which will be issued after all components of the experiment and the data and the information are compiled and validated.

Apparently the rats and mice used in the NCI studies were inbred species that had inherently high rates of cancer.

Dr. Hehir, CPSC Biomedical Director on Science pointed out in a document, which is on file in the district court in South Carolina:

> We recognize as biologists that we are dealing with an extremely sensitive inbred animal species that has a high known incidence of tumor to start with. We exacerate that situation by giving a maximum load tolerated dose of material and treating that animal over its lifetime to this material.

Furthermore, in a subsequent memorandum, he said:

> Of all the animals available for experimental purposes, none simulates man in all respects, and the cause of cancer or mechanism by which it occurs has not been established.

Furthermore, I point out to you that in a conference, Dr. Robert Harris, the Environmental Defense Fund's leading advocate of the Tris ban, acknowledged at an ex parte meeting which we got by court order that:

> There is no, as you know, no good scientific method for extrapolating from animals to humans in terms of carcinogenicity.

This position was also confirmed by people on the staff of the CPSC, who said, and admittedly as Dr. Harris pointed out—

> There is no good way of extrapolating from animal carcinogenic data to man.

Furthermore, as far as the skin absorption test were concerned, a CPSC document said that "It is really not a valid test, as far as I am concerned, to say that skin sensitization done that way shows absorption because you have breached the skin barrier, and that is a tough way of getting into the system and calling it a natural mechanism."

They punctured the footpads of guinea pigs. They irritated the skin of the test animals, and then applied the Tris on that.

As for the mothing of the garments, one of the CPSC's transcripts of one of their closed meetings said that this was thrown in for emotional appeal, and that the CPSC believed that the principal method of absorption was through the skin.

I have other illustrations taken from the record in the South Carolina case that I won't mention, but I think I have given you enough to indicate to you that there is a serious question, and when you start pointing fingers, and I don't want to point fingers necessarily in this matter, I do feel that if we had been afforded an opportunity to be heard, and to test this evidence before the CPSC came out with its ban, that we may have avoided some of the problems that we have today.

Similarly, Mr. Chairman, I point out to you on the export matter that the CPSC reversed its position and invoked an export ban again without providing notice or hearing, and did it ex parte, I feel in derogation of the provisions, the procedures set forth in the Federal Hazardous Substances Act.

I am going to end now, but I would like to quote just from Judge Chapman. He said after hearing the evidence, "Now," after having the flammability standard, "another department of the same government has not only banned Tris, but has ordered the repurchase of articles containing it," the vice issue that was raised today.

I would like to join Mr. Shirey and the others who have preceeded me in saying that we believe that a prompt adoption of S. 1503 by the Congress would be a fair and equitable course for the government to take in this particular instance.

Thank you.

Mr. DANIELSON. Thank you, Mr. Byrd. You have left me without any questions.

Mr. BYRD. I didn't mean to do that, Mr. Chairman.

Mr. DANIELSON. I do request that you leave with us though the documents from which you have been citing. I know you have been paraphrasing and skipping over some of the less important portions.

Mr. BYRD. Yes.

Mr. DANIELSON. But we will have them in their entirety in the record.

Mr. BYRD. Thank you.

Mr. DANIELSON. Do you have any questions, Mr. Harris?

Mr. HARRIS. Mr. Chairman, I will be very brief. If the questions are precise, I would appreciate a precise answer, which you have proved yourself capable of frankly in your presentation.

Mr. BYRD. Are you setting me up now?

Mr. DANIELSON. Be careful when that happens.

Mr. HARRIS. No. 1: Do you feel that the Government acted improperly with regard to the institution of the sleepwear safety standards?

Mr. BYRD. Yes, sir.

Mr. HARRIS. Do you feel that they again acted improperly when they instituted the ban on Tris?

Mr. BYRD. Definitely.

Mr. HARRIS. Do you feel that they acted improperly also when they instituted the recall provision with respect to the ban on Tris?

Mr. BYRD. Absolutely.

Mr. HARRIS. Do you feel that in all those instances in the Government actions constitute enough wrong-doing on the part of the Government that industry should be indemnified?

Mr. BYRD. Yes, and now I am going to add something. I want to say this. All those actions were taken over the dead bodies of the industry. We urged further tests and further toxicological tests in 1971. We urged hearings, requested hearings, in 1977 when the ban went into effect. We were turned down. Our urgings and our pleas went to naught.

Mr. HARRIS. Just one other point.

Do you feel that the initial order requiring the standards with respect to fire safety inherently required the use of Tris?

Mr. BYRD. Yes.

Mr. HARRIS. In the practical world, there was no other way to have accomplished those standards without the use of Tris?

Mr. BYRD. Yes, sir, I absolutely firmly believe it.

May I add that my company has spent over one-third of its research budget on this subject, and I have absolute confidence in the literature and the director of our research laboratory in saying that the only way we could have met the standards in 1971 was by the only chemical that was available, and that was Tris.

Mr. HARRIS. Is your company the Springmaid sheets?

Mr. BYRD. Yes, sir, thank you.

Mr. DANIELSON. I will ask one question to the whole panel.

Is Tris a proprietary chemical or is it generally available on the market?

Mr. BYRD. It is not proprietary. There are several companies that make it.

Mr. DANIELSON. Thank you very much.

Does anyone have a jewel of wisdom that he would like to leave with us?

Mr. HEROLD. May I make just one statement?

Mr. DANIELSON. Mr. Herold.

Mr. HEROLD. After having gone through very briefly with you the scenario that would occur if there is a ban in place with respect to repurchase, I think it is important for the committee to understand that the repurchase provision of the Hazardous Substances Act is not enough. It does not fully indemnify, it does not fully reimburse those that suffered economic injury as a result of the ban, and therefore we again urge the committee to act promptly on the legislation pending before it.

Mr. DANIELSON. I think that was apparent in my bottom line question, did you not at each tier in the repurchase, does not the person lose the value added in that process? I understand that.

Mr. SHIREY. Two other quick comments. The repeated statement has been made that Tris was mandated, and I continue to concur with that. While there were some fabrics on the market that met the standard that did not need Tris, they did not meet market demands.

For example, I used nylon tricot but it was not an acceptable fabric, for example, for a boy's pajama, so the market demand would not accept those products which did not use Tris.

Mr. DANIELSON. Are your companies now marketing infant's sleepwear?

Mr. SHIREY. Yes, but the standard has been modified, and now with that modification, that could have been made when the section standard——

Mr. DANIELSON. With the modification you can meet the present standards?

Mr. SHIREY. Without chemicals.

Mr. DANIELSON. And you can use cotton and polyester?

Mr. SHIREY. No, still not cotton. Synthetics, basically.

Mr. DANIELSON. Can it be blends?

Mr. SHIREY. Certain blends.

Mr. DANIELSON. All right, I won't go into that. It is beyond my understanding.

I thank you all. I know that you have gone to considerable expense and time and effort to get here, and I hate to send anyone home without testifying, so now you can all get back on the bus and ride home to South Carolina.

Mr. HEROLD. Thank you, sir.

Mr. DANIELSON. Our next witnesses are two people, The Environmental Defense Fund represented by Ms. Anita Johnson, staff attorney, and accompanied by Dr. Robert Harris, staff scientist.

Where have I seen you before, Ms. Johnson?

TESTIMONY OF ANITA JOHNSON, STAFF ATTORNEY, ENVIRONMENTAL DEFENSE FUND

Ms. JOHNSON. On the cyclamate indemnities bill.

Mr. DANIELSON. Is Dr. Harris with you today?

Ms. JOHNSON. I am sorry, I expected him to accompany me, but he has been unable to arrive. Dr. Harris is the person most familiar with the technology of flame-retardant textiles. If you have specific questions on that subject I will have to refer them to him.

Mr. DANIELSON. Ms. Johnson, I am sure you can represent both very well.

First of all, we will receive your prepared statement in the record without objection, and now you just handle it in whatever way you think is the best.

[The prepared statement of Ms. Johnson follows:]

STATEMENT OF THE ENVIRONMENTAL DEFENSE FUND

TESTIMONY OPPOSING THE TRIS INDEMNITIES BILL BY THE ENVIRONMENTAL DEFENSE FUND[1]

Tris (2,3-dibromopropyl phosphate) is a flame retardant chemical that was used on children's sleepwear which causes cancer and sterility in laboratory studies. It was banned by the Consumer Product Safety Commission in April, 1977. Fabric and clothing manufacturers were left with unsaleable stock and stock returned to them through CPSC repurchase requirements, and consequently suffered financial losses, losses which were serious to small businesses, particularly apparel manufacturers.

The taxpayer should not indemnify these losses. It is the producers, not the government, who must bear primary responsibility for safety. Indemnification of losses following legitimate health and safety regulation would tend to decrease marketplace safety because it destroys the incentive of producers to police themselves for hazards. Producers should have maximum incentive to test their products at an early stage and remove hazardous components. If producers know that their

[1] The Environmental Defense Fund is a non-profit organization funded by membership fees and foundation grants, dedicated to the preservation and improvement of the human and natural environment. On March 24, 1976, EDF petitioned the Consumer Product Safety Commission to require a warning label on Tris-treated garments. In February, 1977, EDF petitioned for a ban on the substance.

economic losses will be repaid in the event of a safety ban, their fear of a ban will vanish as an incentive for self-policing.

Without the incentive of loss avoidance in the event of a ban, marketplace hazards could be expected to increase. Industry must be relied upon as the primary guarantor of marketplace safety. It is industry that has the resources, the technological expertise, the personnel, to inspect and safeguard its products. The Consumer Product Safety Commission has an annual budget of $4 million, to oversee the safety of ALL consumer products [2] in contrast to a textile/apparel industry budget of $62 billion—and the textile/apparel industry is but a fraction of all consumer products. It is hopeless to expect the mosquito to regulate the elephant. The elephant must regulate himself, with the help of the strong financial incentive of fear of regulation.

Under normal market conditions, production of a product or product component would be expected to decrease as more information became available about its hazards. For example, 79 million pounds of DDT was produced for domestic use in 1959. With each new test baring health hazards, production shrunk. By 1970, production had declined to 12 million pounds; by the time the ban occurred, production was inconsequential. This is the kind of natural, marketplace reaction one would hope to see if normal financial incentives are not disrupted. If financial responsibility is taken over by the government, these financial incentives are destroyed.

Frequently, the agencies are able to enforce the laws by persuading industry to act itself, rather than by taking formal, regulatory action. For example, in 1976, FDA initiated 66 formal court actions against hazardous, ineffective and falsely-promoted drugs. But it secured 423 voluntary recalls by industry. Voluntary recalls are superior because the government avoids the enormous cost of formal court proceedings and can accomplish much more compliance with the law for the same amount of money. If losses from bans are indemnified by the government, the government will utterly lose its ability to jawbone industry into voluntary compliance because the threat will be missing.

The government could not adequately protect the consumer if losses from health safety regulation had to be indemnified because of the expense involved. For example, in the last several years, FDA has banned 6,710 ineffective drug products from sale, with hundreds more to follow. The cost of indemnifying these products and all the other products regulated by agencies would be in the billions. The government would be able to ban only those products it could pay for. If such were the case, the more widespread the hazard, the less likely the government would act. Since it could only afford to indemnify for the relatively small hazards, only those would be policed.

The government was correct in banning Tris. No one has said it was at fault. Tris is acknowledged by all to cause cancer in rats and mice and to cause gene mutations and sterility in other laboratory tests. Use of Tris, specifically, was not mandated by the government. Because of a large number of serious burns and deaths associated with flammable fabrics, the government, in 1972, did require children's sleepwear to attain certain standards of flammability. "Padding on" Tris at the outside of flammable fabrics or addition of Tris to the fiber melt were two ways to attain this standard. But Tris had been used for years prior to this as a flame retardant in fabrics and foam. Test methods for determining the long-term health effects of chemicals have been a matter of consensus among scientists since at least the early 1950's. No one in the chemical industry employed these tests on Tris or other flame retardants.

Alternate methods of meeting the flammability standard could have been selected, such as choice of inherently flame resistant fabrics, treating fibers in such a way that the flame retardant chemicals are chemically bound to the fibers, rather than merely physically bound as in the case of Tris, or testing and using other add-on chemicals such as Antiblaze 19 and Pyrosan 546. No alternative methods offered exactly the same properties as Tris. Each method of flame-retardancy involves trade-offs in durability, cost, fiber, laundering methods, feel of cloth, etc., as pointed out by accompanying articles from the trade press.[3] Over 600 patents have been issued for flame retardant chemicals. Tris was widely used because commercial judgments at the time did not factor in health trade-offs, not because it was the only way to comply with the law. The chemical industry offered Tris for children's sleepwear without establishing its safety.

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[2] Excluding consumer products regulated by other regulatory schemes such as food, drugs, automobiles, cigarettes and firearms.

[3] "What's Available for FR Textiles," Textile Industries, February, 1976, February, 1978.

Not only is the practice of sell now, test later immoral, but there were compelling reasons why manufacturers should have been especially attentive to testing Tris. First, the sheer volume of exposure. Fabric contained 10-20% Tris by weight. Dr. Bruce Ames described this as "close to a shot-glassful" per garment.[4] Ten million pounds of Tris were used for flame retardance in fabric and plastic. Sleepwear touches the whole body for periods of 8 hours and more per day. For a number of years, it has been known that the chemicals structurally similar to Tris are rapidly absorbed through the skin. Moreover, Tris was used for 30 million children, a group considered more vulnerable to toxic chemicals than adults.

Second, Tris is structurally similar to other chemicals proven to cause cancer. Tris contains three impurities, which are either known carcinogens themselves or are structurally similar to ethylene dibromide, a known carcinogen since at least 1973. The ability of Tris to cause gene mutations in the so-called Ames test—a result considered highly indicative of the ability of a chemical to cause cancer—received widespread coverage in the popular press when our group petitioned the CPSC for a warning label in 1976. Indemnities should not flow to an industry which continued to opt for Tris until the final coup de grace was rendered by a taxpayer-funded two-year animal study, which finally, indisputably, proved it caused cancer.

We are outraged by the profligate, uncaring use of Tris and horrified by the possible repercussions, decades hence, of this practice. Since the American people have already paid for the Tris mistake through mass exposure, we should not have to pay double for indemnities.

Although we oppose indemnities, however, we don't want to leave the impression that all segements of the industry are equally responsible for Tris. Once the sleepwear manufacturers were confronted with positive information about Tris' hazards, they began an aggressive search for alternatives. They made no attempts to oppose or delay CPSC action on Tris, and evidenced enormous concern about the qualities of a chemical which had been sold them by a chemical industry which had the resources to test and evaluate Tris and its alternatives but did not.

Lawsuits have been initiated by apparel manufacturers to determine who in the chain of production was most responsible. The courts will determine fault as they would in any other situation of commercial loss. Their procedures, designed to examine critically the facts of each individual case, should not be short-circuited by hasty legislative action.

Because litigation is time consuming, and because the outcome is not certain, we have no objections to providing small manufacturers with loans similar to the Small Business Administration loans granted for bringing plants into compliance with the Federal Water Pollution Control Act. 15 U.S.C. 636. This remedy would not interfere with normal incentives for testing products and withdrawing from sale those identified as unsafe.

Ms. JOHNSON. Tris (2,3-dibromoprophyl phosphate) is a flame-retardant chemical that was used on children's sleepwear which causes cancer and sterility in laboratory studies. It was banned by the Consumer Product Safety Commission in April 1977. Fabric and clothing manufacturers were left with unsalable stock and stock returned to them through CPSC repurchase requirements, and consequently suffered financial losses, losses which were serious to small businesses, particularly apparel manufacturers.

I do not think that the taxpayers should indemnify the losses you have heard described this morning. It destroys the incentives of producers to police themselves for hazards. These producers should retain maximum incentives to test their products at an early stage and to remove the hazardous components. If producers learn that their economic losses will be repaid in the event of the safety ban, their fear of an ultimate ban will vanish as an incentive for self policing.

Without the incentive of loss avoidance, marketplace hazards could be expected to increase. It is industry that has the resources,

[4] "Regulation of Cancer-Causing Flame Retardant Chemicals and Government Coordination of Testing of Toxic Chemicals," hearings before the House Subcommittee on Oversight and Investigation, May 11, 1977 at 37.

the technological expertise, the personnel to inspect and safeguard its own products.

Let's look at the CPSC. It has an annual budget of $40 million to oversee the safety of all consumer products. The textile apparel industry in contrast is a $62 billion annual sales industry. We have $40 million of CPSC, $62 billion for the textile industry. It is hopeless to expect that a tiny government agency can assume all this responsibility with that kind of inequity.

The logical outcome of what the manufacturers were just arguing to you is that it is the government that has the only responsibility for assuring safety. The government should bear the losses, not we producers.

Under normal market conditions, production of a product would be expected to decrease automatically as more information about its hazards becomes available. For example, 79 million pounds of DDT was produced for domestic use in 1959. With each new test, barring the health hazards, production shrunk. By 1970 production had declined to 12 million pounds. By the time the ban occurred, production was inconsequential. This is the kind of natural marketplace contraction one would hope to see if normal financial incentives are not disrupted. If we start indemnifying these kinds of losses, these incentives are disruptive.

Frequently our agencies are able to enforce the laws by persuading the industry to act itself rather than by taking formal regulatory action. For example, in 1976 the Food and Drug Administraiton initiated 66 formal court actions against hazardous, ineffective, and falsely promoted drugs, but it secured 423 voluntary recalls by industry. Voluntary recalls are much cheaper. Court proceedings are very expensive. It is much better to jawbone industry into voluntary compliance than bringing a lawsuit. Yet this kind of jawboning would be utterly ineffectual if industry knows that its losses in the event of a ban will be covered.

We heard this morning a representative of the apparel manufacturers saying that the first thing they knew about Tris was the EDF petition in March 1976. Frankly, I find this quite shocking. These manufacturers have been selling their products to the public for years, apparently without normal human curiosity about the health effect that they might have. We heard testimony this morning that they do not have the expertise to evalute the health effects of their products.

I am not sure what my reaction is to that. I guess my initial reaction is if they are making a profit off of selling products to consumers, somehow they should acquire the expertise to evaluate what the product does. But if that is not a feasible possibility, why are they not expecting that their suppliers acquire the expertise? Why are they not asking the textile mill members:

> What do you know about the products you are putting in as chemicals? What studies have been conducted? What? You have not studied the long-term effects of this chemical, this chemical which makes up 10 to 20 percent of the sleepwear fabric that I am using?

Why have not these apparel manufacturers procured express warranties from their suppliers? This is the kind of vigilant safety-minded behavior that we should expect from apparel manufacturers and from all of industry. We want everybody up and down the

line to be conscious of their health obligations to consumers, as well as the obligations that were described, the obligation of does the fabric feel good?

People were upset this morning about a sleepwear item standing by itself because of the stiffness.

Now I understand that these people feel that responsibility to the consumer. They are very concerned about esthetic, obvious esthetic things. What we want is a natural marketplace system where people feel the same acute awareness of the health effects of their products as they do about the appearance or whether or not the fabric is stiff.

Also I was surprised to hear one witness say that it took a while to clear Tris-treated fabric from their factory. That is one reason that Tris products remained on the market long after the initial EDF petition.

Again I am a little confused. My reaction to that, I haven't really made up my mind about that, but in some ways that seems to me to be a calculated judgment on the part of that factory owner. He had two options. He could say:

My God, this stuff causes gene mutations. We have got published articles in major American scientific journals. We have got an enormous amount of concern, an enormous amount of press coverage. I am going to take that cloth I bought. I am not going to use it. I am going to call it a loss.

Or he can say to himself "I am going to use up this cloth. I am not going to take a loss on this Tris-treated cloth."

And that is a business. That is a calculated business judgment. He made the wrong judgment. He used up the cloth. The result was a repurchase requirement on his part.

Now what we want is a natural market system that says people who make less cautious safety judgments are going to lose by it, that is the way we would want that to operate, we would want him to say:

You know, CPSC might ban the garments I make out of this cloth, and I might take a killing, so I am going to put this cloth aside. I am not going to use it. I am not going to expose consumers to it any more.

I want to reaffirm our belief in EDC that the Government was entirely correct in banning Tris.

There have been a couple of theories introduced this morning about fault on the part of the Government. Mr. Simpson said that there was an error in recalling Tris-treated garments.

You all may recall in 1970 Abbott Laboratories made intravenous fluids which were seriously contaminated with a fatal bacteria. At the time the Food and Drug Administration was faced with a decision whether to let those I.V. fluids continue on the market and be used in hospitals, or whether to ask Abbott to incur the expense and loss of recall. FDA under incredible pressure from Abbott, I might add, decided not to recall the products. Those I.V. fluids killed over 70 people. There was an incredible public outcry, and I think everyone looking back on it realized a serious mistake had been made and that Abbott should have been asked to spend the money and the losses on the recall.

I think that it is that kind of horror story that must have been going through the minds of the present CPSC Commissioners. And when you are dealing with a fatal disease, when you are dealing

with tests which have undergone stringent peer review by the scientific community, the Commissioners may well have felt that they had no choice but to recall.

There was also the criticism that the Government was at fault because the flammability standards were technology-forcing standard, that is, at the time they were promulgated, they compelled industry to do research to meet the standards. There was no manufacturer meeting the standards already on the market.

Technology-forcing statutes and regulations are, of course, continually controversial in the Congress, but I want to point out there are a number of regulatory statutes which do require technology forcings, one of which is the Air Pollution Act. The Water Pollution Act has elements of technology forcing, that is, the Government says "You have got to clean up your emission into the water, and you have to tell me how you are going to do it." In other words, the Government doesn't have to present the technology to industry at the time that the standards are promulgated.

I am surprised that Mr. Simpson believes that the absorbability of Tris has not been demonstrated.

I want to insert into the record, if I may, sir, an article by Bruce Ames called "Flame-Retardant Additives as Possible Cancer Hazards" from Science Magazine, January 7, 1977, which details the studies which prove that Tris absorbs through the skin of animals, and I might add that these studies were publicly available as early as 1974.

Mr. DANIELSON. Is there objection?

It will be included.

[The information follows:]

Flame-Retardant Additives as Possible Cancer Hazards

The main flame retardant in children's pajamas is a mutagen and should not be used.

Arlene Blum and Bruce N. Ames

Thousands of chemicals to which humans have been exposed have been introduced into the environment without adequate toxicological testing. The toxicological and biological properties of food additives and drugs have been monitored by the U.S. Food and Drug Administration and now pesticides are monitored by the U.S. Environmental Protection Agency, but most other new substances are tested only superficially.

Some chemical flame retardants provide a good example of a technological innovation where adverse environmental effects may outweigh some of the benefits. Recent federal regulations, requiring that children's sleepwear, mattresses, mattress pads, and carpets meet flammability standards, are said to have resulted in a decrease in the number of burn injuries and deaths (*1*). As a result, flammability standards to cover all children's and adults' clothing, tents, sleeping bags, curtains, and upholstered furniture are being considered. Currently about 300 million pounds of flame-retardant chemicals are being produced mainly for use in fabrics, plastics, and carpets (*2*, *3*). Those added directly to textiles are often present in amounts as high as 10 to 20 percent of the weight of the fabric. Further extension of the scope of the standards may increase their production and usage even more.

Inevitably, some fraction of the many millions of pounds of flame retardants that are being produced will find their way into people. The chemicals are rubbing off on children's skins, may be inhaled from furniture, rugs, and tents, and, after "disposal" into the environment, may enter the food chain. The decision to further extend flame-retardant standards should not be based only on the benefit of a reduction in fire deaths and injuries. The possible risk to the population and environment of the widespread production, use, and dispersal of these potentially hazardous flame-retardant compounds should also be taken into account.

Until recently, little attention was paid to the long-term biological effects of these flame-retardant compounds. The main organic chemicals used in flame retardants contain bromine or chlorine or they are phosphate esters. Some have chemical structures (discussed below) that are closely related to compounds known to cause cancer or to be toxic to animals. Several compounds previously used as flame retardants have been shown to be teratogenic, carcinogenic, mutagenic, or highly toxic (*4*). In this article, we discuss the implications of the finding that tris-(2,3-dibromopropyl) phosphate (tris-BP) the main flame retardant currently used in children's pajamas, is a mutagen (see Fig. 1).

History of Flammable Fabric Standards

The history (*5*) of the use of chemical flame retardants goes back more than 300 years to a treatment for canvas used in Parisian theaters in 1638 and a report from Oxford on a piece of unburnable cloth in 1684 (*6*). The French king Louis XVIII commissioned Gay-Lussac to find a way of protecting fabrics used in the theater. In 1820 Gay-Lussac found that ammonium salts of sulfuric, hydrochloric, or phosphoric acid were effective in reducing fabric flammability (*6*). This work remains valid and applicable today.

The Flammable Fabrics Act in the United States was passed on 14 December 1953 to regulate the manufacture of highly flammable clothing such as brushed rayon sweaters, which were first sold during the 1940's. The act was intended to protect the public from the "unreasonable risk" of fires leading to death, personal injury, or significant property damage. A general wearing-apparel standard, effective 1 July 1954, established minimum flammability standards to keep highly flammable apparel out of the marketplace. The act was amended in 1967 to allow flammability standards to be set for many additional consumer products. Standards for carpets and rugs became effective in 1971, and for mattresses and mattress pads in 1973. The first children's sleepwear standard (DOC FF3-71) for sizes 0 to 6X became effective on 28 July 1972. Children's sleepwear fabric exposed to a gas flame along its bottom edge for 3 seconds is required to exhibit a char length no greater than 7 inches (1 inch = 2.54 cm), even after the fabric has been laundered 50 times.

In 1972, the Consumer Product Safety Commission was established and assumed jurisdiction over the regulation of flammable fabrics. A children's sleepwear standard for sizes 7 to 14 became effective on 1 May 1975. The requirements of this standard are similar to, but slightly less stringent than those for the sleepwear sizes 0 to 6X.

The Consumer Product Safety Commission is in the process of establishing uniform federal standards for upholstered furniture and tents. The National Bureau of Standards has carried out feasibility studies for a standard (based on both garment design and flame-retardant fabrics and treatments) to regulate all articles of adults' and children's clothing. Various state laws are being instituted to regulate upholstered furniture, curtains, tents, and sleeping bags although these may be preempted by federal regulations.

Consequences of Flammable Fabric Standards

The ever-increasing scope of government regulations is leading to a vastly expanded market for chemical flame retardants. In 1971, a total of approximately 175 million pounds (1 kilogram = 2.2 pounds) of flame-retardant compounds were produced. In 1975, the amount had doubled to over 300 million pounds, and it is expected to reach 500 million pounds by 1980 (*2*) although about two-thirds of this is inorganic material, such as alumina trihydrate and antimony oxide used in the carpet industry (*2*, *3*). Large numbers of different organic chemicals, many of which are brominated and

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chlorinated, are being introduced for various applications (3, 6, 7).

The Flammable Fabrics Act has had a major influence on the type of fabrics used in children's sleepwear (8). For example, in 1971, 56 percent of children's sleepwear was constructed of cotton and 27 percent consisted of polyester-cotton blends. Four years later, in 1975, 87 percent of children's sleepwear was constructed of various synthetics. No sleepwear was made of polyester-cotton and only 13 percent was cotton. Untreated cotton and polyester-cotton do not meet the flammability standards, and treatments have not been commercially competitive. As a result, flame-retarded polyesters, acetates, triacetates, and inherently flame-resistant fabrics such as modacrylics and those containing polyvinyl chloride have replaced cotton.

Selection of Flame-Retardant Chemicals

In 1913, the chemist William Henry Perkin defined the requirements for a flameproofing process in terms that remain applicable (6, p. 166):

> A process, to be successful, must, in the first place, not damage the feel or durability of the cloth or cause it to go damp . . . or dusty. It must not affect the colors or the design woven into the cloth or dyed or printed upon it. Nothing (such as arsenic, antimony, or lead) of a poisonous nature or in any way deleterious to the skin may be used and the fireproofing must be permanent. That is to say it must not be removed even in the case of a garment which may be possibly washed 50 times or more. Furthermore in order that it may have a wide application, the process must be cheap.

One or more of six elements—bromine, chlorine, phosphorus, nitrogen, boron and antimony—are currently used in compounds to reduce fabric flammability because of their effectiveness (6). There may be particular toxicological problems with organic bromine and chloride compounds (in addition to antimony). Organic bromides and chlorides are used as flame retardants in synthetic fibers and are thought to act (6) as free radical traps and thus to suppress combustion. Burning is oxidation in the vapor phase, involving H·, OH·, and O· free radicals. The halogen may work by a mechanism: RBr + H· → HBr + R·.

For man-made fibers, tris-BP is by far the most important flame-retardant compound in use and perhaps 10 million pounds a year are used in fabrics and plastics (9). It is almost exclusively used in polyester, acetate, and triacetate fibers, as well as being the basis for a successful finish to acrylic carpets. The use of tris-BP is currently the most economical, convenient way to meet the children's sleepwear standards (9).

Textiles vary greatly in their flammability (Table 1), and each type presents a different problem in reducing flammability (10). Cotton and other cellulose-based fibers can be flame-retarded by impregnated cellulose phosphate esters formed by direct esterification of the cellulose molecule with a phosphate of the flame-retardant compound. Most treatments of cotton are based on tetrakis(hydroxymethyl)phosphonium (THP) compounds or phosphonates, which are polymerized in the fabric. These finishes can result in a loss of tear strength in the fiber of up to 30 percent (9). For cotton textiles, about 20 percent, by weight of flame-retardant compounds is added on in order to meet the standard (9). Cotton and synthetic blends present more of a problem. The synthetic part of the fabric melts, and the cotton serves as a support that keeps the synthetic burning. Flame-retardant strategies for such blends are being developed, but no economically successful flame-retardant treatment for them is yet available.

Ironically, wool, which is inherently fire resistant (Table 1) (11, 12), does not meet the children's sleepwear standard set up by the Consumer Product Safety Commission. The regulations require the fabric to be bone dry (desiccated in an oven at 105°C for 1 hour, followed by a cooling period) prior to the flammability test (5). Objections have been raised to this bone-dry regulation as discriminating against wool and cotton, which have high moisture contents (11).

Flame-retardant treatments require compromises in economy, esthetics, and wear properties. Consequently, extensive research, costing tens of millions of dollars, is still being done by government and industry to try to find better flame-retardant treatments, particularly for polyester-cotton blends.

Biological Properties of "Tris," the Main Flame Retardant in Pajamas

There is a growing realization that chemicals can be absorbed through the skin and that long-term toxicological effects of chemical additives to clothing should be characterized more thoroughly. A manufacturer typically carries out only short-term tests for toxicity, and until recently little attention was given to long-term effects, such as carcinogenicity, mutagenicity, and teratogenicity.

The need for studying these long-term effects is illustrated by the case of tris-BP, the flame retardant used in about half of children's sleepwear (9). Tris-BP is padded on to the surface of polyester fabrics in amounts up to 10 percent of the fabric's weight. As much as half of this is called "surface tris" and is susceptible to extraction and possible absorption through the skin (13). A pair of children's pajamas, weighing 200 g, could easily contain 6000 mg of surface tris-BP. Three launderings would reduce surface tris-BP appreciably (13, 14), while not altering the flame-retardant qualities of the garment. This is not done prior to sale reputedly because of the high cost and because consumers are said to value new-looking garments.

The absorption of tris-BP through skin is suggested by several studies. As part of short-term toxicity studies (15) by Michigan Chemical, tris-BP applied dermally to rabbits increased blood bromine concentrations. In another study, the urine from a rat wearing a gauze pad impregnated with tris-BP was found to contain high concentrations of a tris-BP metabolite, 2,3-dibromopropanol (16). In humans (13) tris-BP is a low-level allergen, an indication of some absorption through human skin (17). Tris-BP caused delayed hypersensitization in human

Table 1. Burning characteristics of textile fibers (10).

Fiber	Characteristics
Cotton	Supports combustion; burns rapidly, afterglows
Rayon	Supports combustion; burns very rapidly, no afterglow
Acetate or triacetate	Supports combustion; melts ahead of flame
Nylon	Supports combustion with difficulty; melts and carries flame away in falling droplets
Nylon 66	Does not readily support combustion; melts and carries flame away in falling droplets
Acrylic	Burns readily with sputtering
Modacrylic	Melts, shrinks away from flame and sometimes burns very slowly
Polyester	Supports combustion with difficulty; melts and carries flame away in falling droplets
Polyolefin	Melts, burns slowly
Wool	Supports combustion with difficulty
Vinyon	Does not readily support combustion

beings as did fabrics containing large amounts of this compound on the surface. The degree of sensitization from various fabrics was related to the amount of surface tris-BP available. Its percutaneous absorption is not surprising as, in general, chemicals in contact with skin can be absorbed into the body (*18*, *19*).

The most important question is whether (tris-BP is likely to cause cancer or genetic defects. The "high purity–low volatile" tris-BP made by Michigan Chemical and used for textiles contains 0.05 percent of the impurity 1,2-dibromo-3-chloropropane (*15*). Dibromochloropropane caused a high incidence of squamous carcinoma of the stomach in both rats and mice as early as 10 weeks after initiation of feeding (oral intubation) (*20*). In addition, 50 percent of the female rats developed mammary adenocarcinomas. This study, by the National Cancer Institute (NCI), was published in 1973, before the recent widespread use of tris-BP.

Three impurities in commercial tris—dibromopropanol (also a metabolite of tris-BP), the carcinogen 1,2-dibromo-3-chloropropane, and 1,2,3-tribromopropane—as well as tris-BP itself are all related in structure to the known carcinogen 1,2-dibromoethane (ethylene dibromide). Ethylene dibromide is used (more than 200 million pounds in 1970) as a gasoline additive and grain fumigant (*20*). We reported that it is a mutagen in the *Salmonella* test (*21*) in 1971 (*22*) (it had previously been shown to be a mutagen in a variety of other microorganisms). Because of its widespread use and mutagenicity, the NCI tested it for carcinogenicity. Ethylene dibromide was found to be a potent carcinogen on feeding, producing squamous cell carcinomas early and in practically all the surviving male rats treated (*20*).

Tris-BP and the other brominated alkyl compounds discussed above are mutagens in our *Salmonella*/microsome test (*21*). This test shows an extremely high correlation (on the order of 90 percent) between carcinogenicity and mutagenicity (*21*), and has been used to predict a number of carcinogens. Liver microsomal enzymes that convert carcinogens to their active (and mutagenic) forms are combined with *Salmonella* bacteria that are used for detecting mutagenic compounds. Prival *et al.* and Rosenkranz first carried out such tests (*23*), showing the mutagenicity of tris-BP and some of its impurities.

Dose response curves for the mutagenecity of these five compounds are shown in Fig. 2. The mutagenic potency

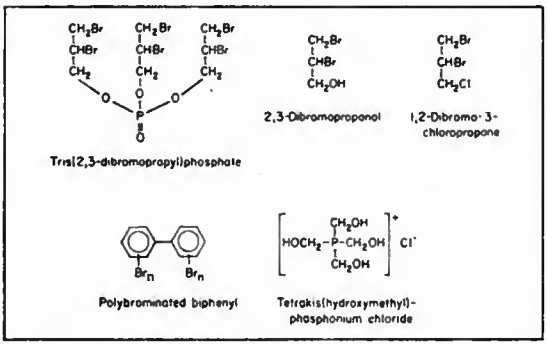

Fig. 1. Structures of flame retardants and related compounds.

of tris-BP is considerably higher than that of the other chemicals shown. Tris-BP is more mutagenic in the test than several known human carcinogens (*21*). However, the use of the *Salmonella* test for predicting the rough potency of carcinogens remains to be validated, although preliminary results look promising (*21*, *24*). Tris-BP and dibromopropanol, although more mutagenic than the carcinogens ethylene dibromide and dibromochloropropane, do differ in requiring activation by liver microsomal enzymes for efficient mutagenesis. Many of these microsomal activating enzymes are known to be present in human skin (*18*, *19*).

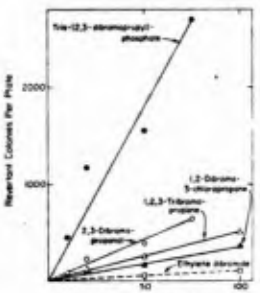

Fig. 2. All compounds were tested on *Salmonella* strain TA100 as described (*21*). The amount of ethylene dibromide added was 10 times that indicated on the scale. The data presented for tris-BP, 2,3-dibromopropanol, and dibromochloropropane were obtained in the presence of rat liver homogenate (20 μl S-9/plate, Aroclor induced) (*21*); human liver gave similar results. The potency (revertants per nanomole) (*21*) of the various chemicals is: tris-BP (0.1; 25 with S-9); 2,3-dibromopropanol (0.15; 1.9 with S-9), 1,2,3-tribromopropane (1.4; 1.4 with S-9), 1,2-dibromo-3-chloropropane (0.5; 0.9 with S-9), ethylene dibromide (0.02; 0.02 with S-9).

Bacterial tests showing that tris-BP is a mutagen suggest that it is likely to be a carcinogen, but animal studies are necessary for more conclusive evidence. Feeding studies (in which tris-BP was added to the animal chow) with rats and mice, at two dose levels, are being carried out at the NCI. The results should be known in 1977.

Recently tris-BP has been found to damage human DNA in vitro, to be a potent mutagen in *Drosophila*, and to cause unscheduled DNA synthesis in human cells in tissue culture (the latter test is quite effective in detecting carcinogens and is an indicator of a chemical's ability to damage DNA) (*25*).

The possible consequences of the widespread use of tris-BP are serious. It does come off fabric, is at least topically absorbed, is known to be a strong mutagen, and may contain a potent carcinogen as an impurity. Infants' and young children's habit of sucking their clothing could lead to its ingestion. Therefore, tris-BP poses a potential hazard as a human carcinogen and mutagen.

In addition to the hazard posed by tris-BP and its impurities to those who make, work with, and wear fabrics treated with it, an environmental hazard may, or may not (*15*), be posed by its disposal in large quantities into water and soil. The simulated washing of six treated sheets in a total volume of 30 gallons of water yielded about 6 parts per million (ppm) of tris-BP in the wash water. A concentration of 1 ppm in water is sufficient to kill goldfish within 5 days (*26*).

Biological Properties of Other Flame Retardants

The safety of a treatment for flame-retarding cotton fabrics has also been questioned although it is not clear that there is a significant problem with the current technology. Tetrakis(hydroxymethyl)phosphonium chloride (THPC) is polymerized and oxidized in cotton as a flame retardant, and this fabric has been reported to release formaldehyde and chloride when it is wet (*27, 28*). This is causing some concern (*9, 27, 28*) as there exists the theoretical possibility that these ingredients could form bis-chloromethyl ether, an extremely potent carcinogen in rats that has also caused cancer in factory workers. Bis-chloromethyl ether can be formed under certain acidic conditions from formaldehyde and chloride (*29*). To avoid any possibility of exposure of workers during the curing process (and to minimize free chloride in the garment) the American industry has switched to a salt that does not contain chloride, tetrakis(hydroxymethyl)phosphonium sulfate (*30*). It has been suggested that this could still be a problem in the wearing of treated cotton because appreciable amounts of formaldehyde can be extracted by synthetic sweat from cloth flame retarded with a THP salt, and sweat contains appreciable chloride ion (*28*). No bis-chloromethyl ether was found in this extract, however (*28*); as its formation requires acidic conditions, it probably is not a serious problem in nightwear.

A more obvious example of the hazards of flame-retardant chemicals is the polybrominated biphenyl (PBB) tragedy occurring in Michigan (*31*). Inadvertently 500 to 1000 pounds of a polybrominated biphenyl–based retardant were packed into bags similar to those in which Michigan Chemical Company packs the magnesium oxide feed additive known as Nutrimaster. The contents of these bags—the flame-retardant Firemaster—were mixed into a cattle feed mixture at the Farms' Services Bureau in Battle Creek, Michigan, and distributed throughout the state. Soon, Michigan dairy farmers noticed that their animals were beginning to suffer from loss of appetite, lowered milk production, excessive spontaneous abortion, birth defects among offspring, and eventual death of affected stock. After the cause was discovered to be chemical contamination, about 30,000 cattle, 6000 pigs, 1500 sheep, and 1,500,000 chickens were destroyed because their tissues contained PBB at concentrations greater than 1 ppm. At least 365 tons of feed, 18,000 pounds of cheese, 2600 pounds of butter, 34,000 pounds of dry milk products, and nearly 5,000,000 eggs were also destroyed.

Farmers and their families from all over the state who have eaten large amounts of dairy products and eggs from the affected animals have PBB's in their blood and fat, and some have begun to report a variety of illnesses, although the connection to the PBB ingestion has yet to be proved (*31*).

PBB has been reported to concentrate in fat (*32*). Caged fish kept on the Pine River below the Michigan Chemical Plant were reported to accumulate PBB (1 mg/kg) in their fat tissue. This represents a concentration factor greater than 10,000-fold within 2 weeks of exposure to very low concentrations of PBB (*32*).

The long-term carcinogenic and mutagenic effects of PBB's remain to be determined. Cancer tests in animals are in progress and teratogenicity in mice has been reported (*33*). The PBB's are close relatives of the carcinogenic and teratogenic polychlorinated biphenyls (PCB's), which are a worldwide health problem, in that they have been spread throughout the biosphere and have become concentrated in the food chain. The fact that less than a thousand pounds of the brominated PBB flame retardant has caused such widespread and persistent damage raises the question of the eventual consequences of the millions of pounds of PBB's that were produced in the past. It also shows the type of hazards that may be incurred in producing hundreds of millions of pounds of flame retardants (much of it containing organic bromine and chlorine) that will eventually end up somewhere in the environment.

The environmental bioaccumulation of these and other flame-retardant compounds may be a problem. Simple leaching of flame retardants from fabrics during manufacturing, laundering, and disposal could lead to their presence in water supplies and sewage. For example, the flame-retardant pentabromotoluene was found in a sewage plant in Sweden (*34*). Mirex (Dechlorane), a close relative of Kepone (it also often contains some Kepone), has been used as a flame retardant in plastics for many years, and is a carcinogen and teratogen (*4*), and bioaccumulates in fish and people. The environmental effects of the flame-retardant chemicals must be considered as well as the effects of the products of these chemicals after they have undergone oxidation and photochemical breakdown by sunlight or microorganisms in sludge, soil, water, or compost. Furthermore, studies should be carried out on the uptake, storage, accumulation, biochemical change, and elimination of the major flame-retardant compounds in fish and other aquatic organisms, in birds, and in mammals.

Alternatives to Preventing Burns Without Chemical Additives

1) *Self-extinguishing cigarettes.* The major single cause, accounting for about one-third to one-half (*35*), of the approximately 12,000 fire deaths and $11 billion in losses in the United States each year (*36*) is tobacco-smoking materials (*35*). The most common fire death scenario was found to be the residential furnishing fire started by tobacco-smoking materials; alone it accounts for 27 percent of fire deaths. The next largest single cause was residential furnishing fires started by open flames, which accounted for 5 percent of the United States fire deaths. All other single causes were 4 percent or less.

Most American cigarettes when put down will continue to smolder (some even more than 20 minutes), apparently because of additives and cigarette design. This long smoldering is the key factor in starting fires (*37*). Cigarettes are available that self-extinguish in a few minutes and are much less likely to start fires. We have tested a large variety of cigarettes and have determined that a few brands will go out in less than 5 minutes while the majority of brands burn from 15 to 22 minutes (*38*). One possibility for this is stated on the package of one brand, "Light an ordinary cigarette . . . there's a chemical in it to keep it burning." In contrast, this brand claims that its cigarettes have "*NO* flavorings, saltpeter, or tars added."

The major cause of fire deaths and losses could thus be attacked at its source by the introduction of self-extinguishing cigarettes. As an added benefit a significant number of forest fires might also be eliminated if cigarettes were to self-extinguish in a few minutes instead of smoldering for 15 or 20 minutes. Unfortunately one piece of legislation to give the Consumer Product Safety Commission jurisdiction over the flammable properties of cigarettes was defeated in the House of Representatives recently after its passage in the Senate (*39*).

The Consumer Product Safety Commission does have jurisdiction over matches and is developing standards for

self-extinguishing matches (*30*). The major single cause of fires of children's clothing is due to children playing with cigarette lighters and matches (*35*). Book matches have been designed that are practical and yet child-proof (*40*), and their adoption might have a major effect.

2) *Fire prevention.* Some of the effort and expense that is being put into extensive flame retarding should be put into fire prevention. More effort could be put into additional consumer education on the causes and prevention of fires. The Public Education Office of the Fire Administration is set up to do this, but has a minimal budget (*41*). Improvements in design also could be encouraged for nightwear because loose, flowing garments have been shown to be involved in many more fires than more tightly woven, close fitting garments (*42*). Stove design could be modified so children could not easily turn on the burners. Space heaters could be changed so that it would be more difficult for people to get close enough to them to ignite their clothing. Gas heaters should not be put in garage workrooms where solvents are used.

3) *Inherently fire-resistant fabrics.* These provide possible safer alternatives to the addition of chemical flame retardants. Modacrylics and matrix fabrics based on polyvinyl chloride and polyvinyl alcohol are inherently flame retardant without the addition of chemicals. Multimillion-pound-capacity vinyl bromide plants are being built to provide monomer for flame-retardant fabric production (*43*). It is to be hoped the type of problems caused by the carcinogen vinyl chloride, such as monomer residues in the polymer and worker exposure, will not reoccur in the textile industry with vinyl chloride and vinyl bromide. Flame-retardant additives that are covalently bonded to the fabric or those that are polymerized and entrapped within the fibers may also be safer than those that are padded on, such as tris-BP.

4) *Standards for fabrics.* These should be examined to see whether technicalities could be changed to minimize the need for additives. For example, a "melt-drip" provision is in force for sleepwear sizes 0 to 6X, but not for sizes 7 to 14 (*44*). Because of this technicality, tris-BP addition is necessary for polyester in the sizes 0 to 6X despite the fact that polyester is relatively flame resistant. There is evidence that the "melt-drip" phenomenon does not constitute a significant burn hazard (*44*). In addition, several examples are discussed (below) where it appears that standards could be redrafted so as to not require additives in certain fabric types (nylon tents) or in items (sleepwear of infants, who are less than 6 months of age) in which the benefit seems to be relatively small.

Benefit and Risk

A federal report published in 1972 states that about 200,000 burn injuries and 4000 deaths are associated annually with flammable fabrics (*42*). This report is often cited by proponents of stricter clothing flammability standards. However, a recent study (*45*) for the National Advisory Committee for the Flammable Fabric Act suggests that these numbers may be about ten times too high, and estimates that there are about 16,000 annual textile-related burns and about 500 deaths in the United States (*45*). About 20 percent of these burn injuries and deaths might be associated with nightwear in children; that is, the standards might possibly prevent 3000 burn injuries and 100 deaths per year among 50,000,000 children. These numbers are only very approximate because of uncertainties in the burn statistics and the recent estimate might be severalfold too low. In any case, burns are a serious problem. It also is relevant that healed burn tissue is at greater risk for developing an epidermoid carcinoma several decades afterward (*46*).

Adding flame-retardant chemicals to almost all children's pajamas, as a consequence of the Consumer Product Safety Commissions's standards, most probably is reducing the number of burns and deaths due to children's nightwear catching fire, although statistics are unavailable. As we have indicated, there are also other ways of reducing fire injuries.

The risk of the exposure of tens of millions of children to a large amount of a chemical must be balanced against the risk of fire. A calculation (*47*) suggests that the risk from cancer might be very much higher than the risk from being burned. Flame retardants (and most other large volume industrial chemicals) either have not been tested or have not been adequately tested for carcinogenicity. The use of an untested chemical as an additive to pajamas is unacceptable in view of the enormous possible risks.

Even if tris-BP is found not to show any statistically significant increase in tumors in the current NCI feeding study, possible absorption of a highly mutagenic chemical by millions of children still poses a considerable risk. Would tris-BP mutate human germ cells? Would tris-BP be a potent carcinogen if it were painted on the skin (the actual mode of exposure to people) rather than fed, as in the NCI study?

Even if a chemical were tested, and were found to be negative in a thorough animal cancer test in two species, this does not guarantee safety. A thorough animal cancer test usually involves a few hundred test animals at most (compared with millions of children in the case of tris-BP). This is an inherent statistical limitation in animal cancer tests, and high doses in the animal may only partially compensate. Thus, a chemical that would cause a tumor increase of less than 5 percent may easily go undetected. That sort of increase in a population of millions would result in tens of thousands of additional cases of cancer.

The National Commission on Fire Prevention and Control (*36*) has suggested that consumers be given a choice whether to buy flame-retarded fabrics or not.

The Commission does not favor unbridled extension of flammability standards to all categories of fabrics. Only grossly hazardous fabrics and fabrics implicated in a very large number of fire accidents should be banned from the marketplace. A preferable direction of emphasis is toward labeling requirements as to combustion hazards. This would honor the cherished principle of free choice, while at the same time informing consumers of potential risks and reminding them of the importance of fire. If reinforced by consumer education on fire safety, labeling requirements would have the effect of spurring manufacturers to improve the flame-resistance of fabrics.

However, as flame retarding adds an additional 10 to 30 percent to the cost of the garment and often adversely affects the feel and ease of its care, many consumers, particularly those with lower incomes, would not choose to buy the flame-retarded garment (*48*). One of the main reasons that has been given for the decision of the Consumer Product Safety Commission to implement compulsory standards is to protect the poor.

The strictness of these standards, their compulsory nature, and their further extension should be critically reexamined. The benefits of flame retarding all children's clothing, adult sleepwear and clothing, and upholstered furniture (*49*) are arguable, as is the benefit of adding flame retardants to wool and other less flammable fabrics. Also unclear is the benefit of chemical additives in hospital garments for newborn babies, and in infants' clothing and sleepwear (*48*).

Another striking example of unnecessary flame-retarding treatment is in the

area of light-weight nylon tents used for backpacking and mountaineering. Of 119 documented injuries and deaths in the United States in tent fires during the years 1971 to 1974 inclusive, none occurred in nylon tents (*50*). Only 2 of 75 fires reported in this study involved nylon tents. In addition to the possible biological hazards of the flame-retardant compounds, their addition markedly increases the weight and cost and decreases the fabric tear strength. Even untreated tents have been known to tear under severe conditions leading to injury and death of the occupants (*51*). Thus, treated nylon tents are both heavier and potentially less safe. Nevertheless, legislation to require flame-retarding treatment of all tents is in force in California, as well as several other states.

Flame retardants added to plastics are obviously of less concern as environmental hazards than those added to clothing, yet any that are going to be eventually released into the environment in large amounts (such as the PBB's) should be given thorough toxicological testing. A few do appear to have been tested fairly thoroughly (for example, decabromobiphenyl oxide).

Responsibility

It is not clear who has the responsibility and authority for the establishment of flame-retardant standards that are safe, both from a fire and a biological point of view. The Consumer Product Safety Commission says that it has the responsibility to set performance standards, but not the authority to require that flame retardants be pretested for carcinogenicity or mutagenicity (*52*). The responsibility for safely meeting these standards is left to the chemical industry. Many industries do not accept this responsibility for carrying out cancer tests on large-volume chemicals. Thus, there is a conflict between government and industry as to who should be responsible for meeting biological and environmental safety standards. At present, no government agency has the authority for ensuring long-term safety of textile additives such as flame retardants, although the toxic substances law might eventually solve this problem. The strict flammability standards vitally affect many industries that are caught in the middle.

Few cancer tests in animals have been carried out with the large number of chlorinated and brominated chemicals (*7*) that make up a good part of about 100,000,000 pounds of organic flame retardants used annually in the United States. A similar situation existed 20 years ago when billions of pounds of chlorinated and brominated chemicals were introduced as pesticides and industrial chemicals even though animal cancer tests had not been performed. Both situations are disturbing for several reasons. Organic chemicals containing chlorine and bromine (and fluorine) are not used in natural biochemical processes and have not been normally present in the diet. A large number of these halogenated and industrial chemicals to which humans have unwittingly been exposed are proving to be careinogens in animals now that the cancer tests are being done. Many more compounds remain to be tested. As the 20- to 30-year lag time for chemical careinogenesis in humans is almost over, a steep increase in the human cancer rate from these suspect chemicals may soon occur. While waiting for the effects of the large-scale human exposure to the halogenated carcinogens—polychlorinated biphenyls (PCB's), vinyl chloride. Strobane-toxaphene, aldrin-dieldrin. DDT, trichloroethylene, dibromochloropropane, chloroform, ethylene dihromide, Kepone-mirex, heptachlorchlordane, pentachloronitrobenzene; and so forth—we might think about the avoidance of a similar situation with flame retardants (*53*).

References and Notes

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4. Mirex (dechlorane) is a teratogen and carcinogen and tris-aziridinyl phosphine oxide is a carcinogen and mutagen (NIOSH) [National Institute of Occupational Safety and Health, Washington, D.C. Registry of Toxic Effects of Chemical Substances]. pentachlorobenzene is a teratogen [K. S. Khera and D. C. Villeneuve, *Toxicology* **5**, 117 (1975)]. The highly toxic PBB's are suspected of being all of these and are discussed in this article.
5. Background information has been obtained from: Flammable Fabrics Act, Fed. Reg. **3**, (30 December 1975, pp. 59884–59957; Fact Sheet 25, U.S. Consumer Products Safety Commission, Washington, D.C., 1974).
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45. L. M. Kushner (U. S. Consumer Safety Commissioner) in letter to D. S. Duke, 11 August 1975; see also (44); "Analysis of injuries, association with specified wearing apparel items," U. S. Consumer Product Safety Commission (30 May 1975). These estimates only include cases where clothing was the first item ignited.
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47. It is instructive to try to estimate the dose of tris-BP that a child might absorb and to compare it with the dose of dibromochloropropane (the carcinogenic impurity in tris-BP) that was used in the carcinogenicity experiments (20) in rats. A cumulative dose of about 1600 mg of dibromo chloropropane resulted in gastric squamous carcinomas in 85 percent of the rats and mammary adenocarcinomas in 50 percent of the female rats. (Ethylene dibromide is a carcinogen of roughly similar potency.) We think that a cumulative dose of about 1600 mg is likely to be absorbed by a child during the course of a childhood wearing polyester pajamas treated with tris-BP. We estimate about 4000 mg of surface tris-BP in a 150 g (new pair) of pajamas with a surface area of 8000 cm^2: 500 $\mu g/cm^2$ of surface tris-BP. Absorption of nonpolar chemicals through the skin at appreciable rates appears to be the rule. In a study of 11 nonpolar chemicals applied to human skin (at 4 $\mu g/cm^2$), Feldman and Maibach (19) have shown the total absorption was from 1.5 to 50 percent with a mean rate of about 0.25 percent per hour. If 1 μg of tris-BP was absorbed per night from each square centimeter of skin then 1600 mg could be absorbed in about half a year and even if the rate was only 10 percent of this, that dose could be absorbed in 5 years. One would expect a decrease in the level of surface tris-BP as the pajamas were repeatedly washed, until a new pair was substituted. Thus, one does not know exactly what level of tris-BP is available for absorption through the skin and at what rate it is absorbed. To get the same effect of a chemical in a rat and a child, however, it is estimated that the child should receive a 20-fold higher dose (D. G. Hoel, D. W. Gaylor, R. L. Kirschstein, U. Saffiotti, M. A. Schneiderman, *J. Toxicol. Environ. Health* 1, 133 (1975)). However, tris-BP is a considerably stronger mutagen in our test than dibromochloropropane (about tenfold). [From our previous work on mutagenicity it appears extremely likely that tris-BP is a carcinogen. Although there is a rough correlation between mutagenic and carcinogenic potency (24), we do not have enough experience to attempt to predict a carcinogenic potency for tris-BP.] All these calculations are based on an amount of dibromochloropropane sufficient to produce cancer in almost all of the rats. If our assumptions are correct, even 1 percent of that dose of tris-BP could lead to an unacceptable incidence of cancer, in view of the millions of children at risk. A study (48) attempting to find the tris-BP metabolite dibromopropanol (or its conjugates) in human urine from two volunteers wearing pajamas treated with tris-BP was negative. However, in view of the risk we are discussing, the analytical method was insensitive (less than 0.2 ppm of the metabolite would not have been detected), and we do not know what percentage of any absorbed tris-BP would appear as dibromopropanol or its conjugates.
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49. A standard for all clothing is being formulated at the Center for Fire Research at the National Bureau of Standards for the Consumer Product Safety Commission.
50. R. F. Johnson, *Proceedings of the 8th Annual Meeting of the ICFF, New York City* (1974).
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52. A. C. Shakin, of the U.S. Consumer Product Safety Commission, in a memorandum to S. Butts, 26 March 1976, "The National Commission on Fire Prevention and Control has advised (36): 'The impact of new materials, systems, and buildings on users and the community should be assessed during design stages, well before use.'"
53. Supported by ERDA grant E(04-3)34 PA156 (to B. N. A.). We thank L. Haroun for assistance in the mutagenicity assays and D. Gold for other help with the study; we also thank M. Privat and H. Rosenkranz for information concerning their unpublished mutagenicity results with flame retardants and for help in other aspects of this work. B. L. Van Duuren for a sample of tris-BP and other help; and numerous colleagues in government and industry for criticism of the manuscript. A.B. was supported in part by NIH grant 1-F32-CA-05731-0.

Mr. DANIELSON. You mentioned the gentleman's name is Ames?

Ms. JOHNSON. Yes, sir.

Mr. DANIELSON. Is there any connection between that and the Ames test?

Ms. JOHNSON. The same guy.

Mr. DANIELSON. Thank you.

Ms. JOHNSON. Some people said this morning that as a practical matter the Government required Tris to be used in meeting the standard. It may well be true that when the standard was promulgated, that Tris was the only chemical on the market to meet the standard. But we ought to focus not at the time the standard was promulgated, but the time of the ban. What alternatives should and could industry have been using in 1977 that they were not in 1971?

Let me say that many of the alterantive chemicals, and I have an article from Textile Industries magazine which describes marketed alternatives as of 1976, which I would, with your permission, enter into the record.

Mr. DANIELSON. How many pages?

Ms. JOHNSON. I would say 10.

Mr. DANIELSON. Very well, without objection, it is received.

[The information follows:]

What's Available for Flame Retardant Textiles

An updated analysis of commercially available chemicals for meeting present and potential government standards—plus a table of flame retardant fibers

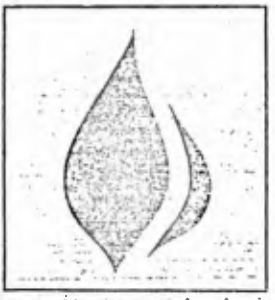
BY R. BRUCE LEBLANC
President, LeBlanc Research Corp.

THIS IS AN UPDATE of articles on flame retardant textiles that have appeared in the February issues of TEXTILE INDUSTRIES the past three years. Additions to and deletions from *Tables 1 and 2* have been made due to developments during 1975.

Tables 1 and 2 are an attempt at a pragmatic approach to advise the textile and related industries as to *what is actually available* for meeting present flammability standards and possible standards in the future. This will, we hope, take some of the mystery out of tables of flame retardant products which list hundreds of flame retardant chemicals and which create misunderstandings among industry, government, and the consumer groups.

Discussion of Tables. Abbreviations used in the tables are: DAP—diammonium phosphate; DBDPO—decabromodiphenyl oxide; L & TD—launderings and tumble dryings; TDBPP—tris(2,3-dibromopropyl) phosphate; PVC—poly (vinyl chloride); THP salt—tetrakis(hydroxymethyl)phosphonium salt; FR—flame retardant.

The finishes listed in *Table 1*, when properly applied, are capable of rendering a fabric self-extinguishing in a vertical flame test after the foreseeable number of restoration treatments (launderings and drycleanings). It is reasonable that there may be flammability standards for some end-uses in the future that will not require self-extinguishing properties in a vertical flame test. Flammability properties such as slow rate of burn and easy extinguishment might be desirable in these cases; for these applications the same finishes



in *Table 1* might be used at lower levels of application. In addition, for these end uses no finish may be required for certain 100% polyesters, 100% nylons, blends of these two fibers and for woolen fabrics.

It is important to point out that even though there are thirteen durable finishes listed in *Table 1* for cellulosic apparel, nine are based on tetrakis(hydroxymethyl) phosphonium salts (THP salts) or derivatives of them. For example, there are three different manufacturers of THP salts and each manufacturer has different names for his products. Much the same can be said for finishes for polyester apparel—nine finishes based on tris(2,3-dibromopropyl)phosphate are listed. Seldom does a textile finisher have a choice of more than two or three finishes for a particular apparel end-use. For example, presently only Pyrovatex CP, Fyrol 76 and THPOH-NH_3 are used for children's cotton sleepwear. The THPOH-NH_3 is a candidate only if the finisher has special ammonating equipment.

Table 1 lists only finishes which could be used on certain fibers and/or certain markets. Where a fiber or a market is not listed, either finishing is not a viable process or finishing is not required to give fire retardance. For example, acrylic fabrics cannot now be finished commercially to give fire retardance which meets a vertical flame test such as the Children's Sleepwear Standard FF 3-71. But modacrylic-fabrics will meet this standard and are listed in *Table 2*.

Carpets of most pile yarns can meet the Carpet Standard DFF 1-70 and 2-70 by proper construction of face yarns and backing without necessity of finishing the face yarns. Even though wool and cotton carpet finishes are listed in *Table 1*, this does not imply that properly constructed wool or cotton carpet will not meet the carpet standard without finishing.

Mattresses can be properly constructed without finishing to meet the Mattress Standard FF 4-72 and therefore no finishes are listed for this market.

The finishes in *Table 1*, with few exceptions, are applied by a pad-dry-cure method. The Proban finish and the THPOH-NH_3 finish require a chemical cure with ammonia. The Multi-Krome process for wool was developed as a dyeing process.

The nondurable or temporary finishes listed in *Table 1* for drapery are lumped together without any attempt being made to list the numerous products that fall into this category. They can be used only in specialized markets where the product is not laundered or cleaned very often or else the flame retardant is re-applied after certain periods of cleaning.

The chemical natures of the finishes and fibers in *Tables 1* and *2* are based on information gleaned from

Text continued on page 35

Table 1. Textile Finishes

Market	Fiber	Finish	Chemical Nature	Company	Strong Points	Remarks
Apparel	Cotton or Rayon	Pyrovatex CP (1)	N-methylol dimethyl phosphonopropiona-mide	Ciba-Geigy Corp.	Durable to over 50 L & TD; soft handle	Relatively high strength losses
		THPC and THPS finishes (2, 3, 4)	Tetrakis (hydroxy-methyl) phosphonium chloride and sulfate	Hooker Chemical Co.	Durable to over 50 L & TD	Problems with hand and strength losses
		THP chloride (2)	Tetrakis (hydroxy-methyl) phosphonium chloride	Albright & Wilson (U.S. agent is Aceto Chem. Co.)	Similar to THPC	Similar to THPC
		Pyroset TKC (2, 5)	Tetrakis (hydroxy-methyl) phosphonium chloride	American Cyanamid Co.	Similar to THPC	Similar to THPC
		Pyroset TKP (5, 6)	THP salt with mixed phosphate and acetate anions	American Cyanamid Co.	Similar to Pyroset TKC	Problem with hand
		Pyroset TKS (5)	THP oxalate	American Cyanamid Co.	Similar to Pyroset TKC; softer hand	Relatively high strength losses
		Pyroset TKO (37)	THP sulfate	American Cyanamid Co.		Similar to THPS
		Flame Snub WDN (38)	THPOH	Arkansas Co.	Durable to laundering	
		Proban (7, 19)	THP salt-urea pre-condensate	Albright & Wilson (Agent in N.A. is Erco)	Soft handle; good strength retention	Requires special ammoniating equipment
		THPOH-NH_3 (8)	THP salts at a pH of about 7	All of above manufacturers of THP salts	Soft handle; good strength retention	Requires special ammoniating equipment
		MCC 100/200/300 (9, 10)	Trimethyl phosphoramide plus melamine resin	Monsanto Co.	Durable to 50 L & TD	Stiff hand; limited availability
		Fyrol 76 (11)	Condensate of bis (betachloroethyl) vinyl phosphonate and alkyl phosphonate	Stauffer Chemical Co.	Durable to over 50 L & TD; some DP properties	Relatively high strength losses; some handle problem
		DAP-Urea-Ti (26)	Obvious	Various	Low cost; durable to over 50 L & TD	Uses aqueous titanyl sulfate

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Table 1. Textile Finishes (Con't.)

Market	Fiber	Finish	Chemical Nature	Company	Strong Points	Comments
Apparel (Con't.)	Wool	THP Salts	(See previous page)	(See previous page)	Durable to laundering and dry-cleaning	
		Proban (12)	(See previous page)	(See previous page)		
		Multi-Krome (13, 14)	Mordanting with Cr, Ti, or Zr Salts	Various		
	Polyester	Apex Emulsion 462-5 and 567 (15)	tris (2,3-dibromo propyl)phosphate	Apex Chemical Co.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Hamcogard FR	tris (2,3-dibromo propyl)phosphate	Hamilton & Auslander Co.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Fyrol 59	tris (2,3-dibromo propyl) phosphate	Stauffer Chemical Co.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Tanotard PN-2	tris (2, 3-dibromo propyl) phosphate	Chas. S. Tanner Co.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Glo-tard PE-2 and PE-10	tris (2,3-dibromo propyl) phosphate	Glo-Tex Chemicals Inc.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Antiblaze 19	Organic phosphorus compounds	Mobil Chemical Co.	Durable to laundering	
		Cav-Gard FR 1811 and FR 1812	tris (2,3-dibromo propyl) phosphate	Cavedon Chem. Co.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Pyrosan 497	tris (2,3-dibromo propyl) phosphate	Laurel Products Co.	Durable to over 50 L & TD	Less durable to dry cleaning; some UV instability
		Pyrosan 546	Organic phosphorus compounds	Laurel Products Co.	Durable to laundering	
	50/50 and 65/35 P/C blends	F/R P-44 (27)	DBDPD and antimony oxide	White Chem. Co.	Durable to 50 L & TD; no strength loss	Problems with hand and color for some end uses

Table 1. Textile Finishes (Con't.)

Market	Fiber	Finish	Chemical Nature	Company	Strong Points	Comments
Apparel (Con't.)	50/50 and 65/35 P/C blends	F/R P-53	DBDPO (to be used in conjunction with THP salt finishes and an acrylic binder)	White Chem. Co.	Durable to laundering	Problems with hand and color for some end uses
	Reverse blends of polyester and cotton	THP Salts (5, 16)	(See above)	(See above)		Stiff hand
		F/R P-44 (27)	(See above)	(See above)	(See above)	(See above)
Sheets and Bedclothes	All Cotton and reverse blends	Same as apparel				
Drapery and Upholstery Fabrics	Cellulosics	Same as apparel if extensive resistance to both laundering and drycleaning is desired				
		LRC-6 (28)	DAP-Urea-PVC-Sb_2O_3	Various	Low Cost	Not durable to very hard water
		Fi-Retard NBX	Inorganic salts and nitrogen	Arkansas Co.	Semi-durable to dry cleaning	
		Pyroset CP (18)	Cyanamide and phosphoric acid	American Cyanamid	Low cost; durable to dry cleaning	Semi-durable to laundering; relatively high strength loss
		A number of water-soluble non-reactive organic and inorganic compounds	Various, such as phosphate salts and esters, sulfamates, sulfates, dicyandiamide, boraxboric acid, borophosphates, etc.	Arkansas Co., Apex Chem. Co., Laurel Products Co., U.S. Borax, etc.	Low Cost	Not durable to laundering; some durability to dry cleaning
	Wool	Same as for wool apparel				
	Polyester	Same as for polyester apparel				
	Nylon	Nyloset	Thiourea-formaldehyde derivative	Scher Bros. Inc.	Low Cost	Rather stiff hand; semi-durable to laundering
		Nylo-Gard FR	Thiourea-formaldehyde derivative	Hamilton-Auslander Co.	Low cost	Rather stiff hand; semi-durable to laundering

Continued on page 35

Table 1. Textile Finishes (Con't.)

Market	Fiber	Finish	Chemical Nature	Company	Strong Points	Comments
Drapery and Upholstery Fabrics	Nylon (Con't.)	Celluset (15)	Thiourea-formaldehyde derivative	Apex Chem. Co.	Low cost	Rather stiff hand; semi-durable to laundering
	Polyester/ cotton blends	Same as for polyester/cotton blends for apparel				
Industrial and military fabrics	Cotton or rayon	THP Salts (20)	THP Salts	Hooker, American Cyanamid, Albright & Wilson	Durability to laundering	Some hand and strength loss problems
		FWWMR (20, 21)	Sb_2O_3, chlorinated paraffins, etc.	Various	Fire, weather, mildew, rot and water resistant	Stiff hand
		LRC-6 (28)	DAP, urea, Sb_2O_3, PVC	Various	Low cost	Not durable to very hard water laundering
	Wool	Multi-Krome (13, 14)	Mordanting with Cr, Ti or Zr Salts	Various		
Carpet	Cotton or rayon	THP Salts (22)	THP Salts	Hooker, American Cyanamid, Albright & Wilson	Meets FF 1-70 and 2-70	
		Pyroset CP (22)	Cyanamide and phosphoric acid	American Cyanamid	Meets FF 1-70 and 2-70	
		MCC 100/200/300 (9)	trimethyl phosphoramide	Monsanto Co.	Meets FF 1-70 and 2-70	
	Wool	Multi-Krome (20, 21)	Mordanting with Cr, Ti, or Zr	Various	Meets FF 1-70 and 2-70	
		Pyroset CP (23)	Cyanamide and phosphoric acid	American Cyanamid	Meets FF 1-70 and 2-70	

the literature and the author's working experience with these finishes and fibers.

Under comments in the tables, it is indicated if the fiber or finish is not a fully commercial product or process. The criterion for listing a fiber or finish which is not fully commercial is that it must have been processed on full-scale equipment to produce a product which showed a reasonable technical success. Often the cost relative to other products and processes and consumer acceptance have not been completely evaluated.

The tables have to be used with some input from the user as to what is desired in the product what type of flammability properties are desired and what standard must be met. He must pick the best compromise *See Table on page 37; text continued on page 39*

Table 2. Flame Retardant Fibers

Fiber	Company	Chemical Nature	Composition of Fabrics	Comments and Major Markets
Acele FLR	Du Pont	Acetate with TDBPP additive (24)	100% acetate and blends with up to 20% polyester	Apparel
FR Acetate	Celanese	Acetate with TDBPP additive	100% acetate and blends with up to 20% polyester	Apparel
SayFR	FMC	Acetate with TDBPP additive (24)	100% acetate and blends with up to 20% polyester (25)	Apparel
Arnel FR	Celanese	Triacetate with TDBPP additive	Blends with polyester	Apparel
Dacron 900F (29)	Du Pont	Polyester copolymer with ethoxylated tetrabromo bisphenol A	100% Polyester and blends with certain fibers	Apparel; development product
HEIM (30)	Toyobo Co.	Polyester containing aromatic, sulfur-containing phosphonate	100% Polyester and blends with certain fibers	Drapery; semi-commercial
Extar FR (39)	Teijin Co.	Bromine containing polyester		Developmental product
Orlon FLR (29)	Du Pont	Modacrylic		Developmental product, apparel
SEF (31)	Monsanto	Modacrylic	100% SEF and blends with acrylic or polyester	Apparel, drapery, and industrial fabrics
Verel	Eastman	Modacrylic	100% Verel and blends with rayon or acrylic	Interior furnishings
Teviron	Teijin	Vinyon	100% Vinyon and blends	Apparel, interior furnishings
Leavil (32)	Montedison	Vinyon	100% Vinyon and blends	Apparel, interior furnishings
Clevyl T	Rhone-Poulenc	Vinyon	100% Vinyon and blends	Apparel, interior furnishings
Cordelan (40)	Kohjin Co.	Vinal-Vinyon Matrix	100% Cordelan and blends with up to 20% of cotton or 40% of polyester	Apparel, interior furnishings

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Table 2. Flame Retardant Fibers (Con't.)

Fiber	Company	Chemical Nature	Composition of Fabrics	Comments and Major Markets
Vaïren (33)	Teijin	Vinyon	100% Vinyon and blends	Apparel, interior furnishings
Avril PFR	FMC	Rayon with a phosphazene derivative added	100% Rayon and blends with fibers such as Nomex	Safety apparel, aircraft upholstery and others; developmental product
Bell Flame FR	Kanebo Co.	Rayon with FR additive		Developmental product
Wool		Protein	100% Wool and blends with Fiberglas, Vinyon, Nomex, etc.	Apparel, industrial workclothes, aircraft upholstery and others
Fiberglas	Owens-Corning	Glass	100% Fiberglas and blends	Interior furnishings, industrial workclothes and others
Nomex III	Du Pont	Aramid (Aromatic Nylon)	100% Nomex and blends with Kynol, Wool, etc.	Apparel, industrial fabrics, airline upholstery and others
Durette	Fire Safety Products Inc.	Modified aramid	100% Durette	Space program, high oxygen areas, race drivers' gloves, etc.
Kynol (34)	Carborundum	Novoloid	100% Kynol and blends	Industrial fabrics, specialty products

among a number of things—fibet, hand, cost, durability to laundering and drycleaning and aesthetics.

Recent Developments in Finishing. The Proban finish of Albright & Wilson has not found commercial acceptance yet in the American market for children's cotton sleepwear. It is no longer handled by Ventron, but is distributed by Albright & Wilson's subsidiary company Erco in Canada.

The author has found no evidence yet of commercial acceptance of the White Chemical Co. F/R P-44 finish for polyester/cotton blend fabrics. White Chemical introduced a new product, F/R P-53, which is a 60% active decabromodiphenyl oxide. It is recommended that this be used with an acrylic binder in conjunction with a THP salt-urea finish for polyester/cotton fabrics. There might be some stability and color advantages of this latter finish over the experimental T.H.P.C.-urea-poly(vinyl bromide) finish developed by the Southern Regional Laboratory (41)*.

$THPOH\text{-}NH_3$ has been reported as a feasible finish for reverse blends of polyester/cotton fabrics and there has been limited commercial production of such finished fabrics.

It appears that Ciba-Geigy have withdrawn their Pyrovatex 3762 from the market. This finish was a phosphonium oligomer introduced about three years ago for polyester/cotton blends. Handle of the treated fabrics and odor during processing were probably contributing factors in this decision.

Hooker and American Cyanamid have introduced tetrakis(hydroxymethyl) phosphonium sulfate under the trade names THPS and Pyroset TKO respectively. A major reason for this is the possibility that their THP chlorides may theoretically produce bis(chloromethyl) ether, although no BCME has ever been detected in mills running THP chloride. Hooker will be phasing out their THPC.

Stauffer introduced two variations of their Fyrol 76 finish for cotton fabrics—a low N-methylol acrylamide and a homopolymer finish (42). The advantages of these two systems over the regular Fyrol 76 finish are improved odor, stability of the treating bath, hand, strength retention, and resistance to chlorine bleach. These improved properties are obtained at some sacrifice in durable press properties and at some increase in chemical cost.

A number of companies have introduced finishes for 100% polyester fabrics based on tris(2,3-dibromopropyl)phosphate. These finishes have

*Numbers in parentheses indicate references at the end of the article

the lion's share of the FR polyester business at present. Mobil Chemical and Laurel Products have introduced Antiblaze 19 and Pyrosan 546 respectively for polyester. These products do not contain halogen, but utilize phosphorus as the basis for flame retarding the polyester.

Recent Developments in Fibers. Cotton Incorporated announced the development of a new flame retardant cotton batting named Flex-Xel. It is made from cotton and other textile fibers (probably thermoplastic man-made fibers) which are bonded together with a thermoplastic resin. It reportedly can be used in mattresses to pass the cigarette test without a layer of urethane foam over it. It is being produced at National Bedding and Furniture Industries, which has a capacity of two million pounds a year.

Du Pont introduced a modified aramid staple fiber called Nomex III. It is promoted for use in protective clothing and is said to offer greater thermal stability than conventional Nomex. Du Pont claims that fabrics made from Nomex III offer protection against second degree burns for 50% longer than flame retardant cotton of the same weight and construction under thermal conditions simulating those encountered by fire fighters.

The Kohjin Co. of Japan (producers of Cordelan PVC/PVA matrix fiber) filed to have the courts protect them against their creditors under the Japanese rehabilitation laws. Although Cordelan sales were down, heavy losses in real estate investments were the major cause of the company's problems. Earlier it was rumored that Kohjin had been trying to sell its subsidiary that manufactures Cordelan. Late in the year Kohjin International (the U.S. representative of Kohjin's Cordelan Division) stated that Cordelan fiber will continue to be available in the U.S. Sales have been at the level of 10 million pounds per year. They are offering a new blend of 60/40 Cordelan/polyester at a lower price than the past 75/25 blends.

Monsanto sold the exclusive rights to the production and marketing of Durette to Fire Safe Products, Inc. Durette is a chemically modified aromatic polyamide fiber used in the fabrics for NASA, hypobaric chambers, high oxygen areas in hospitals and race drivers' gloves.

Recent Product Development. This year saw a large increase in the introduction of fire resistant products on a voluntary basis for many end-uses. It will take about a year to know what the commercial acceptance of these products is.

A number of mills are producing fabrics to meet FF 5-74 for apparel manufacturers and merchandisers to produce garments in categories other than children's sleepwear. J. C. Penney marketed the largest volume and variety of these garments. Other manufacturers and retailers (Sears, Levi Strauss, Pioneer Ltd.) marketed FR garments in selected categories. For the most part, these garments meeting the FF 5-74 standard rely on man-made fibers. FR cotton accounts for only a small part of the FR adult sleepwear on the market for a variety of reasons—laundering problems with FR cotton, cost of finishing, cost of record keeping, etc.

In the protective clothing area, FR cotton-sateen uniforms will be required by the New York City Fire Department by July 1977. American Kynol introduced a new line of durable press, flame resistant protective clothing of Kynol. The durable press treatment is said to increase abrasion resistance without affecting flame resistance. Metcalf Bros. & Co. is offering a 100% wool uniform with a flame resistant finish to meet the proposed FF-7 standard (involving testing specimens at 65% rh after 35 launderings).

Carolina Narrow Fabrics (as reported in TI for January 1975) produces a line of carpeting called "Blazeban," which is made of glass fiber pile and backing. It is promoted for use where non-flammability under extreme heat loads is desired, such as in hotel corridors, theatre aisles, airplane aisles, etc.

Future Developments. New standards of flammability for textiles are being considered by various agencies of the Federal Government and a number of State Governments. The CPSC is studying standards for general wearing apparel and the FAA is considering a standard for flight attendants' uniforms.

It appears that industry is more advanced in the production of safe fibers and fabrics than government is in evaluating the need for them and developing realistic test methods and standards. For example, the FAA has determined that certain flight attendants uniforms will ignite from a small fire. The flight attendants' union and some consumer advocates are pushing for flight attendants' uniforms standards similar to the Children's Sleepwear Standard. The reason given is that flight attendants will aid passengers in getting off the plane during emergencies involving fires. This need is mainly based on a few tests done at Gillette Research Co. in which certain items of flight attendants uniforms including a raincoat were ignited and burned. No statistics have been developed to show that flight attendants uniforms have ever made an emergency situation on a plane more hazardous. For the most part, flight attendants uniforms are made of polyester, nylon and wool. Most of these garments are difficult to ignite, slow burning and easily extinguishable. (Some items such as polyester/cotton raincoats would not normally be worn in an emergency situation on the plane). No uniform that a flight attendant

would wear or could wear for his normal duties could offer much more protection in a large cabin fire.

The CPSC has contracted with the National Bureau of Standards to develop a general wearing apparel standard to upgrade CS 191-53. This was done without the benefit of any statistical evidence that a standard was needed, without knowing which textile properties were unreasonably hazardous for which categories and which types of fabrics were the ones which were unreasonably hazardous. NBS has developed what they call the Mushroom Apparel Flammability Test (MAFT). NBS has reasoned that the hazard associated with burning fabrics is the heat transferred to the body. They devised a tester which utilizes a cylinder of fabric around a copper core containing heat sensors. They then ignited the fabric on the surface with a small flame and measured the rate of heat transfer from the burning fabric to the heat sensors. For a fabric to be a Class A fabric (the least flammable category in the test), it must show a maximum rate of heat transfer of 0.1 cal/sq cm/sec. Class B fabrics have maximum rates of heat transfer more than 0.1 and ignite in more than one second. Class C fabrics ignite in one second or less.

It was found that certain fabrics (such as heavy cotton denim) burned on the outside only and very little heat was transferred to the heat sensors. NBS decided to cut a hole in the fabric at the point of ignition so that raw edge ignition would cause the fabric to burn on both sides and so that heat transfer measured would be higher. It is not known if this is realistic or not, since very few if any garments involved in flammability accidents are ignited on a raw edge and burning of some fabrics on the outside in test situations is a very probable occurrence.

There is no doubt that the total heat transfer to the body and area of burn are the important criteria to determine the type of skin burn and the size of the burn. It has not been demonstrated on a large variety of fabrics that measuring maximum rate of heat transfer in the MAFT will measure these criteria. It is possible that a fabric in the MAFT will burn initially to give a maximum rate of 0.1 calories, but will subsequently self extinguish and not burn over a wide area. In addition the MAFT appears to require a complex and expensive apparatus for a routine fabric flammability test. It may be more logical to develop a test which measures fabric mass rate of burning and area of burn (43). Another serious shortcoming of the MAFT is that ease of extinguishment is completely ignored. This probably is as important as maximum heat transfer in evaluating the hazard of a burning fabric.

It is very important that any test method developed for measuring fabric flammability must correlate with real burning situations. This can only be done by testing fabrics on the small scale tester and testing garments of the fabrics on mannequins or more sophisticated equipment such as Du Pont's Thermn-Man. Industry groups are presently doing this work.

This is particularly important for the major factor in apparel fabrics—polyester/cotton blends. At the present time there is no commercially acceptable method of making polyester/cotton fabrics meet a standard such as FF 3-71. It should be feasible to treat polyester/cotton fabrics to show easy extinguishment and slow burning characteristics (44). A realistic test method and standard should allow for treatment of polyester/cotton fabrics to achieve flame retardance at a reasonable cost and still retain some of the aesthetic properties of the blend.

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Carter Streamlines

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required to remove a specimen from the desiccator, mount it on a holder, and place it into the cabinet.

This rapid transfer of specimen and its accurate placement in the chamber is possible because of the design of the specimen holder and its accompanying fixture the "bayonet" and its receptacle in the test cabinet enable proper positioning of the specimen with one short motion. The flame is positioned, timed, and withdrawn automatically by merely pressing a button. No preparation time for setting a stopwatch is required.

4. The char length of the specimen is measured by laying the specimen on a flat surface and measuring from the original lower edge of the specimen exposed to the flame to the uppermost point of penetration of the flame on the specimen.

Carter has compared test results using the Alternate Apparatus and the standard apparatus. Two fabrics were tested: A 100% polyester single knit jersey, topically treated for flame retardance and a 50% FR Amel/50% polyester single knit jersey. From a study of these test data on the 100% polyester it was concluded that testing with Carter's Alternate Apparatus is equivalent with respect to char length, to testing by the standard method which yields more variable results.

By mechanizing flame insertion, the human error is eliminated. From a study of test data on the blend, the values from the Carter Alternate Apparatus are shown to fall within control limits, with the exception of one value for average char length. The char lengths are shown to be about 6% longer with the Carter Apparatus. This difference is statistically significant, according to Mr. Beckwith. As in the case of the polyester test, the variation among test results is significantly less for Carter's Apparatus than for the standard, as shown by values of coefficience of variation.

In sum, the Carter Alternate Apparatus is less variable than the standard apparatus because the specimen is always mounted in a flat configuration and the tone of flame impingement is always a precise three seconds. A variation of 0.1 second, more or less in flame time is known to affect the char length proportionally. Thus the Carter Apparatus eliminates the need for operator control over flame impingement thereby eliminating the need for supervision.

The time required for testing is at least one half and up to one third of that required in the Standard Apparatus. This means that the Carter Company could reduce its testing costs by $50,000 annually in view of the large volume of manufacturing being done within the company. But more importantly to Carter is that test data can be obtained much faster on production lots, thus permitting a smooth "hand to mouth" flow of production from finishing plant to garment plants. TI

What's Available

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Ms. JOHNSON. None of these alternative methods of retarding flames are exactly the same as Tris, and the article points out clearly that whenever you are talking about flame-retarding clothes, you are making trade offs. You weigh a little less durability verus a little less esthetic feel versus a little less dye permanency, et cetera, but Tris emerged as the marketplace victor in my view only because the health effects were not considered in the trade-off, and that if the industry had been more careful in the early 1970's and the middle 1970's, that trades off would have been factored in, and the other commercial alternatives may well have emerged triumphant.

Lastly, I want to point out that there were positive reasons for being worried about Tris itself. The methods for testing chemicals for carcinogenicity have been a matter of consensus since the early 1950's, and have been required by government agencies since at least the late 1950's. There are no dramatic breakthrough tests available between 1976 and 1977. We are talking about plain old 2-year chronic feeding studies in rodents, and Tris was introduced onto the market without these kinds of studies.

As of 1971-72 the chemical industry had not done these studies, studies which pesticide manfacturers were routinely doing, food additive manufacturers were routinely doing, drug manufacturers were routinely doing, virtually all of the learned scientific societies routinely enforced, and yet the textile industry was not conducting such studies.

Ms. JOHNSON. Nor had such studies been conducted when the ban occurred in 1976. As a matter of fact, the long-term study we do have was not conducted by the textile industry, the chemical industry, or anyone else. It was paid for by the U.S taxpayers.

On the Tris, first we have the sheer volume of exposure children undergo. As I stated, fabric contained 10 to 20 percent Tris by weight. That is a lot. Dr. Ames has described this as close to a shot glass full per garment.

A witness this morning said he had rejected one alternative because that alternative contained 35 percent chemical.

Why did he get alarmed about 35 percent chemical in children's fabric and not get alarmed by 20 percent? It seems to me that fact alone would say, my God, we ought to know more about this chemical.

Ten million pounds of Tris were used for flame retardants in fabrics together with plastic. Sleepwear touches the whole body for periods of 8 hours or more.

We have known for a number of years that chemicals virtually identical to Tris in chemical structure are rapidly absorbed through the skin. We knew that Tris was used for 30 million children, that is the population at risk from Tris, a group more vulnerable to toxic chemicals than adults are.

We know that Tris, and we have known for a number of years, that Tris is structurally similar to other chemicals proven to cause cancer. We have also known that Tris contains three impurities which are either common carcinogens themselves or are structurally similar to ethylene dibromide, itself a known carcinogen since at least 1973.

Indemnity should not flow to an industry which continued to opt for Tris until the final coup de grace was rendered by the taxpayer-funded study.

Although we are opposed to indemnities, we would not object to this committee considering loans for certain segments of the industry.

To the apparel industry's credit, once they had positive evidence of the Tris hazards and indisputable evidence of Tris hazards, they did begin an aggressive search for alternatives. They did not attempt to oppose or delay agency action on Tris, and that is fairly rare. Frequently groups such as this spend an awful lot of money trying to keep government agencies from acting and the apparel industry did not do that, much to its credit.

The apparel industry did evidence great concern about the qualities of a chemical which had been sold them by a chemical industry which had the resources to test and evaluate Tris and test its alternatives, but did not do so.

We note there are lawsuits underway to determine exactly who in the chain of production was most responsible. Ordinally trial procedures are designed to examine critically the facts of each individual case. They should not be short-circuited by hasty legislation.

Because litigation is time consuming, however, and because the outcome is not certain, we would have no objections to the provisions such as that in the Small Business Administration loans which permit loans by the Government for bringing plants into compliance with the Water Pollution Control Act.

Let me add one other thing: The value of approaching this through a loan system is it does not alter the marketplace incentive system. It provides relief without following around with normal marketplace operations.

Mr. DANIELSON. Mr. Harris?

Mr. HARRIS. Thank you, Mr. Chairman

I appreciate your testimony very much, and agree with a great deal of what you say with respect to industry responsibility in health and safety hazards.

The main point I have been trying to understand—unfortunately it deals with dates and years I cannot quite keep in focus—is your contention that the dangers of the carcinogenistic effect of Tris was known as far back as 1971 and 1972?

Ms. JOHNSON. I am not saying we knew Tris was a carcinogen at that time. Nobody knew that. I am saying there were alarm signals that a careful scientist would have taken as a reason to test.

Mr. HARRIS. This relates to previous testimony specifically. You would challenge the testimony that the industry, when confronted with the need to come up with a new product, a fire-resistant product or a flame-resistant product, that they should have known then, a reasonable, prudent man in industry should have known then that Tris was of a nature that it should have been tested extensively before use?

Ms. JOHNSON. The period I wanted to focus in on was the time of the ban, that they should have known.

Mr. HARRIS. I am sure I can recall, but I think it's probably on your mind better than mine, the ban is in 1976?

Ms. JOHNSON. No; it is 1977.

Mr. HARRIS. OK.

When was the standard, the fire standard?

Ms. JOHNSON. It was 1972 when it went into effect, proposed in 1971.

Mr. DANIELSON. When did you say?

Ms. JOHNSON. It was 1972.

Mr. DANIELSON. I thought the ban was in April of 1977.

Mr. HARRIS. The ban on Tris is April of 1977. The institution of the new standards with regard to flame resistance was in 1972.

Mr. DANIELSON. They were 1971 and 1972, I believe.

Mr. HARRIS. As I understand it, it was at that point in 1972 that the industry started using Tris in order to meet the standards that were then promulgated.

Do you feel that with the state of the art and the nature of the chemical, in retrospect, the industry should have known at that point that "the possible carcinogenic effects from absorption of this type of product should have been tested extensively before it was instituted?"

Ms. JOHNSON. I guess I am not sure about 1972, but I am really sure about 1975, which is when animal studies should have already been completed.

Mr. HARRIS. You feel that the industry really was negligent in not at least starting studies on this. I am trying to recall my own frame of mind and the frame of mind of the country and scientists at that time.

Ms. JOHNSON. What I am asking is do we want industry to take responsibility for testing their own products.

Mr. HARRIS. Yes, we do.

Ms. JOHNSON. And my answer is yes, and then the second question is would indemnifying losses from health and safety bans discourage industry from taking responsibility from testing their own products, and the answer is yes.

Mr. HARRIS. I think I agree with both those points. What I am trying to really establish in my own mind here is this: Was there a responsibility; are we talking about the apparel industry dealing with absorption of carcinogens; and did they drop the ball in not doing extensive research on this product before its use?

Ms. JOHNSON. The industry failed in its responsibility to test the health effects of their products. They failed abysmally and completely. I don't know which segment of industry should bear the losses for that failure. It may well be that the courts determined that it was the chemical industry that supplied Tris to Springs Mills itself that should bear the loss, that it may be the chemical industry rather than the apparel manufacturers.

Certainly the chemical industry had the scientists, they had the procedures for doing research, they had procedures for looking into the chemical structure of Tris and knowing it was a dog.

That is all.

Mr. HARRIS. Thank you very much, Mr. Chairman.

Mr. DANIELSON. Thank you.

Mr. Coffey?

Mr. COFFEY. Two quick questions, thank you, Mr. Chairman.

The first petition that the Environmental Defense Fund filed with the Consumer Product Safety Commission was in March of 1976.

At that time, I understand what you were requesting was that the products containing Tris be labeled; is that right? That was in March of 1976.

Why didn't you at that time ask that there be a ban?

Ms. JOHNSON. Right. Good question.

At that time what we had was the results in the Ames test, which is an inveterate laborabory testing. It involves exposing bacteria, organisms in the petri dish to a chemical and seeing whether the genes are mutated or not.

The Ames test is considered to be a neat test for screening chemicals to find out which ones should be tested further in living animals for long periods of time.

In recent years the Ames test has been found to be very good at predicting which chemicals will cause cancer in long-term animal studies. But, we did not think that the Ames test results alone warranted a ban, simply because we didn't have long-term animal studies.

In the winter of 1976 the National Cancer Institute long-term animal studies results became available, and those results showed that animals got cancer from Tris, and then at that point we said, "My God."

Mr. COFFEY. But as of March of 1976 you simply felt there was not enough evidence to justify an outright ban; is that correct?

Ms. JOHNSON. That is correct.

Mr. COFFEY. Thank you, Mr. Chairman.

Mr. DANIELSON. Just to round out the record, according to the information that counsel has summarized for me on these dates, going back to 1953 the Commerce Department issued flammability standards for fabrics. The Flammable Fabrics Act was made effective July 1, 1954. On July 29, 1971, regulation FF3-71 went into effect, and that was the one that applied to children's sleepwear in sizes zero to 6; that was effective July 28, 1972. But it was issued July 29, 1971.

There was a 1-year get ready period.

Under the Consumer Product Safety Act, which we passed in 1972, the Consumer Product Safety Commission took over the regulatory function and a second flammability standard, FF5-74 was promulgated in 1974 to apply to the sleepwear sizes 7 to 14, and it was made effective May 1 of 1975.

I am just trying to tie the record together here a little bit.

Thank you very much, Ms. Johnson.

We have one remaining witness, and I am going to have to apologize and state we just cannot hear you today. It is a quarter to 2 and I have already broken several appointments and, happily, the remaining witness, Mr. David Moulton and also Mr. Mark Green of Congress Watch are local residents, or residents here in the District, and it is not quite such a burden as bringing witnesses up from Texas or South Carolina.

I apologize but we have run out of time. There is a vote on the floor right now and it's a pending bill in which I have an amendment.

We will also, without objection, include in the record at this point the statements of the Hon. Les AuCoin, Stone Manufacturing Co., and American Yarn Spinners Association.

[The statements follow:]

STATEMENT BY HON. LES AUCOIN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. Chairman, I welcome this opportunity to submit testimony on behalf of H.R. 7158, the measure to provide for the payment of losses incurred as a result of the ban on the use of the chemical TRIS in apparel, fabric, yarn, or fiber. I hope that you and the Committee will look favorably upon this legislation.

The requirement that children's sleepwear be flame-resistant, issued in 1971 by the Secretary of Commerce, is a worthy and commendable one. However, the two-year time frame insisted upon by the Department of Commerce made it impossible to carry out adequate tests for substances that would retard flame. At the time the flammability standard became effective, and for several years thereafter, the best and safest chemical treatment to retard flammability was TRIS. Largely because of the government's requirements, therefore, much of the children's sleepwear produced for domestic sale was treated with TRIS.

Unfortunately, as we all know, TRIS was subsequently found to be a potent carcinogen. On April 7 of last year, the Consumer Product Safety Commission pronounced a ban on the sale of any garments or cloth containing this chemical.

Thus, the 100 to 110 companies who manufactured, distributed, or sold fabrics and garments treated with TRIS found themselves answerable to two conflicting government dictums; found themelves caught between a rock and a hard place.

The plight of Jayvee Brand, Inc., a company that manufactures infantwear in Lake Oswego, Oregon, is illustrative of the industrywide problems that have resulted from the ban on TRIS. While the heaviest burden on the company was the initial cost of buying back merchandise treated with TRIS, additional costs continue as Jayvee Brand bears the full warehouse and interest expenses on the returned goods and unsalable inventory.

Further, the fabric-buyers for Jayvee Brand are not professional chemists; they had no way of knowing that TRIS was a dangerous substance. Yet, since the liability for the loss has never been distributed between the sewers (such as Jayvee Brand), the fabric mills, or the chemical companies, Jayvee Brand has been forced to bear the entire burden of TRIS related expenses, with no aid from their fabric suppliers.

All this has added up to a loss for Jayvee Brand, Inc., of approximately $1 million, including both returned finished goods and the fabric in inventory. For a company of only 175 employees, in an industry that operates on a low profit margin, this is a considerable sum.

Mr. Chairman and members of the Committee, I believe that Jayvee Brand, Inc., and the many other manufacturing concerns that suffered similar losses through their compliance with these government-dictated regulations, are entitled to financial relief. The government that in this instance imposed such sudden regulations should make restitution for the problems it created.

It is for this reason, Mr. Chairman, that I commend H.R. 7158 to you for passage, and urge your favorable consideration of this measure.

STONE MANUFACTURING COMPANY
P. O. BOX 3725 PARK PLACE • GREENVILLE, SOUTH CAROLINA 29608 • DIAL 242-6300
CABLE ADDRESS STONEMFGCO GREENVILLE S C
Apparel for CHILDREN • LADIES • MEN

STATEMENT OF
STONE MANUFACTURING COMPANY
GREENVILLE, SOUTH CAROLINA
TO THE
COMMITTEE ON THE JUDICIARY
U. S. HOUSE OF REPRESENTATIVES
ON
H. R. 7158 - TRIS INDEMNIFICATION

Stone Manufacturing Company has 45 years apparel experience and employs over 3,000 people in three states.

We support Tris Indemnification as proposed in H.R. 7158 and amended by S.1503.

Our company has met the requirements of the Standards For The Flammability of children's sleepwear beginning in 1972. We have used fabrics sold by leading textile mills. Tris finish was not known about until it appeared on Walter Cronkite's news broadcast in March-April, 1976.

As a result of the ban, we have incurred losses exceeding $1,000,000.

Free enterprise was at work to eliminate Tris from the market place within the 12 month lead time of design, purchasing and manufacturing. This was occurring without the CPSC ban.

The April 8, 1977, ban unfairly limited the recall to the apparel manufacturer. Subsequent court action resulted in the procedures of the CPSC being found in error and the ban was declared null and void. However, the market was killed and retailers returned Tris to apparel manufacturers despite the August 17 court order of Judge Robert Chapman. Additionally, the court found that the Children's Sleepwear Standard "had the practical effect of the Federal Government ordering that Tris be used."

The apparel manufacturer should not be the victim of a regulatory agency's unlawful ban when it did not specify, know of, or apply the finish Tris to fabric. As a result the Tris Indemnification Bill is proper and should be passed by Committee and The Full House of Representatives.

My name is Thomas Mitchell, and I am a Vice President of Stone Manufacturing Company in Greenville, South Carolina.

Our report is submitted to the Committee on the Judiciary as a part of the proceedings in the haaring on H. R. 7158 - Tris Indemnification.

Stone Manufacturing Company was founded by Eugene E. Stone, III, in 1933. Among the first styles produced were ladies' undergarmants and this business has grown today into our Lingerie and Sleepwear Division. There are three other divisions: Playwear, Underwear and Athletic Wear. In total wa employ over 3,000 people with plants in thrae states and sales representatives covering the nation.

Our company has been a leader in styling, manufacturing and selling flama retardant children's sleepwear since 1972. Stone Manufacturing met tha challenga and complied with the detailed requiraments of the sleepwear standards 100%. We ware routinaly inspected on two occassions by raprasentatives for tha Consumer Product Safety Commission with garments being purchased and sent to govarnment laboratories for testing with no unfavorable raports. Wa are proud of the accomplishments in meeting the first Department of Commerce Standard FF3-71 (sizes 0-6x) and latar tha Consumer Product Safety Commission Standard FF5-74 (sizes 7-14).

We support Tris Indemnification legislation as proposed in H. R. 7158 and S. 1503 as amended and unanimously approved by the Senate. A favorable vote by this Committee and the support and passaga by the House of Representatives is needed for apparel manufacturers to recover in part their losses as a result of the Consumer Product Safety Commission's immadiate ban on Tris, April 8, 1977.

The CPSC met and votad to ban Tris, April 7, 1977. As noted above the effactiva date was the next day - not in 90 or 180 days or 18 months as for a saccharin study, but the next day.

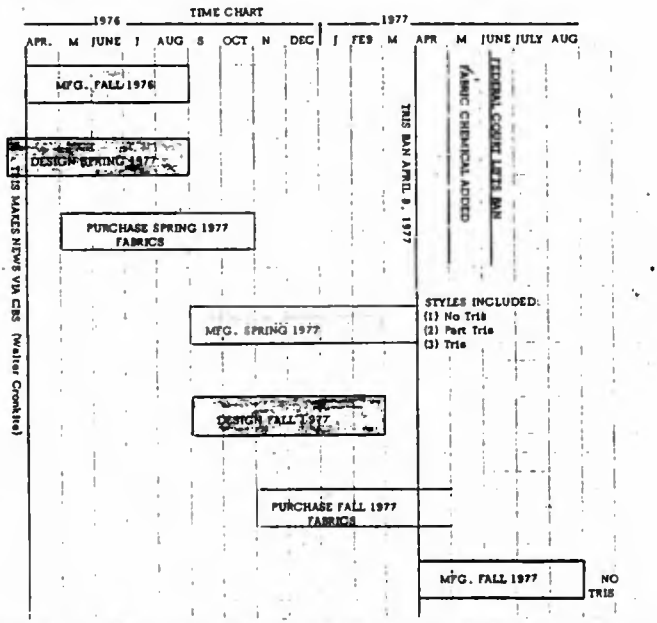
Inventories of 1977 Spring and Summer marchandise aither in apparel warehousas or retail stores was at its peak. A season's business was erased with the CPSC vote. In addition old carryover inventorias could be returned to apparel manufacturers.

As a rasult of the ban, Stone Manufacturing Company has losses excaeding $1,000,000 plus the uncalculated costs of answering customer raquests and handling their returns. Some returns were from the 1974 and 1975 seasons. Retailers used the ban to clean out their mistakes. This loss adds a major element to one's ability to finance a company and to provide jobs to our fine employees.

When the apparel industry first learned about Tris in March-April, 1976, it did not know what the product was. To meet the Government's mandated standards, textile manufacturers applied a finish to the fabric and sold it to apparel manufacturers as meating either FF3-71 (0-6X) or FF5-74 (7-14). That finish as we were to learn in the spring of 1976 was Tris.

An apparel manufacturer plans 12 months ahead. From March - April, 1976, until the ban in 1977, the industry was trying to find fabrics with finishes other than Tris that could be used and still meet the mandated standards FF3-71 (0-6X) and FF5-74 (7-14). Textile suppliers had to develop and put into production new technology.

Note in the chart below that 1976 Fall styles were in production when Tris was first mentioned, that 1977 Spring-Summer designs and fabric selection was beginning, and that the first move away from Tris was beginning to show up. Based on fabric availability our 1977 Spring and Summer line represented a 70% effort to move away from Tris treated fabrics. The line included: (1) styles that were 100% Free of Tris, (2) styles containing non-Tris and Tris fabric, (3) styles containing Tris. It was not until the 1977 Fall season that we had moved 100% away from Tris: without the CPSC ban - 12 months after learning of Tris. Free enterprise and market responsiveness had reacted to eliminate a textile finish that one year earlier was brought to the attention of apparel manufacturers.



The ban April 8, 1977, was limited to one segment of the production/retailing sequence of industries - the Apparel Manufacturer. He did not make Tris, he did not apply Tris to fabric, he did not specify Tris on his fabric. He did require that the fabric meet the two Standards For The Flammability of Children's Sleepwear, FF3-71 (0-6X) and FF5-74 (7-14).

After the ban was imposed Federal District Judge George Hart, April 28, 1977, ordered that the CPSC spread the cost of recalling apparel manufactured of fabric containing Tris to include chemical, fiber, textile and apparel. Accordingly, the CPSC published an amendment to the ban in the Federal Register, May 5, 1977.

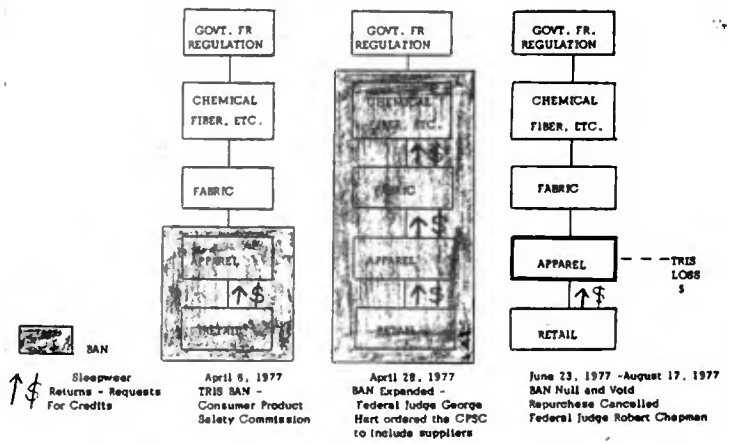
Soon thereafter, Springs Mills in the 4th District before Judge Robert Chapman brought a suit against the CPSC. Judge Chapman in his Findings of Fact (Springs Mills Vs CPSC) filed June 23, 1977, stated:

> "In order to comply with this standard it was necessary that this size children's sleepwear be treated with a chemical flame retardant, and Tris was the only flame retardant chemical available to effectively treat polyester, acetate and triacetate fabrics used for children's sleepwear, which would enable the sleepwear to comply with the Secretary's standards. This had the practical effect of the Federal Government ordering that Tris be used."

Judge Chapman's Order of Final Judgement filed August 17, 1977, "declared (the ban) to be unlawful, null, void and of no force and effect."

Our chart below illustrates just what has happened. Note the initial ban (red) and the expansion of the ban to include fabric fiber and chemicals. Finally, the apparel manufacturer is left carrying the full financial responsibility of the now unlawful ban. The retailer continues to return Tris sleepwear. The apparel manufacturer must accept returns because of buyer-seller relationship. The CPSC has killed the market regardless of what Judge Chapman's order states.

ACTUAL EFFECT OF BAN ON APPAREL MANUFACTURER



The courts have already determined that the Consumer Product Safety Commission acted improperly in the manner in which the Ban was handled. The product Tris was not put on fabric by apparel manufacturers, but applied by textile manufacturers to meet government standards. The apparel manufacturer; therefore, should not be the one to absorb the losses for this illegal action on the part of the CPSC.

Quoting from Barrons June 6, 1977, editorial: "the episode is a textbook case of how the authorities, once they make a blunder, invariably work to compound it."

The Tris Indemnification Bill will help apparel manufacturers recover from being the pawn in government regulation. We respectfully ask that this Committee report the bill favorably to the full House of Representatives for passage and signing by The President.

THOMAS M. MITCHELL

Thomas M. Mitchell
Stone Manufacturing Company
Greenville, South Carolina
June 9, 1978

STATEMENT OF THE AMERICAN YARN SPINNERS ASSOCIATION
ON H.R. 7158 (AND COMPANION BILLS), SUBCOMMITTEE
ON ADMINISTRATIVE LAW AND GOVERNMENT RELATIONS,
COMMITTEE ON THE JUDICIARY, U. S. HOUSE OF REPRESENTATIVES.

June 15, 1978

I. Introduction

The following statement on H.R. 7158 (and companion bills) is made on behalf of the American Yarn Spinners Association ("AYSA"). AYSA is a nonprofit trade association, with its headquarters in Gastonia, North Carolina. The membership of our association consists of approximately 130 firms engaged in the business of producing yarn for sale to fabric manufacturers. The members of AYSA produce in excess of 90% of the spun sales yarn produced in the United States annually.

AYSA's responsibilities include representation before Government agencies on matters which concern and affect its members' business operations. In that context, the association has filed objections to the Commission's TRIS ban as published in the Federal Register on May 5, 1977 and June 1, 1977, in accordance with procedures set forth in the Federal Hazardous Substances Act; appeared and presented testimony at Commission hearings on the repurchase provisions of the Federal Hazardous Substances Act and their application in the context of the TRIS ban; is Amicus Curiae in the appeal of Springs Mills, Inc. v. CPSC, et al., USDC S.C., C.A. 77-891, the case in which the TRIS ban was determined by the U. S. District Court to bave been illegally promulgated; and has submitted testimony on the Senate side concerning S. 1503, the TRIS indemnification bill since adopted by the U. S. Senate.

Six members of our association were and continue to be directly impacted by the TRIS ban. The names and addresses of these firms are

attached to this statement. Among them, these firms blended approximately 4,250,000 pounds of triacetate fiber ("Arnel") with 4,250,000 pounds of polyester staple fiber, into 8,500,000 pounds of spun yarn. This yarn, to the extent it is in the marketplace, unwashed, is subject to the CPSC's TRIS ban (now referred to by the Commission as a "policy statement) because the "Arnel" triacetate fiber, as originally manufactured by the fiber producer, contained TRIS.

II. Support of Legislation to Authorize Indemnification.

The American Yarn Spinners Association supports the concept of authorizing indemnification for economic losses resulting from the TRIS ban. The reasons why we think a government indemnity should be available as a result of the TRIS ban, especially as that indemnity would be available to yarn spinners, are set forth herein.

III. The Role of Government in Encouraging the Use of TRIS.

In this testimony, we do not address the issue of whether the TRIS ban was right or wrong, although our position that it was adopted in an unlawful manner is a matter of public record.1/ We are disappointed, too, that the Commission has been less than forthright in its description of the role played by the Federal Government in forcing the widespread use of TRIS in children's sleepwear. See, e.g., Hearing Before the TRIS Hearing Panel, Committee on the Judiciary,

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1/ Objections of American Yarn Spinners Association, Inc., et al., filed May 24, 1977; Objections of American Yarn Spinners Association, Inc., et al., to the revised ban, filed June 1, 1977; and Petition for Reconsideration of the June 1, 1977 Amendment to 16 C.F.R.§1500.18(d), filed July 14, 1977. Brief Amicus Curiae on Behalf of American Yarn Spinners Association, Inc., Springs Mills, Inc. v. CPSC, Nos. 77-1969, 77-1970, 4th Cir.

U. S. Senate, on S. 1503, July 26, 1977, pp. 12-15. Despite the Commission's claims that the children's sleepwear standard (DOC FF 3-71; 16 C.F.R.§1615) was a performance standard which did not dictate the use of any particular flame retardant (e.g., TRIS), the fact of the matter is that at the time the standard was promulgated "TRIS was the only flame retardant available to effectively treat polyester, acetate and triacetate fabrics used for children's sleepwear which would enable the sleepwear to comply with the ... standards." Springs Mills, Inc. v. CPSC, et al., USDA S.C., C.A. 77-891, Findings and Order, p.3.

The Judge's conclusion in the Springs Mills case can be confirmed by a thorough examination of the historical record of the development of the children's sleepwear standard. When the Federal Government promulgated the first of the children's sleepwear standards (DOC FF 3-71) and established the effective dates, it determined that "it will be technologically practicable for the majority of companies to comply with the standard within 24 months from the date of promulgation." 36 F.R. 14062. The technological practicability finding is a necessary prerequisite to promulgation of any standard under the Flammable Fabrics Act, as amended, 15 U.S.C.§1193(b). The U. S. Department of Commerce, in making this determination, was relying on the assumption that TRIS would be used in acetate, triacetate, and polyester fibers to make them comply. Without this assumption, the Department could not have found that the majority of companies could meet the standard on the prescribed effective date. In this context, for the Commission to contend that because the standard sets only a level of performance, not a design specification, the Government bears no responsibility, is unrealistic.

In our opinion, it is time for the Commission and all concerned to recognize that the TRIS problem is a product of two conflicting national safety policies. Ae euch, this is an unusually meritorious case for the type of relief proposed in H.R. 7158. It is ridiculous for any agency or official of Government to point an accueing finger at the textile industry for the result of ite attempts to comply with the Federal flammability standards.

IV. Yarn Spinners Have Been Innocently Engulfed In This Controversy, Yet Stand To Be Significantly Injured.

As your Subcommittee ie aware, the Commission issued two different TRIS bans. See 42 F.R. 18850, 42 F.R. 20479, 42 F.R. 21274, 42 F.R. 22879, and 42 F.R. 28060. The firet included only fabric intended for use in children'e wear, and children's wear itself. Because of the way in which the repurchase provisions of the FHSA operate, thie ban would not have directly impacted upon yarn epinners.

However, as a reeult of the efforts of some segmente of the textile industry to redietribute the economic impact of the ban (and repurchase program), a second ban was issued, thie one extending to fiber and yarn containing TRIS. It is this eecond ban which the Commission subsequently eought to withdraw and replace with what was deecribed as a "policy etatement." 42 F.R. 61593, December 6, 1977.

Part of the rationale behind this redietribution of loss activity wae that segments of the industry other than the garment manufacturers were reeponsible for incluaion of TRIS in the children's wear fabrice. One problem with the Commiesion's reaction to this

complaint is that it chose to deal with it by naming "yarn" as a banned hazardous article in its revised ban, 42 F.R. 28060, June 1, 1977, despite the fact that no yarn spinner has ever been known to put TRIS in the fibers being spun into yarn.

The effect of the revised ban, at least in the Commission's view, was to obligate yarn spinners to repurchase yarn containing TRIS, even though the fibers from which the yarn was spun contained the TRIS in their original form.2/

The yarn spinner was caught in the middle, between the fiber producer who developed fire retardant fiber and the fabric and apparel manufacturer who specified the use of this fiber to make yarn and fabric. Though our members were completely uninvolved in (1) putting TRIS into yarn,or (2) specifying components containing TRIS, they are now being called upon to provide refunds and to suffer other economic losses.

V. The Textile Industry Was Not Aware Of The Adverse Health Implications of TRIS.

The Commission, in its previous Congressional testimony on the indemnification question has criticized bills which would compensate "all parties for all losses", suggesting that all parties did not act without knowing or having reason to know that TRIS might pose a danger to the public." Presumably, the Commission will make the same criticism of H.R. 7158.

2/ It is AYSA's position that the Federal Hazardous Substances Act does not authorize the Commission to impose repurchase obligations upon successive levels of manufacturers. 15 U.S.C.§1274(a)(2), (a)(3). Accordingly, the yarn spinner has no statutory obligation to repurchase under the Federal Hazardous Substances Act. However, the damages which flow from the Commission's actions are not limited to legally mandated repurchase. They include unauthorized set-offs, nonpayment of accounts, return of unrelated merchandise, etc.

Considering the neture of the evidence concerning TRIS, the Commission's early access to this information, the haste with which the Commission ected in imposing the TRIS ban, and the immediacy of the effectivity of the ban, this criticism is a curious one.

If the Commission believes there were individual or industry-wide malefectors involved here, let it be specific. After all, if there is culpability, then this fect should have some bearing on the hundreds or thousands of legal actions which ere likely to arise from this ban. To our knowledge, the Commission hes never suggested that any firm or industry segment acted with knowledge of the hazard the Commission, itself, has only recently declered exists.

VI. Support for H.R. 7158.

The American Yarn Spinners Association supports H.R. 7158, end prefers it in severel respects over S. 1503 as edopted by the U. S. Senete. Beceuse of the possibility different Senate and House versions of an indemnification program may need to be rationalized, we teke this opportunity to emphasize both important differences between H.R. 7158 and S. 1503, and to enticipate proposed amendments considered objectioneble.

First, H.R. 7158 recognizes that the economic impacts of the Commission's actions ere not restricted to "manufacturers", "distributors", or "dealers", the parties statutorily responsible for repurchase, 15 U.S.C.§1274, but extend as well to producers and processors of components.

Second, H.R. 7158 places the impacted parties in an equal position with respect to access to relief from the Court of Claims. The Senate hearings, largely due to their timing, dealt almost exclusively

with the difficulties of cutters and sewers, and the Senate passed bill reflects this attention.

Since the Senate hearings, retailers who had been withholding their hands have made massive demands for reimbursement or have taken offsets from suppliers who declined. These actions have set in motion a chain of claims. The yarn spinners are now feeling the economic impact of these credit transactions which were initiated at the retail level since the Senate hearings. While it is the yarn spinners' position that they are not "manufacturers" of a hazardous substance, as that term is used in 15 U.S.C.§1274, and hence are not subject to the automatic repurchase provisions of the Federal Hazardous Substances Act, it is uncontradicted that the spinners' customers (knitters and weavers) are in a position to secure reimbursement through taking unauthorized offsets, refusal to pay for goods received, and other means. These damages, while not the result of repurchase under 15 U.S.C.§1274, are losses of equal standing under the proposed legislation. No doubt as to the recoverability of such losses should exist in the final indemnification legislation.

Third, H.R. 7158 does not limit recovery of losses on the basis of the presence or absence of any particular intent. By contrast, the Senate passed legislation would limit the Court of Claims' authority to render judgment for losses "sustained ... by any producer ... of yarn ... intended for use in children's sleepwear." S. Rept. No. 95-584, 95th Cong., 1st Sess., p.1. Such language creates unnecessary and unintended difficulties for processors or producers of components. As a general rule, the spinner of yarn does not have

any specific "intention" as to the eventual use of the product. This decision is made by the manufacturer of the fabric or garment. In the aftermath of the TRIS ban, spinners ars likely to suffer losses with respect to returned yarns or fabrics containing TRIS, irrespsctivs of any intent on the part of ths spinner as to the yarns' eventual use. Under the circumstances, "intent" should not be an element of proof for the yarn spinner. Recoverability should be available whsre the yarn, fiber or fabric was used in children's garments, or in fabric for children's garments; or was produced for such purposes; or whicb was on hand but cannot now be sold because of the ban.

Fourth, H.R. 7158 does not contain any arbitrary time limit on ths presentation of claims. By contrast, the Ssnate passed bill requires institution of claims within two years of enactment. In our opinion, this is a needless and arbitrarily short time frame within which to expect affected parties to act. It should be kept in mind that as the TRIS ban is presently written, the repurchase obligations fall upon retailers, distributors, garment manufacturers, fabric manufacturers, private labelers, cutters and sewers, contract finishers, yarn spinners, fiber producers, TRIS producers, and perhaps others. The repurchase obligations of each of these levels, if any, are far from clear. This the Commission itself has recognized. 42 F.R. 29326. Moreover, enforcement of ths ban has now been enjoined, Springs Mills, Inc. v. CPSC, et al., and that case is on appeal. It appears likely that until the significant legal issues raised in the Springs Mills case are resolved, persons affected by the ban are not likely to receive much by way of additional clarification from the Commission. In addition, because that litigation involves only procedural issues,

it is very possible that additional litigation will ensue. In this context, it is likely that much more than two years will elapse before all the parties impacted by the Commission's action know their losses. For this reason, it is our opinion that indemnification legislation should provide either a longer period for the bringing of suits, or relate that period to the point in time when the losses are actually experienced.

Fifth, while H.R. 7158 does extend to both direct and indirect losses, we believe the legislation should be clarified with respect to whether it is intended to indemnify only those losses directly related to repurchase (under 15 U.S.C.§1274 or otherwise) or whether losses resulting from claims of lack of merchantability or fitness are also recoverable. Your Subcommittee should recognize that the cost of repurchase (under 15 U.S.C. §1274 or otherwise) is only a part, and perhaps not even a major part, of the likely costs of the Commission's ban. For example, some of our members have inventories of finished yarn, the delivery of which the knitters and weavers for whom it was spun will not accept.

VII. Additional Views.

The AYSA wishes to take this opportunity to express two additional concerns to your Subcommittee with respect to indemnification legislation.

First, Congress should take steps, in enacting this legislation, to send a clear message to the courts hearing challenges to the TRIS ban. That message should be that merely because an opportunity for indemnity is to be afforded does not lessen the due

process obligations imposed upon the Commission with respect to the promulgation of this ban. We are very concerned that some courts may view indemnity as an excuse to gloss over the outrageous procedure the Commission employed here. This would be tragic ... and would almost certainly lead to further similar actions.

Secondly, we are distressed at the actions of the Commission which would have the unavoidable effect of maximizing rather than minimizing the economic loss to be suffered by American industry (and by the Government if indemnity is authorized) as a result of this ban. In particular, we refer to the recent effort of the Commission to imply thst export of recalled and repurchased TRIS garments and fabrics is prohibited under the FHSA, by the issuance of a so-called policy statement to this effect. In so doing, the Commission is thwarting the will of Congress as enunciated in 15 U.S.C. §1264. To the extent the Commission is successful in impeding or precluding export, the goods involved will probably be destroyed snd the tally of losses to be eventually presented to the U. S. Court of Claims will skyrocket. The Commission's own hearing record amply demonstrates that avsilability of the export option will have a profound effect upon the size of the eventual losses resulting from the TRIS ban. This is one instance where thwarting the Congressional will, as expressed in 15 U.S.C. §1264, will translste itself into $millions in sdditional costs to the Federal Government.

We believe that indemnity legislation such as H.R. 7158 is an ideal and appropriste vehicle for charging the Commission with the responsibility of taking sll feasible steps to minimize the economic impact of its ban -- without endorsing the ban or the manner in which it was promulgated.

Finally, we must say to you that the right to sue for indemnification, while an urgent need in this instance, is a poor substitute for rationale action by the Government, utilizing traditional due process safeguards. The birthright of Americans is to be protected from arbitrary Government action. The textile industry has not been accorded these rights in this instance.

Thank you.

James C. Fry
Executive Vice President
Textiles-Inc.
for the
AMERICAN YARN SPINNERS ASSOCIATION, INC.

Attachment

American & Efird Mills, Inc.
22 American Street
Mount Holly, North Carolina

Carolina Mills, Inc.
618 Caroline Avenue
Maiden, North Carolina

National Spinning Co., Inc.
183 Madison Avenue
New York, N.Y.

Swift Spinning Mills
Division of Fieldcrest Mills, Inc.
3224 Second Avenue
Columbus, Georgia

Textiles-Incorporated
Gastonia, North Carolina

Waverly Mills, Inc.
Laurinburg, North Carolina

Mr. DANIELSON. We will meet tomorrow at 10 o'clock to continue with the same set of hearings.

Thank you very much.

The subcommittee is adjourned.

[Whereupon, at 1:45 p.m. the Subcommittee on Administrative Law and Govermental Relations adjourned, to reconvene Thursday, June 15, 1978, at 10 a.m.]

[The following was received for the record:]

AMERICAN RETAIL FEDERATION,
Washington, D.C., July 10, 1978.

Hon. GEORGE E. DANIELSON,
Chairman, Subcommittee on Administrative Law and Governmental Relations, Cannon House Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: The American Retail Federation is pleased to take this opportunity to submit for the record its comments in support of the Tris indemnification legislation (S. 1503, H.R. 7158, and companion bills) and to strongly urge that any legislation reported by your Subcommittee permit retailers, as well as manufacturers and other processors and distributors, to claim reimbursement for losses due to the Consumer Product Safety Commission's ban on Tris-treated children's sleepwear and Tris-teated goods intended for use in children's sleepwear. Equity demands that the legislation include retailers to the extent that they have not been fully reimbursed by suppliers.

The Federation is an umbrella organization composed of state retail associations of the 50 states and District of Columbia, and 32 national retail associations, as well as corporate members. Thus, the Federation represents a broad spectrum of retail interests, small as well as large organizations.

The Federation strongly supports the concept of indemnification for losses suffered as a result of the Tris ban. As has been well detailed in the oral hearings held before your Subcommittee, the promulgation of extremely stringent flammability standards by the Department of Commerce in the early 1970's virtually mandated the use of a topical chemical flame retardant treatment for the fabric used in children's sleepwear. Subsequently, the Consumer Product Safety Commission, without holding any public hearings or soliciting public comment in any manner, banned the flame retardant chemical, Tris, that had been used solely to meet those flammability standards.

Imposition of the CPSC ban on April 8, 1977, and its extension on June 1, 1977, resulted in a chaotic situation within the industry. Retailers, of course, were those first faced with the necessity of acting to comply with Commission's bans. Retailers immediately took steps to identify which of the children's sleepwear in their stock had been treated with the chemical Tris. (Identification of such garments was sometimes difficult, as Tris was not used uniformly on particular fiber blends.) Costs were also accumulated by stores in having employees identify and remove banned merchandise, and deal with other adminsitrative aspects of the ban. Moreover, retailers had to deal with consumers who were emotionally upset.[1]

Due to complications, retailers were not always reimbursed. Indeed, because of serious cash flow problems, many suppliers were unable or unwilling to reimburse retailers. As time progressed, it became painfully obvious that the entire children's sleepwear industry was in serious financial distress. It is important for all involved that a firm financial footing be once again established.

While H.R. 7158 would include retailers among the "other persons" entitled to seek indemnification in the Court of Claims, the "other persons" language was deleted from S. 1503. Perhaps the deletion was made on the assumption that retailers have been fully reimbursed. This assumption is erroneous.

There may even be some legal questions raised by the federal district court decision in the South Carolina *Springs Mills* case in which the Consumer Product Safety Commission was enjoined from enforcing the April 8th and June 1 bans. (The court's decision was based upon the Commission's failure to afford affected parties the opportunity to be heard.) This decision is currently on appeal to the Fourth Circuit, and a decision is expected to be rendered soon. Should the Court of Appeals

[1] Although the CPSC ban applies only to unwashed Tris-treated sleepwear, retailers also accepted returns of, and duly reimbursed consumers for, washed garments. In fact, retailers not infrequently accepted returns of non-Tris-treated goods as well. Retailers do not contend that they should be indemnified by this legislation for losses incurred in the repurchase of such non-banned items, but merely point this out in order to demonstrate their good faith compliance with the law and their clear recognition of public policy considerations.

affirm the lower court's injunction, legal questions could be raised regarding the status of Federal Hazardous Substances Act repurchases made under a ban later declared to be unenforceable or void. In addition, on December 6, 1977, the CPSC itself withdrew its prior bans and substitued a policy statement announcing that it would proceed against the sale of formerly-banned products on a case-by-case basis. Thus, even if the Fourth Circuit reverses the lower court and overturns the injunction against the CPSC, legal questions could be raised as to whether the original bans would be automatically reinstated or whether the CPSC's December withdrawal of the bans would remain operative. While the Federation does not subscribe to the validity of any of these arguments, it is clearly apparent that retailers have been, and continue to be, in a complex situation. Furthermore, it is clear that future litigation could only serve to further complicate an unfortunate situation. Indeed, current litigation focuses on procedural issues only; no court case has addressed the more substantive issue underlying the ban—the CPSC's consideration of scientific evidence of toxicity of Tris.

The Federation, therefore, strongly urges that the legislation recognize that, regardless of the ultimate legal status of the bans, Tris-treated children's sleepwear has been as a *practical* matter, "banned" by the actions of the Federal government.

We also urge that the legislation reflect the fact that since retailers and suppliers, have often met the challenge of complying with the CPSC actions on an individualized basis, indemnification of losses resulting from these government actions should be permitted regardless of exactly where in the chain of distribution such losses might be found.

For all above reasons, the Federation urges that the Tris indemnification legislation be favorably reported out by the Subcommittee and that the legislation permit retailers to seek indemnification for their losses on an equitable basis with others in the chain of distribution.

Respectfully submitted,

LOYD HACKLER, *President.*

STATEMENT OF HON. BILLY L. EVANS, A CONGRESSMAN FOR THE STATE OF GEORGIA

Mr. Chairman and members of the Subcommittee, I appreciate the opportunity to testify today in support of H.R. 7158, H.R. 8843 and H.R. 8971, which I introduced on September 8, 1977, and other similar pieces of legislation providing reimbursement for economic losses incurred as a result of the Consumer Product Safety Commission's ban on textile products treated with the chemical Tris. The history of the Tris ban has already been covered in depth by several of my colleagues and others which have testified before this subcommittee.

CPSC's ban on the use of Tris has caused a responsive, conscientious industry many problems and additional possible economic hardships through no fault of their own. The economic impact of the repurchase criteria of the ban will, in many instances, be the final blow to an industry already struggling against imports for its survival.

There has been some concern expressed that if this legislation is enacted it will set a precedent of the federal government bailing out manufacturers, wholesalers, and retailers. In may cases, from municipalities to private enterprise, I would agree that through mismanagement, poor judgment and non-controllable economic conditions this would be a precedent-setting, free bail-out. But, Mr. Chairman, this is not the case with the issue here today. As has been previously stated, an industry acted in good faith attempting to comply with government regulations which were issued over their objections that the testing of the chemical to be used in compliance was insufficient. Now, they are subject to another federal government agency's ban and repurchase for a situation they did not initiate or create. They simply did their best to comply.

Additionally through the industry's good faith effort to comply with the 1971 bureaucratic mandate previously discussed by others, there have been direct and indirect losses suffered by wholesalers and retailers. This situation, in my opinion, should be addressed additionally and equally during your consideration of this legislation. While the severity of the economical impact may not be as devastating, it was in fact caused directly by the same mandate.

In conclusion, I respectfully suggest that the issue under consideration does not parallel cost increases to other areas of our economy caused by federal rules and regulations. I further urge your favorable and timely consideration of this legislation which will prevent "the straw that broke the camel's back" from wreaking financial disaster on an entire segment of our economy.

Thank you.

STATEMENT OF HON. KEN HOLLAND, A CONGRESSMAN FROM THE STATE OF SOUTH CAROLINA

Mr. Chairman and members of the Subcommittee, I wish to express my strong support for H.R. 7158, S. 1503, and other bills which would provide reimbursement for economic losses following the Consumer Product Safety Commission's Tris ban. I urge the Subcommittee to move promptly on this legislation in order that it can be enacted during this Congress.

In 1971 the Government proposed a strict flammability standard for children's sleepwear. It was placed in effect over industry objections that not enough was known about the chemicals which might be needed to meet the standard.

To comply with the standard, the industry was for practical purposes required to use the chemical Tris. At that time, there was no indication that Tris was either mutagenic or carcinogenic.

Early in 1976 the Environmental Defense Fund raised a question concerning the carcinogenicity of Tris and requested the Consumer Product Safety Commission to require that Tris-treated products bear a label to the effect that they should be washed before wearing.

In April 1977, following a National Cancer Institute report alleging that Tris was mutagenic, the CPSC banned Tris-treated products as hazardous substances and forced their recall.

I do not argue the legitimacy of the Government's issuance of the Sleepwear Flammability Standard or the Tris ban. Both stemmed from lofty motives—one, protection of children from fire; the other protection from cancer.

I do, however, maintain that the industry, which was complying in good faith with the standard and was caught with millions of dollars worth of Tris treated products on hand at the time of the ban, is entitled to compensation. The case stands on its own merits, and I hope the Subcommittee will move speedily to report this legislation.

Thank you Mr. Chairman and members of the Subcommittee.

REIMBURSEMENT FOR LOSSES INCURRED BY GOVERNMENT BANNING OF TRIS

THURSDAY, JUNE 15, 1978

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ADMINISTRATIVE LAW AND
GOVERNMENTAL RELATIONS
OF THE COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2226, Rayburn House Office Building, the Honorable George E. Danielson (chairman of the subcommittee) presiding.

Present: Representatives Danielson, Mazzoli, Harris, and Kindness.

Also present: William P. Shattuck, counsel; James H. Lauer, Jr., assistant counsel; Alan F. Coffey, Jr., associate counsel; and Florence McGrady, clerk.

Mr. DANIELSON. The subcommittee will come to order, the hour of 10 o'clock having arrived.

This morning we will continue with our hearing on the various bills relating to the subject matter of Tris.

Mr. Stratton of New York being with us, you are welcome and won't you please come forward?

TESTIMONY OF HON. SAMUEL S. STRATTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. STRATTON. Thank you very much, Mr. Chairman.

Mr. Chairman, if the committee has no objection, I would like to ask Mr. Williams to sit beside me. He will be testifying on your schedule just a little bit later this morning.

Mr. Chairman, I simply want to express my appreciation to you for scheduling these hearings.

I appear before you to express my strong support for H.R. 7158 and for the related bills.

I have been interested in the subject to which they refer for some time, because at my right is seated Mr. Byron Williams, Sr., who is the owner and manager of the Swanknit Co. in Cohoes, N.Y., one of the companies that has been hardest hit by the Tris ban brought about by the Consumer Product Safety Commission, and his situation, I think, is typical of the necessity for the enactment of this legislation.

Mr. Williams has been operating this business successfully for the last 30 years. He employs 130 people in a very important role in this small manufacturing city, and by really yeoman efforts on Mr. Williams' part the Swanknit Co. has been able to stay together

and to maintain these jobs for their people in spite of what is almost an insurmountable financial wallop delivered to them by Product Safety Commission.

Their problem arises, of course, from the simple fact that they had to buy the material from somebody else, they manufactured the material into sleeping garments and those were then sent to Sears and to Montgomery Ward for sale, and when the Consumer Products Safety Commission ordered the Tris garments banned, they found that they had to reaccept the material that they had sent to Sears and Montgomery Ward.

This virtually represented a major financial blow, since the entire cash flow on which they were operating was upset by their necessity to refund all of the money that they had gotten from Sears and Montgomery Ward, and it is, as I said, only through yoeman efforts which Mr. Williams can describe in greater detail that they have been able to stay in business.

Clearly what has been overlooked in this question of safety, and I don't think anybody objects to the idea of safety for trying to protect individuals, babies or others from any unsafe and unhealthy chemicals, is that the small manufacturer in this particular instance has had to bear the entire financial cost of this decision.

The original manufacturer, the retailer, is scot-free. And I think it is perfectly obvious that what is involved is a decision by the United States which has a very adverse effect on individual companies with no warning whatsoever.

This bill would simply recognize that that was and properly should be a charge against the United States which in the interests of protecting its citizens is undertaking certain actions which adversely affect private businesses and, therefore, the United States should be liable for those costs.

What this bill, of course, would do would simply require the U.S. Court of Claims to determine the amount of loss involved and then to remit that to the manufacturer.

It is not a bailout program, it is not a loan program. We are not getting into anything new. It simply rectifies what is a clear and obvious injustice imposed on apparel manufacturers by a Federal Government agency, and I trust that the committee will act expeditiously to approve this legislaiton.

Mr. Bryon Williams, as I say, will be testifying on your schedule I believe just a little bit later. I simply wanted to present him to you, because I think his case is a classic case of exactly why this is a grave injustice and why this legislation is needed.

I appreciate the time you have extended to me, Mr. Chairman.

Mr. DANIELSON. Thank you, Mr. Stratton.

You have done a very good job as advocate for your constituent, Mr. Williams.

We have quite a large schedule of witnesses and, as we did yesterday, we are going into this as quickly and thoroughly as we can.

We appreciate your interpretation.

Your formal statement will be received in the record in its entirety in addition to your comments.

[The prepared statement of Hon. Samuel S. Stratton follows:]

STATEMENT OF HON. SAMUEL S. STRATTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Chairman, I appreciate the opportunity to appear before the subcommittee this morning to express my strong support for H.R. 7158 and similar bills. I would also like to introdue to members of the subcommittee Mr. Byron Williams, Sr., the owner of Swanknit Incorporated, an apparel manufacturing firm in my district in cohoes, New York. Mr. Williams will give the subcommittee more detailed information on just how adversely the Tris ban has affected his business. Mr. Williams has operated this successful business in Cohoes for the last 30 years. The company presently employs 130 people and plays a very important role in the economy of this small manufacturing city.

Due to the untiring efforts of Mr. Williams he was able to avoid closing Swanknit when the Tris ban was announced by the Consumer Product Safety Commission last year. However, it has been a touch and go operation ever since this ban went into effect. The future outlook for the company is very bright because they have been able to switch their manufacturing process over so this apparel can be manufactured without using Tris. Orders for future purchases are excellent.

However, their problem arises as a result of the tremendous debt they incurred when the CPSC ordered them to take back any garments they had already sold to major companies, such as Sears and Montgomery Ward, and refund their money. At the same time they were required to take back all of these garments already manufactured, they were prohibited from redistributing them anywhere else. So in effect, the manufacturer has been left holding the entire bag. The failure of the CPSC to spread out the cost involved in this recall throughout the industry has left all of the manufacturers, particularly the smaller size operations, such as Swanknit, in a very precarious financial situation.

The legislation the subcommittee is considering today will redress the problems created for manufacturers by the CPSC ruling. It simply requires the U.S. Court of Claims to determine the amount of loss incurred by these manufacturers as a result of the CPSC action and render judgment in favor of the manufacturers in the amount determined by the court. This is not a bail-out program. It is not a loan program. It simply rectifies an injustice imposed on apparel manufacturers by a Federal Government agency. It is the only fair way to resolve this problem, and I wanted to let the subcommittee know just how strongly I feel that we must take this action.

At this time I would like to present Mr. Byron Williams to the subcommittee so that he can provide you with more detailed information on exactly what has taken place within the Swanknit Company in the last few months.

Mr. DANIELSON. Our first witness after Mr. Stratton is Hon. S. John Byington, Chairman, U.S. Consumer Product Safety Commission, accompanied by Theodore Garrish, General Counsel.

TESTIMONY OF HON. S. JOHN BYINGTON, CHAIRMAN, U.S. CONSUMER PRODUCT SAFETY COMMISSION, ACCOMPANIED BY THEODORE GARRISH, GENERAL COUNSEL

Mr. BYINGTON. Mr. Chairman, my name is S. John Byington, Chairman of the U.S. Consumer Product Safety Commission, and accompanying me at the table today is Mr. Theodore Garrish, who is General Counsel for the Commission.

Mr. DANIELSON. Would you spell the last name for the benefit of the reporter?

Mr. BYINGTON. G-a-r-r-i-s-h.

Also, I have some members of our staff present in case we get into any very specific areas.

Mr. DANIELSON. Fine.

Mr. BYINGTON. Mr. Chairman, it's a pleasure to appear before this subcommittee on behalf of my colleagues to discuss the issue of indemnification.

Today, of course, we will be considering a specific case, losses sustained by those in the sleepwear industry following a Commis-

sion prohibition of the use of Tris, a flame-retardant chemical. But the claims of manufacturers adversely affected in this case cannot be viewed in isolation, for each instance of indemnification raises grave questions about the relationship between government and business.

Let me begin by describing the events that led to the Commission's taking action on Tris. In 1971, the Department of Commerce, acting under the Flammable Fabrics Act, issued the first regulations requiring children's sleepwear in sizes 0 to 6X to be flame-resistant.

Neither these regulations nor additional ones issued by the Commission in 1974 and covering sleepwear in sizes 7 to 14, required the use of Tris or any other specific flame-retardant to meet flammability standards. Tris, however, became the treatment of choice for garments made of acetate, triacetate, blends of these fabrics, and some 100 percent polyester.

As you know, there has been growing concern about chronic hazards, such as carcinogenesis, associated with chemicals in consumer products.

Beginning in 1975, various Federal agencies, including the National Cancer Institute, began investigations of the hazards posed by Tris. The Commission cooperated in this investigation and urged NCI to expedite its study. Petitions were filed by the Environmental Defense Fund, a public interest research organization, which questioned the safety of Tris as a flame retardant.

Ultimately, the Commission had available and considered the NCI studies, its own laboratory tests, and other existing scientific information; we concluded that Tris-treated children's garments present a substantial risk of cancer. On April 8, 1977, the Commission issued a statutory interpretation on Tris products designed to protect children from the Tris hazard in the most timely way possible.

The Commission later expanded its action, first in compliance with a district court order and then by collegial action, to include fabric, yarn, and fiber containing Tris and Tris itself used in or intended for use in children's apparel.

The expansion had the purpose of spreading the economic burden of repurchase, which is automatic and mandatory under the provisions of the Federal Harzardous Substances Act. Even now, the fate of the Commission's action and the repurchase obligations of parties affected by it cannot be known because of continuing litigation.

In the wake of the Commission's actions on Tris, a number of bills were introduced in the House of Representatives. The intent of these bills, including H.R. 7158, is to allow the Court of Claims to compensate or indemnify manufacturers for any and all losses resulting from the Commission's actions.

The Commission has reservations about this blanket approach. We believe that total indemnification is a drastic remedy that should be reserved for cases where the Government's action was in error. We think that in the case of Tris the Commission's action was not, as some have claimed, a "bureaucratic mistake" or a "mixup." Rather, it was an action the Commission had a responsi-

bility to take in light of the scientific evidence and the requirements of the FHSA.

The question of error aside, the proposed sweeping form of indemnification could only be justified if every producer, processor, manufacturer, distributor, dealer, or other person associated with Tris-treated garments had acted without knowing or having reason to know that Tris might pose a danger to the public. While this might be true in the case of some of the parties involved, we simply do not know whether it is true for all of the actions of all of the parties.

We do know that the trade had available to it through the public media, trade publications, and through its presence at Commission meetings, significant amounts of information on Tris as a possible carcinogen.

In fact, some manufacturers of children's sleepwear voluntarily stopped the use of the chemical in 1976. We doubt that the Congress would want to see those who choose to gamble with the public's health and safety compensated, but we believe that the broad language of H.R. 7158 might require precisely that. In addition, because the bill sets no limits on who can file claims for compensation, it sets the stage for a tremendously complex and expensive set of judicial proceedings.

S. 1503, passed by the Senate earlier this year and now before this subcommittee, takes a somewhat less sweeping approach than H.R. 7158. It includes, for example, certain limitations on recovery. But the Senate bill still provides for indemnification of parties without a showing that the Commission's actions were in error.

Mr. DANIELSON. I am going to have to interrupt. I have 10 minutes in which to answer a rollcall, and we cannot complete your statement and leave me enough time to get to the floor and back. So I will be back as quickly as possible and, hopefully, bring some others with me, but I must stand in recess temporarily.

Mr. BYINGTON. That is all right, Mr. Chairman. I understand.

[A short recess was taken.]

Mr. DANIELSON. The subcommittee will reconvene.

I believe, Mr. Byington, you left off at about page 4, line 9 of your statement.

Would you begin at "Some of the provisions."

Thank you.

Mr. BYINGTON. Thank you very much, Mr. Chairman.

Some of the provisions in S. 1503 not contained in H.R. 7158 strengthen the bill, in the Commission's opinion. For example, S. 1503 specifies certain losses that would not be compensated and clearly states the measure of damages that would be compensated. The Commission welcomes these provisions because they clarify the scope and purpose of the bill.

However, S. 1503 also specifies that the parties eligible for compensation are limited to producers, processors, and manufacturers of Tris products. This approach excludes parties by their placement and role in the distribution chain. In addition, S. 1503 would place certain limitations on the applicability of the repurchase provisions of the Federal Hazardous Substances Act to claims for the repurchase of Tris products.

The Commission sees no reason to place any limits on these repurchase provisions which apply to all banned hazardous substances. In particular, it would be inappropriate to set a deadline because, as we stated earlier, repurchase obligations currently are the subject of litigation and will be uncertain as long as that litigation remains unresolved.

The Tris decision is not unique in that it resulted in financial losses for some parties. As regulatory agencies carry out Congressional mandates to protect the public from health and safety hazards, the same basic issue before us today will arise again and again: Who will pay the costs of increased safety? Indemnification for affected businesses may be sought in every case but unless the Government wishes to embark on a policy of general indemnification, this drastic remedy must be applied carefully, selectively, and judiciously.

As we indicated earlier, the Commission believes total indemnification may be appropriate only in cases in which the Government's action was in error. It nevertheless remains that the Tris ban and repurchase requirements have placed a serious economic burden on some businesses, particularly small manufacturers of children's garments.

The Commission shares the concerns of the sponsors of the various bills about bankruptcies and layoffs stemming from the Commission's actions. We believe that a more limited and more flexible approach to indemnification than envisioned in many of these bills is merited, partly because the use of Tris and other flame retardants was a response to Government regulation.

The Commission would urge Congress or the Court of Claims to consider the circumstances surrounding the use of Tris by particular parties before approving any compensation. Specifically, the majority believes that the following factual issues are among those that are relevant: The degree to which reasonable alternatives to Tris existed at the time the Government set the sleepwear standards;

The degree to which the industry acted reasonably in using Tris during the period in which this was the practice;

Whether it would have been feasible or responsible for the industry to have tested Tris for chronic hazards at the time the Government issued the sleepwear standards;

Other factors that tend to bear upon the degree of "compulsion" exerted by the Government to have companies use Tris as a flame retardant.

Any decision to indemnify a party should depend at least in part on the good faith shown by that party. The Commission has recently learned that quantities of Tris-treated children's sleepwear have been exported to other countries. A majority of the Commission does not believe that those who have exported have acted in good faith and, therefore, the Commission would not support any form of compensation to such parties. Further, if the decision to indemnify is made, we believe that the payment of Federal funds should be conditional on the destruction of all Tris-treated sleepwear in the party's possession. We believe that this approach would greatly assist the Commission in its attempts to control exports of Tris.

In conclusion, if I may, Mr. Chairman, I would like to take the opportunity to submit a copy of a letter to you from Commissioner Franklin to explain her personal views in this matter. I'd also like to submit a copy of Commissioner Franklin's and my dissenting opinion in the matter of Tris export authority, which is touched upon in the Commission's statement, because Commissioner Franklin and I do not agree with the other Commissioners that the recent exports should have any bearing on indemnification.

Also, if I may, I would like to bring to the attention of the subcommittee that the motion for change of venue in our suit against the mills was granted in New York. We learned this last night.

Mr. DANIELSON. In your suit against whom?

Mr. BYINGTON. Against the mills, Burlington, Lowenstein, and the other mills that are part-way up the distribution chain. The Commission filed suit against them. The motion for change of venue was granted, and those cases have now been moved to Judge Chapman's court in South Carolina. I personally believe that this indicates extensive litigation in the future. Therefore, I think that the only possibility for short-term or medium-term recovery by the parties is through an indemnification bill such as this.

Mr. DANIELSON. Where was venue prior to the removal?

Mr. BYINGTON. The southern district of New York.

Mr. DANIELSON. It was not in Bangor, Maine?

Mr. BYINGTON. No, sir; it was in New York.

Also, I'd like to take one moment to comment on the third of the four criteria for indemmification discussed in our statement whether it would have been feasible or responsible for the industry to have tested Tris for chronic hazards at the time the government issued the sleepwear standards. I think my predecessor Mr. Simpson, who was Deputy Assistant Secretary of Commerce at the time the standards were originally issued, discussed this yesterday. He raised the fact that concerns about chemicals were expressed, but the point was made that flammability was the issue, not cancer.

I was a bit concerned that the Department of Justice's testimony stated that, to their knowledge, no information was available in 1971 on flame retardant chemicals such as Tris——

Mr. DANIELSON. Slow down a little bit. I am afraid the reporter may not get every syllable, and I miss a few myself, and the ones you miss on me are not going to do you any good. Speak up loudly and clearly.

Mr. BYINGTON. I apologize.

I'm quoting from the Department of Justice's testimony, which states:

> Of course, to our knowledge, no information was available in 1971 that flame-retardant chemicals such as Tris could potentially cause cancer. But the industry was aware that they were not tested and chose to proceed with their use. The alternative might well have been not to put a product in the market if the risk was considered too great. But the fact there was a risk was known to the industry.

Mr. DANIELSON. From whom are you quoting?

Mr. BYINGTON. That is the Department of Justice's testimony as presented before this committee yesterday by Mr. James F. Merow.

Commissioner Franklin and I share two concerns:

First of all, is it reasonable to ask an industry to completely stop producing for a number of years a product like children's sleepwear that could be deemed essential? Second, could manufacturers be expected to do so in light of the issues of 1971? As you know, testing for carcinogens was not the primary issue, although it is now. What we were testing for at that time were dermatological and other types of effects, not the kinds of concerns we have in 1978.

Lastly, I would like to make a personal comment, because I do not agree with much of the testimony of the Commission. I would like to go on the record as personally supporting this legislation.

I think the economics of the marketplace are such that at a minimum the garment manufacturers, the cutters and sewers are going to need indemnification regardless of how this thing is cut.

If the court continues to rule in favor of the mills, removing their obligation to repurchase, then the cutters and sewers are going to have no recourse up the distribution chain. Section 15 of the Hazardous Substances Act has effectively taken the retailers out and, therefore, there is no recourse down the chain. We have a situation where we have deep pockets above, deep pockets below, and no pockets in the middle. But you are going to find that the entire economic burden is going to rest right there.

If, after the extensive litigation we anticipate, the court throws the whole ban out, saying, for whatever reason, that we have acted inappropriately, the cutters and sewers who presently hold those garments are still not going to have any recourse. The mills will still refuse to take those garments back as returns and the retailers certainly will not buy them for sale today in the marketplace.

So, at a minimum, I believe that this is a classic case of equity requiring indemnification. I do believe that indemnification is appropriate in this particular situation.

However, I continue to support the Department of Justice and others who call for the establishment of an overall national policy on indemnification. I don't believe that we can continue to deal with individual private relief bills given the kind of regulation that we will have in the next few years in the whole area of chronic hazards.

I thank you very much for this opportunity to present our views, and I will be happy to try to answer any questions.

Mr. DANIELSON. Without objection, we will place in the record the documents to which you earlier referred; the first being a letter dated June 15, 1978 addressed to me from Barbara Hackman Franklin, Commissioner of the U.S. Consumer Product Safety Commission.

Is there objection? There being none, it is so ordered.

[The letter follows:]

U.S. CONSUMER PRODUCT SAFETY COMMISSION,
Washington, D.C., June 15, 1978.

Hon. GEORGE E. DANIELSON,
Chairman, Subcommittee on Administrative Law and Governmental Relations, Committee on the Judiciary, U.S. House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: I would like to underscore the Commission's testimony on Tris indemnification and want to add a few personal comments as an individual Commissioner.

As you know, I have had a long-time concern about the impact of regulation on small business. Thus, I strongly urge indemnification for those who have been most seriously damaged by the Tris case—the small manufacturers of apparel, the cutters, sewers and converters, all of whom are caught in the middle between large retailers at one end of the spectrum and the large mills and chemical companies at the other.

At the same time, I do not support the implication of several of the indemnification bills that the Commission acted in error by preventing the sale of Tris-treated children's garments. I continue to believe the Commission decision is sound.

As the Commission's statement indicates, "the Tris decision is not unique in that it resulted in financial losses for some parties." However, in other respects, I believe the Tris case is a unique one filled with great irony.

Some years ago, the Federal government mandated a standard designed to protect children from severe burns—perhaps the most debilitating type of injuries which exist. They require extensive and expensive hospital treatment. For the burn victim and his or her family, the anguish and emotional trauma are heavy and often prolonged. Excrutiating pain and discomfort can occur, and the likelihood of death due of severe burns is great.

Flame-retardant sleepwear appears to be reducing the toll. The severity of burn injuries to children is down, according to the statistics and a number of pediatricians and hospital burn specialists with whom I have talked across the country.

Then along came the Tris situation. The Commission determined, after a two-year study, that one of the flame retardant chemicals, Tris, poses a risk of cancer.

For many companies, the situation was unforeseen and unforeseeable. I believe these companies acted in good faith when they began using Tris and other flame-retardant chemicals in the first place. And I believe the government acted in good faith—first, by mandating that children be protected from severe burns and second, by regulating Tris several years later when evidence became available that it poses another health hazard.

There were, in other words, no villains—but many, many victims.

One last comment: Today's Commission's testimony opposes indemnification for companies which have exported Tris-treated products on the grounds that exporters have shown bad faith.

This is an extraordinarily difficult issue. I believe that "bad faith"—or "good faith"—allegations in this situation are difficult to substantiate. The fact of the matter is that companies which exported properly marked and labeled products before May 5, 1978, (the date a majority of the Commission reversed the export policy) violated no law, regulation or policy. On the other hand, there are other issues beyond compliance with law, regulations and policies you may want to consider indemnification is an extraordinary remedy.

In summary I support the intent of the indemnification bill now before you and hope Congress will carefully consider and fairly resolve the tough export issue.

Sincerely,

BARBARA HACKMAN FRANKLIN,
Commissioner.

Mr. DANIELSON. There was a second document to which you referred which I do not have; would you identify it, please?

This is a six-page single spaced document captioned, "Dissenting Opinion of Chairman S. John Byington and Commissioner Barbara H. Franklin in the Matter of Tris Export Authority," dated June 15, 1978. It is quite obvious since this is June 15, 1978, none of us have heretofore read it.

Is there objection? There is none; it will be received.

[The information follows:]

U.S. CONSUMER PRODUCT SAFETY COMMISSION, WASHINGTON

DISSENTING OPINION OF CHAIRMAN S. JOHN BYINGTON AND COMMISSIONER BARBARA H. FRANKLIN IN THE MATTER OF TRIS EXPORT AUTHORITY

On May 5, 1978, the majority of the Consumer Product Safety Commission (CPSC) voted to reverse its previously established export policy and to hold that the Commission has authority to prohibit exportation of TRIS-treated products which are believed to be banned hazardous substances under the Federal Hazardous Substances Act (FHSA) and which products or components thereof have ever been sold

or offered for sale in domestic commerce. A Federal Register Notice has been issued containing the Commission's new statement of policy.

We dissent. We believe that the CPSC does not have the statutory authority to prohibit the export of such products. We continue to support the Commission's previous interpretation that the FHSA does not give the Commission authority to seize or otherwise interfere with the export of any TRIS products that are properly labeled and marked for export, and are actually exported in accordance with Sections 5(b)(3) and 6(a) of the FHSA. This includes products that have been previously sold or offered for sale in domestic commerce and recalled.[1]

Our position is based upon: (1) the specific language of the FHSA and related statutes; (2) the legislative histories of the FHSA and related acts; and (3) recent legislation enacted by Congress. Moreover, we believe there are longstanding public policy considerations which support this position.

There appears to be no question that products designated and labeled for export but moving in domestic interstate commerce are included within the FSHA and, therefore, are subject to our jurisdiction. However, in the FSHA, there are specific statutory exemptions for exports in the sections on penalties and seizures. Section 5(b)(3) provides an exemption from penalties for persons who export a properly labeled and packaged product that complies with the laws of the foreign country.

The plain language of this provision certainly does not prohibit the export of non-complying products. The critical question, particularly as it relates to the TRIS situation, is this: does the owner of a product, once sold or offered for sale in domestic commerce, forever lose the opportunity to obtain an export exemption from FHSA penalties?

The legislative history of this act does not provide a clear answer. The one reference to Section 5(b)(3) in the context of this question is contained in a letter from the House Committee on Legislation to the Committee on Interstate and Foreign Commerce.[2] The sentence reads: "Nor would it be a violation (of Section 4 of the FHSA) where there is involved any hazardous substance shipped or delivered for shipment for export, to any foreign country, in a package marked for export and branded in accordance with the specifications of the foreign purchaser and the laws of the foreign country."

To us, this indicates Congressional intent to allow for a broad export exclusion, conditioned on appropriate labeling. Moreover, export provisions found in statutes enacted by Congress after the FHSA support this interpretation, and may be used to assist in evaluating Congress' intent under the principle of in pari materia.

Basically, this tenet of statutory interpretation holds that statutes that pertain to the same thing or have the same purpose or object should be construed together as if they were one law.[3] Moreover, the later act can be regarded as a legislative interpretation of the earlier act in the sense that it helps ascertain the meaning of the words as currently used.[4]

Applying this tenet, since the FHSA was passed, there have been two other statutes enacted by Congress which have the same goal of safety of consumer products in the domestic marketplace and also which address the export question. The Flammable Fabrics Act of 1953 was amended in 1967 to add an export exemption. This provision permits products that do not comply with our flammability standards to be exported if they are labeled for export. Again, we perceive nothing in the plain language of the statute or in the legislative history that would support a narrow interpretation of the export language.

Our most recent legislative pronouncement on product safety is the Consumer Product Safety Act, enacted in 1972. It contains Section 18 which also allows for the export of non-complying products: "This Act shall not apply to any consumer product if (1) it can be shown that such product is manufactured, sold, *or held for sale for export* from the United States * * *, unless such consumer product is in fact distributed in commerce for use in the United States."[5]

To obtain this exemption, the consumer product or its container, when distributed in commerce, must bear a stamp or label stating that it is intended for export. Here the statutory language specifically acknowledges the reality of the export situation and recognizes the necessity for the seller to move the goods in interstate commerce to deliver them to the port of exit. This is acceptable for non-complying goods if

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[1] Provided these same products have not been condemned under § 6(c) of the FHSA.

[2] S. Rep. No. 1158, 86th Cong., 2d. Sess. 33 (1960).

[3] United States v. Freeman, 3 How. 556–564 (1845); Sanford v. Comm'r., 308 U.S. 39, 44 (1939). See 2A Sutherland Statutory Construction § 51.02, at 290 (1973).

[4] Alexander v. Alexandria, 9 U.S. (5 Cranch) 1, 7–8 (1809) (Marshall, J.); United States v. Stewart, 311 U.S. 60, 64–65 (1940); Erlenbaugh v. United States, 409 U.S. 239, 243–44 (1972) (Marshall, J.).

[5] 15 U.S.C. 206.

properly labeled. Only if they are labeled and then diverted for actual use in the United States are the goods in violation of the Act. By clarifying that "distribution in commerce" refers only to subsequent (post labeling for export) "actual use" in the United States, it is clear to us that Congress intended to allow the export of non-complying products that had at one point been distributed in commerce and subsequently recalled.

The legislative history of this provision clearly shows that properly marked and labeled products can be exported even though they have been sold in domestic commerce. The House Committee Report [6] stated that: "(I)t should be noted that in cases where such product has been distributed in commerce, in order to qualify for an exemption, the product . . . must bear a stamp or label stating that the product is intended for export."

The debate in the House [7] further supports this interpretation. Mr. Gross asked, "Does this mean products which would otherwise be disqualified under this Consumer Product Safety Act could be exported to foreign counties?" Mr. Staggers, Chairman of the House Committee on Interstate and Foreign Commerce, replied in the affirmative and noted that "we are not trying to make the law for any country. In certain instances certain products might be wrong here, but they might be all right in other countries—we do not know."

When Mr. Gross asked whether this was a double standard, Mr. Moss agreed that it was—one standard for Americans and one for foreign consumers, if their governments establish standards lower than the United States. Mr. Moss then explained that: "• • • if we deny our manufacturers a right to participate in that market all we are doing is denying them job opportunities because other countries will manufacture and ship into these nations products which conform to their standards."

Thus, the three statutory export provisions, construed together, support the view that Congress intended to create a broad FHSA export exemption.

Congressional legislation favoring broad export exemption has been modified recently. The Toxic Substances Control Act provides for export with labeling plus notice to EPA, who in turn must inform the relevant foreign government(s). S. 2755, the Drug Regulation Reform Act of 1978, echoes this 3-prong approach to exports. A similar notice provision has also been incorporated into the House proposed CPSA amendments although, as a matter of practice, the CPSC already had utilized existing mechanisms, i.e. the World Health Organization and the United Nations, to notify foreign countries of potential TRIS exports.

In our opinion, all the various export provisions seem to be articulating, with varying degrees of precision, a public policy that the United States does not intend to set health and safety standards for the World. Under this policy, our responsibility to other countries is fulfilled by requiring appropriate labeling and notification to foreign countries of impending exports. This allows other countries, based on adequate information, to make their own choices and to establish their own criteria and standards. Moreover, such a public policy does not put American manufacturers at an economic disadvantage in the world market—by having, for example, CPSC standards, required for certain of their exported products, when such is not the case for competing foreign firms. To do otherwise would in effect create an adverse trade hurdle that could have severe economic consequences for our domestic economy without providing any additional health and safety benefits for the American consumer.

Our top priority at CPSC should be to insure that our actions result in increased health and safety protection for the American public. We cannot understand how a narrowly construed export exemption policy will achieve that. Some might argue that it would have a deterent effect on manufacturers, in that they would be more careful to manufacture safe products if they knew they could not later "export their mistakes". However, we find no basis whatsoever for that reasoning. First there is no evidence that manufacturers make their products with an eye on export safety values. Second, even if a manufacturer chooses to export patently "unsafe" products, he or she can do so today, even under the majority's interpretation of the FHSA if the goods are not distributed in domestic commerce prior to export. Third, if Congress had deterence in mind, it could have easily expressed that in any of the above Acts or legislative history. However, Congress failed to even hint at this. Therefore, we have no basis whatsoever for implying such an intent to Congress.

Above all, it seems clear to us that the issue of exports cuts across many laws and agencies and that there must be some consistency and fairness in our United States export policy.

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[6] H.R. Rep. No. 92-1153, 92d. Cong., 2d. Sess. (1972) pt. 45.
[7] 118 Cong. Rec. H. 85 98-99 (daily ed. Sept. 20, 1972).

Obviously, we do not favor, nor do we encourage laws that endanger the health and well-being of citizens around the world. However, we must conclude that the answer to the critical question posed earlier is: yes, the owner of a product, once sold or offered for sale in domestic commerce, can subsequently export without incurring penalties under the FHSA. After a careful review of all the statutes we administer, we can reach no other conclusion then that Congress intended to permit such export.

S. JOHN BYINGTON, *Chairman.*
BARBARA H. FRANKLIN, *Commissioner.*

Mr. DANIELSON. There was a third document to which you referred.

Mr. BYINGTON. No, sir.

Mr. DANIELSON. Just two. Fine.

Now, we don't have the time to permit the reading of these documents at this moment. I would like to have you give me a very succinct summary of the thrust of Barbara Franklin's letter of today and following that a very succinct summary of the opinion to which you referred.

Mr. BYINGTON. Commissioner Franklin's letter, as I would read it, states that she does believe that indemnification is merited, but she takes no position as to whether or not prior export of goods should have an adverse impact.

Mr. DANIELSON. By prior export, define that, please.

Mr. BYINGTON. Some people have exported Tris-treated garments in the past few months. The question is whether these actions should adversely affect their ability to collect under this legislation.

Mr. DANIELSON. She takes no position on it?

Mr. BYINGTON. She takes no position. She questions it, because she says that the companies that exported properly marked, labeled products before May 5 violated no law, regulation or policy.

Mr. DANIELSON. May 5 of what year?

Mr. BYINGTON. This year, 1978.

On the other hand, there are issues beyond compliance with law, regulation, and policy that you may want to consider, since indemnification is an extraordinary remedy.

The dissenting opinion that was issued today by Commissioner Franklin and myself relates to the position by the majority of the Commission. In a 3-to-2 vote, the majority changed the prior policy of the Product Safety Commission.

The prior policy was that there was no statutory authority under the Federal Hazardous Substances Act for us to prohibit the export of banned hazardous substances, if those exports were properly labeled and marked for export as outlined in the act.

However, the majority of the Commission has reversed that position and has indicated that those goods which were previously disseminated in domestic commerce and then recalled cannot be relabeled and exported.

Commissioner Franklin and I do not believe that the statute supports that distinction, and that properly labeled goods can be exported. Therefore, I do not believe that prior export, which was permitted by the policy of CPSC, and which I believe is still appropriate if the goods are properly labelled, should have any adverse implication for indemnification.

Mr. DANIELSON. On the second portion you talk about prior and subsequent, and we are talking about May of 1978; is it the thrust of the dissenting opinion of today, dated June 15, 1978, that the Commission does not have jurisdiction to bar export if the goods are properly labeled?

Mr. BYINGTON. I think we have jurisdiction. I just think we have no authority to bar the export. I think we have jurisdiction of the goods, but the statute says we cannot prohibit their movement in domestic commerce if they are properly labeled for export and they are going to be exported.

Mr. DANIELSON. I see by jurisdiction you meant having the legal authority to do sómething, and you are saying you don't think you have the legal authority.

Mr. BYINGTON. That is absolutely correct.

Mr. DANIELSON. I understand your two points there.

I want to ask you just a few questions.

First of all, how many members are on the Consumer Product Safety Commission?

Mr. BYINGTON. At the moment there are five. The reason why I——

Mr. DANIELSON. What is the actual complement?

Mr. BYINGTON. The full complement is five Commissioners, but there has been signficiant movement and shifting during the last 18 months. Both the numbers and the individuals have changed.

Presently there are five Commissioners. This is the first time since I have been Chairman—nearly 2 years—that we have five properly constituted Commissioners. At times we have been down to three.

Mr. DANIELSON. How many improperly constituted Commissioners? I am trying to get some numbers, sir, and this should be very easy. You count them on both hands.

Mr. BYINGTON. There are five Commissioners today.

Mr. DANIELSON. All right. How many were there at the time you issued your ruling about April 8, 1977?

Mr. BYINGTON. There were four Commissioners.

Mr. DANIELSON. How about the 1974 ruling? It was issued in 1974, effective 1975?

Mr. BYINGTON. The first sleepwear standard was issued by the Department of Commerce. The one you refer to was the second one covering sizes 7 to 14, was issued by CPSC. There were five Commissioners.

Mr. DANIELSON. Fine. We are not talking about 50 or anything like that?

Mr. BYINGTON. No, sir.

Mr. DANIELSON. All right. Thank you.

Now, what is the statutory mission, the charge of the Consumer Product Safety Commission. What are you supposed to do?

Mr. BYINGTON. I think we have three overriding responsibilities. The first one is stated in the statute: To protect the American public from unreasonable risks of injury associated with consumer products.

The second is to be a central point for the collection of injury data, so the determination as to whether regulation is necessary can be focused at a single point.

The third is to provide assistance in research and development on comparative safety, consumer education and so as to increase awareness of safety at both the manufacturer and consumer level.

These are the purposes expressed in the Consumer Product Safety Act which we consider to be the overriding act and controlling act for the Commission.

Mr. DANIELSON. Those are the three principal missions, then they are one mission in three parts.

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. Does the Commission, through its own facilities and personnel or by contract do any testing of substances?

Mr. BYINGTON. Yes.

Mr. DANIELSON. To see whether they impinge upon your mission?

Mr. BYINGTON. Yes, sir. We do testing and we do testing under contract.

Mr. DANIELSON. You do testing and what ?

Mr. BYINGTON. We do testing and we contract for testing.

Mr. DANIELSON. Assuming you find that a substance may be carcinogenic, what do you perceive the proper role of the Commission to be?

Mr. BYINGTON. Normally we do not do the kind of basic research that would determine whether or not a substance is carcinogenic. We would become involved at some point after that basic research had been accomplished by the National Cancer Institute, for example. Our testing would be concerned with whether or not the suspect substance is present in consumer products. This information, of course, would allow us to make a basic determination as to our jurisdiction.

If we determine we do have jurisdiction, because the substance is present in consumer products, we have just put out a new policy on the regulation of potential carcinogens. That policy in some respects——

Mr. DANIELSON. Are you saying you have just put out——

Mr. BYINGTON. We have just issued a major policy within the last 2 or 3 weeks.

Mr. DANIELSON. Let's disregard that for a moment, because we are talking about things that happened in 1975, 1976, and 1977, and we have to think in that context.

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. And even though you might find today with a new regulation you were wrong then, I am not going to tire you with what you know today. So, if you had some knowledge or reason to believe in the carcinogenicity of some substance, what would you have done in 1975?

Mr. BYINGTON. Back at the time we first issued the statement?

Mr. DANIELSON. Let's say April of 1977. This started in 1976, in April of 1977 you put on a ban.

Mr. BYINGTON. Yes, sir. About 1975, the National Cancer Institute undertook a study of Tris, and we cooperated in that. Early in 1976, just prior to my becoming chairman, as Chairman Simpson testified yesterday, the Commission was petitioned by the Environmental Defense Fund to require labeling of Tris-treated garments, because Tris did not pass the newly-developed Ames test.

Mr. DANIELSON. Was that 1975 or 1976?

Mr. BYINGTON. My recollection, if it is correct, is early 1976.

Mr. DANIELSON. I think you are right.

Mr. BYINGTON. When I became Chairman, on June 2, 1976, Tris was one of the first items that came before us. The decision the Commission made, as I would interpret it, was we were not going to proceed with that petition because we anticipated having the results of the National Cancer Institute study within the next few months, sometime that fall. The results of that much more definitive study would provide us with the basis for evaluating the seriousness of any hazard presented by Tris.

Mr. DANIELSON. I want to follow a thread here, if I can.

You got the petition from the Environmental Defense Fund in early 1976, was it?

Mr. BYINGTON. I think so.

Mr. DANIELSON. It's March, apparently, counsel tells me March of 1976. And they asked you to have these goods labeled?

Mr. BYINGTON. Correct.

Mr. DANIELSON. What was the nature of the label, not "Sunshine Sleepwear," but what was the label? What did it call for?

Mr. BYINGTON. There was a lot of debate on that as to what it would say.

Mr. DANIELSON. Can you try to just get down to the forest? I can't count the leaves here, what was the thrust of the label they wanted?

Mr. BYINGTON. The debate centered around whether the label would say that this garment has been treated with Tris or whether it would say, warning, this garment has been treated with Tris, which some tests indicate may be carcinogenic, or whatever. There were a number of labels proposed and discussed, all of which were designed to provide consumers with some degree of warning about the fact that Tris was in the garment and there might be some problem with Tris.

Mr. DANIELSON. Some problem with Tris, or was the word "carcinogenic" actually spelled out and used in their petition?

Mr. BYINGTON. I can't recall, Mr. Chairman, but I would I am sure at least one of the versions recommended the word in it.

Mr. DANIELSON. All right.

Mr. BYINGTON. Or "cancer causing."

Mr. DANIELSON. All right, "cancer causing."

You had the word "cancer" or the word "carcinoma" or a fraction thereof in writing, by you, I mean the Commission, as early as March of 1976?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. With respect to the substance called Tris?

Mr. BYINGTON. We had the results of a then new test.

Mr. DANIELSON. The Ames test?

Mr. BYINGTON. Called the Ames test, which claimed——

Mr. DANIELSON. I am only thinking of the date now, March of 1976. But in the Ames test or in the petition for a labeling, the word "carcinogenic" or a related root word or "cancer causing" did appear in the petition?

Mr. BYINGTON. Yes.

Mr. DANIELSON. In writing that you can look at it with your eyes.

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. It was a subject of discussion by the Commission?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. I am not questioning your judgment; I am trying to put together a chronology of events here.

At that time or shortly thereafter, you determined through the National Institutes of Health, the National Cancer Institute, that tests were being made or you requested that tests be made, one or the other, is that true?

Mr. BYINGTON. No, sir, that was started over a year in advance of that.

Mr. DANIELSON. Had you known that before the petition?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. Before the petition?

Mr. BYINGTON. Yes, sir; we cooperated, in fact, we provided the National Cancer Institute with the samples back in September of 1975.

Mr. DANIELSON. All right.

What caused you to, something triggered you to take that action. What prompted you to do that action?

Mr. BYINGTON. The National Cancer Institute had chosen Tris as one of about 200 to 300 different chemicals they took a look at. We cooperated with NCI in getting the samples for them to begin their studies.

Mr. DANIELSON. All right. Now, in other words, the National Cancer Institute triggered you to refer it to the National Cancer Institute, in effect, so the emphasis now is coming from the National Cancer Institute.

Did they have Tris listed along with the 200 or 300 substances that we had some reason to believe could be carcinogenic or did they just say they were substances they were testing as to carcinogenicity?

Mr. BYINGTON. Mr. Chairman, I don't have any idea. I was not around at that time. All I know is the National Cancer Institute has had a number of chemicals under testing procedures, and they are continuing to test hundreds now.

How they select them is a process that you have to discuss with the National Cancer Institute.

Mr. DANIELSON. I realize that. But I was going to ask you is it not true they are testing substances at all times?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. That is one of their missions?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. Do you know if there was any particular red flag that caused them to test Tris or was it just one of the things that came up for testing?

Mr. BYINGTON. I have no knowledge of that.

Mr. DANIELSON. OK. When was the Ames test information, in 1976?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. Then, that is subsequent to their testing in 1974 and 1975. Was the Ames test information, the first information that you know of, which you received, which specifically related to carcinogenicity?

Mr. BYINGTON. To the best of my information, that is the first specific test result that was provided to the Commission.

Mr. Garrish pointed out that the Ames test relates to mutagenesis, not carcinogenesis, but some believe there is a relationship.

Mr. DANIELSON. Right. I know. Now, does your organization, or did, it keep abreast reasonably well of the literature on hazardous substances, as far back as, I suppose, since it was created? Would it not have that obligation?

Mr. BYINGTON. Yes, sir; I think it not only had the obligation but I think it did that. However, it would only be fair to point out, I think, that both the National Commission on Product Safety's report, which was the basic report for the formation of the Consumer Product Safety Commission, and most of the debates in the House and Senate related to acute hazards and not chronic hazards.

Mr. DANIELSON. Relates to what?

Mr. BYINGTON. Acute hazards, not chronic hazards. Acute hazards can best be related to——

Mr. DANIELSON. I think the testimony is graying again. What I want to know is does your organization keep abreast of the literature on things that may be hazardous?

Mr. BYINGTON. Yes. But the point I am trying to make is our organization was not set up for significant involvement in cancer or cancer-causing agents. We were primarily involved in dealing with cuts, abrasions, lacerations, bicycles, flammability, electrical shock, and that type of thing.

We did have a very small health and toxicology unit which was there primarily to deal with our responsibilities under the Poison Prevention and Packaging Act.

Mr. DANIELSON. You had a library research staff?

Mr. BYINGTON. No, sir, we do not. We have a couple of people in the library, you remember.

Mr. DANIELSON. You receive the magazines, the publications of the trade papers and so on which contained this sort of information.

Mr. BYINGTON. We received a few of them, but when I became Chairman, one of the first questions laid to me was the fact we have an extraordinarily deficient library in the whole area of chronic hazards. If we were going to get into that area, we had to do something about it.

Mr. DANIELSON. I ask these questions for a very specific reason.

One of your four points on page 6 was the degree to which the industry acted reasonably in using Tris during the period in which this was the practice.

I am not criticizing your organization. But it's apparent to me from your answers that you did not know, and you apparently had no reason to believe that Tris was carcinogenic, at least not prior to the Ames test of 1976, and that would probably be a red flag causing a little attention.

You already knew at that time that National Cancer Institute was studying Tris, and your people rendered a judgment that rather than do something now, we are going to hear from the National Cancer Institute shortly, and that will be a more defini-

tive test, so why don't we wait until we hear from the National Cancer Institute.

I may be oversimplifying it, but it looks to me that is just about what you did.

Mr. BYINGTON. Yes, sir, I would agree. In fact, I would make only two suggested changes. One is I don't think that Ames test at that time raised a red flag, I think it raised a yellow flag of caution.

Mr. DANIELSON. All right, we will reduce red to yellow.

Mr. BYINGTON. That is where I think it still belongs.

Mr. DANIELSON. That is all right, and I appreciate your frankness.

I am just trying to work out whether we should send this to the Court of Claims.

Now, you did get something back from National Cancer Institute along in April, I think the 4th of April of 1977.

Mr. BYINGTON. Yes, sir, but we received the raw data back in February of 1977, the computer data. That data was then reviewed by the National Cancer Institute's Risk and Assessment and Data Evaluation Committees. The Data Evaluation Committee took a look at it to determine whether or not the tests were run well and met certain criteria, and the Risk Assessment Committee looked at it to determine whether or not the results flow from the data, et cetera.

We received that at the end of March, and we then acted on it on the 7th of April.

Mr. DANIELSON. The yellow flag is turning orange about now.

Mr. BYINGTON. Sir, when we got the raw data from the National Cancer Institute, it became a very bright red. At that point we had to have it confirmed, and within 30 days it was.

Mr. DANIELSON. The first week in April was when you issued your order.

Mr. BYINGTON. That's right.

Mr. DANIELSON. Your point, in fact it runs through all of this testimony, was, should the industry have known, did they know or should they have known, as prudent people, or should they have made tests to determine the carcinogenicity of Tris up to this time.

You people by statute are charged with the responsibility of monitoring these substances, in the literature at least, and being on the alert for them, and it really did not come home to you, at least until late 1976 or early 1977, that you might have a real problem.

In April of 1977 was when that first order went out, and that was the end of Tris, I guess, so far as treating sleepwear is concerned. From that I am going to have to make up my mind, but can I infer clearly from that together with the balance of the evidence, whether the industry knew or should have known as far back as 1971, 1972, that they might have a problem with Tris on a cancer-causing basis?

I am just about done. Those are the main questions I wanted to ask.

In 1971, that was when you put out your standards for ages or sizes 0 to 6.

Mr. BYINGTON. Yes, sir; that was done by the Department of Commerce.

Mr. DANIELSON. Right, OK, the Department of Commerce.

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. Is there any way that you know of that the manufacturers could have reached those flammability standards without the use of Tris?

Mr. BYINGTON. Not having been privy to that decision, and I say that only because that should be noted as I state my opinion——

Mr. DANIELSON. Sure.

Mr. BYINGTON. But I understand, on the basis of the record and conversations I have had with people who were present at that time, that the industry raised questions about the lack of knowledge about chemicals that would essentially be required. Most. if not all, of the fabrics that were then in use would require chemical treatment, Mr. Simpson testified yesterday, if they were going to meet the standard. It was only some very new fabrics that might pass the standard without chemical treatment.

Mr. DANIELSON. You are not sure of that, though; is that correct, sir?

Mr. BYINGTON. I do not know what the state of the art was at that time from first hand experience.

Mr. DANIELSON. You would not be able to state positively then they could have reached the standard without Tris?

Mr. BYINGTON. It is my understanding they could not have reached the standard without some type of chemical treatment.

Mr. DANIELSON. In 1974 the sizes were expanded to include sizes 7 to 14?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. I understand there was a revision of the standard at that time, the flammability standards were modified, lowered slightly anyway, and it began to be possible to reach the standard without chemical additives; is that correct?

Mr. BYINGTON. Yes, sir, there were some changes in the fabric industry, and some of the new fabrics that were coming on the market were able to do so.

Mr. DANIELSON. But you also had changed the flammability standard slightly.

Mr. BYINGTON. Our technical staff explains that back in 1974, when we issued the 7 to 14 standards, we left out the residual flame test which had been previously incorporated and until recently was incorporated in the 0 to 6 standards.

Mr. DANIELSON. Until recently?

Mr. BYINGTON. We made some modifications in the children's sleepwear standard just recently.

Mr. DANIELSON. Are you talking about 1974, 1975, 1976, or 1977?

Mr. BYINGTON. The end of 1977 and the beginning of 1978.

Mr. DANIELSON. But that standard was not changed in 1974 then?

Mr. BYINGTON. The new standard that came out covering 7 to 14 was slightly different than 0 to 6X standard because it did not contain the residual flame test.

Mr. DANIELSON. That was changed in 1974?

Mr. BYINGTON. That is right.

Mr. DANIELSON. But you only changed it with respect to sizes 7 to 14 and not with respect to sizes 0 to 6X?

All right. I would like to have and maybe we have it, I would like to have a copy of the order, regulation or whatever you want to call it that was issued in 1971 on that first bracket, the ones in 1974 on the sizes 7 to 14, your pronouncement of April 8, 1977, and now we have covered the substance.

Mr. BYINGTON. Could we submit for the record, if we have not already done so, the modifications?

Mr. DANIELSON. The recent ones, I cut you off a little while ago. Yes, it fits here now.

PART 1615—STANDARD FOR THE FLAMMABILITY OF CHILDREN'S SLEEPWEAR: SIZES 0 THROUGH 6X (FF 3–71)

Subpart A—The Standard

Sec.
1615.1 Definitions.
1615.2 Scope and application.
1615.3 General requirements.
1615.4 Test procedure.
1615.5 Labeling requirements.

Subpart B—Rules and Regulations

1615.31 Labeling, recordkeeping, advertising, retail display and guaranties.

Subpart C—Interpretations and Policies

1615.61 [Reserved]
1615.62 Policy and interpretation relative to items in inventory or as to recordkeeping requirements.
1615.63 Policy regarding garment production unit identification.

Subpart A—The Standard

AUTHORITY: Sec. 4, Sec. 67 stat. 112, as amended, 81 stat. 569–70; 15 U.S.C. 1193.

SOURCE: 40 FR 59903, Dec. 30, 1975, unless otherwise noted.

§ 1615.1 Definitions.

In addition to the definitions given in section 2 of the Flammable Fabrics Act, as amended (sec. 1, 81 Stat. 568; 15 U.S.C. 1191), and the procedures under the act for setting standards (Part 1607 of this chapter) the following definitions apply for the purposes of this Standard:

(a) "Children's Sleepwear" means any product of wearing apparel up to and including size 6X, such as nightgowns, pajamas, or similar or related items, such as robes, intended to be worn primarily for sleeping or activities related to sleeping. Diapers and underwear are excluded from this definition.

(b) "Size 6X" means the size defined as 6X in Department of Commerce Voluntary Product Standard, previously identified as Commercial Standard, CS 151–50 "Body Measurements for the Sizing of Apparel for Infants, Babies, Toddlers, and Children."[1]

(c) "Item" means any product of children's sleepwear, or any fabric or related material intended or promoted for use in children's sleepwear.

(d) "Trim" means decorative materials, such as ribbons, laces, embroidery, or ornaments. This definition does not include (1) individual pieces less than 2 inches in their longest dimension, provided that such pieces do not constitute or cover in aggregate a total of more than 20 square inches of the item, or (2) functional materials (findings), such as zippers, buttons, or elastic bands, used in the construction of garments.

(e) "Test Criteria" means the maximum char length and residual flame time which a sample or specimen may exhibit in order to pass an individual test.

(f) "Char Length" means the distance from the original lower edge of the specimen exposed to the flame in accordance with the procedure specified in § 1615.4 *Test procedure* to the end of the tear or void in the charred, burned, or damaged area, the tear being made in accordance with the procedure specified in § 1615.4(g)(2).

(g) "Residual Flame Time" is defined as the time from removal of the burner from the specimen to the final extinction of molten material or other fragments flaming on the base of the cabinet.

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[1] Copies available from the National Technical Information Service, 5285 Port Royal Street, Springfield, VA 22151.

(h) "Afterglow" means the continuation of glowing of parts of a specimen after flaming has ceased.

(i) "Fabric Piece" (Piece) means a continuous, unseamed length of fabric, one or more of which make up a unit.

(j) "Fabric Production Unit" (Unit) means any quantity of finished fabric up to 5,000 linear yards for normal sampling or 10,000 linear yards for reduced sampling which has a specific identity that remains unchanged throughout the Unit except for color or print pattern as specified in § 1615.4(b). For purposes of this definition, finished fabric means fabric in its final form after completing its last processing steps as a fabric except for slitting.

(k) "Garment Production Unit" (Unit) means any quantity of finished garments up to 500 dozen which have a specific identity that remains unchanged throughout the Unit except for size, trim, findings, color, and print patterns as specified in § 1615.4(b).

(l) "Sample" means five test specimens.

(m) "Specimen" means an 8.9 x 25.4 cm. (3.5 x 10 in.) section of fabric. For garment testing the specimen will include a seam or trim.

§ 1615.2 Scope and application.

(a) This Standard provides a test method to determine the flammability of items as defined in § 1615.1(c).

(b) All items as defined in § 1615.1(c) are subject to requirements of this standard.

(c) The flammability standards for clothing textiles and vinyl plastic film, Parts 1610 and 1611 of this Chapter, are superseded by this Part 1615 insofar as they apply to items defined in § 1615.1 (c).

§ 1615.3 General requirements.

(a) *Summary of Test Method.* Five conditioned specimens, 8.9 x 25.4 cm. (3.5 x 10 in.), are suspended one at a time vertically in holders in a prescribed cabinet and subjected to a standard flame along their bottom edge for a specified time under controlled conditions. The char length and residual flame time are measured.

(b) *Test Criteria.* The test criteria when the testing is done in accordance with § 1615.4 *Test procedure* are:

(1) *Average Char Length.* The average char length of five specimens shall not exceed 17.8 cm. (7.0 in.).

(2) *Full Specimen Burn.* No individual specimen shall have a char length of 25.4 cm. (10 in.).

(3) *Residual Flame Time.* No individual specimen shall have a residual flame time greater than 10 seconds.

§ 1615.4 Test procedure.

(a) *Apparatus*—(1) *Test Chamber.* The test chamber shall be a steel cabinet with inside dimensions of 32.9 cm. (12 15/16 in.) wide, 32.9 cm. (12 15/16 in.) deep, and 76.2 cm. (30 in.) high. It shall have a frame which permits the suspension of the specimen holder over the center of the base of the cabinet at such a height that the bottom of the specimen holder is 1.7 cm. (¾ in.) above the highest point of the barrel of the gas burner specified in paragraph (c) of this section and perpendicular to the front of the cabinet. The front of the cabinet shall be a close fitting door with a glass insert to permit observation of the entire test. The cabinet floor shall be covered with a piece of asbestos paper, whose length and width are approximately 2.5 cm. (1 in.) less than the cabinet floor dimensions and whose thickness is a nominal 0.3 cm. (⅛ in.). A piece of asbestos paper at least 15.2 x 15.2 cm. (6 x 6 in.) and of nominal thickness of 0.15 cm. (1/16 in.) or less shall be used to catch the drips or other fragments and this latter paper shall be changed after each specimen which drips has been tested. The cabinet to be used in this test method is illustrated in Figure 1 and detailed in Engineering Drawings, Nos. 1 to 7.

(2) *Specimen Holder.* The specimen holder is designed to permit suspension of the specimen in a fixed vertical position and to prevent curling of the specimen when the flame is applied. It shall consist of two U-shaped 0.20 cm. (14 ga. USS) thick steel plates, 42.2 cm. (16⅝ in.) long, and 8.9 cm. (3.5 in.) wide, with aligning pins. The openings in the plates shall be 35.6 cm. (14 in.) long and 5.1 cm. (2 in.) wide. The specimen shall be fixed between the plates, which shall be held together with side clamps. The holder to be used in this test method is illustrated in Figure 2 and detailed in Engineering Drawing No. 7.

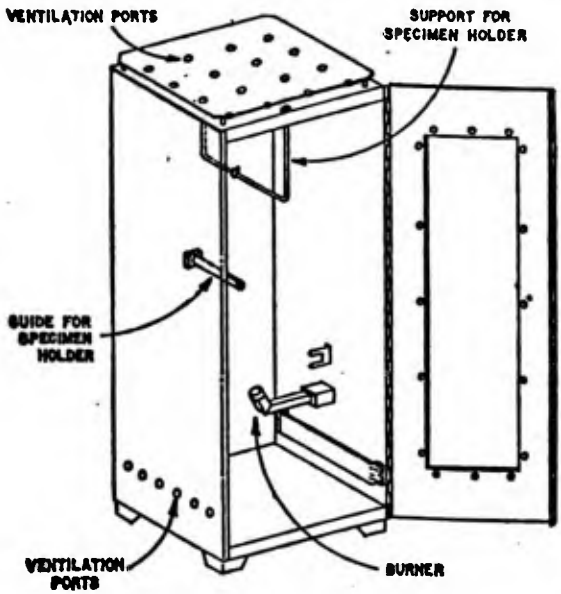
(3) *Burner.* The burner shall be substantially the same as that illustrated in

Figure 1 and detailed in Engineering Drawing No. 6. It shall have a tube of 1.1 cm. (0.43 in.) inside diameter. The input line to the burner shall be equipped with a needle valve. It shall have a variable orifice to adjust the height of the flame. The barrel of the burner shall be at an angle of 25° from the vertical. The burner shall be equipped with an adjustable stop collar so that it may be positioned quickly under the test specimen. The burner shall be connected to the gas source by rubber or other flexible tubing.

(4) *Gas Supply System.* There shall be a pressure regulator to furnish gas to the burner under a pressure of 129±13 mm. Hg (2½±¼ lbs. per sq. in.) at the burner inlet.

(5) *Gas.* The gas shall be at least 97 percent pure methane.

(6) *Hooks and Weights.* Metal hooks and weights shall be used to produce a series of loads for char length determinations. Suitable metal hooks consist of No. 19 gauge steel wire, or equivalent, made from 7.6 cm. (3 in.) lengths of the wire, bent 1.3 cm. (0.5 in.) from one end to a 45° angle hook. The longer end of the wire is fastened around the neck of the weight to be used and the other in the lower end of each burned specimen to one side of the burned area. The requisite loads are given in Table 1.



VERTICAL TEST CABINET
FIGURE 1

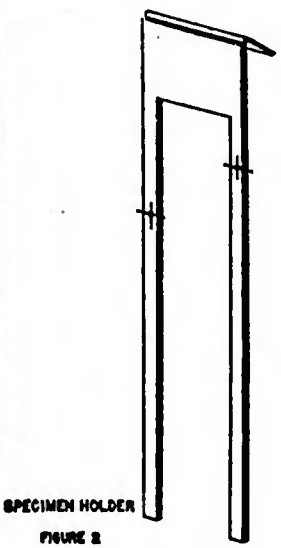
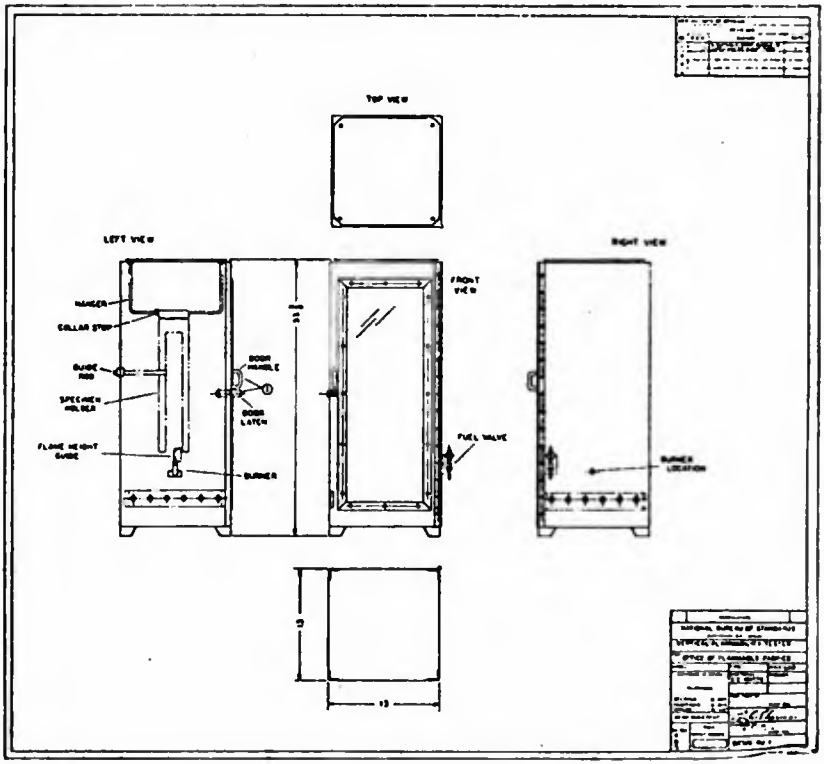
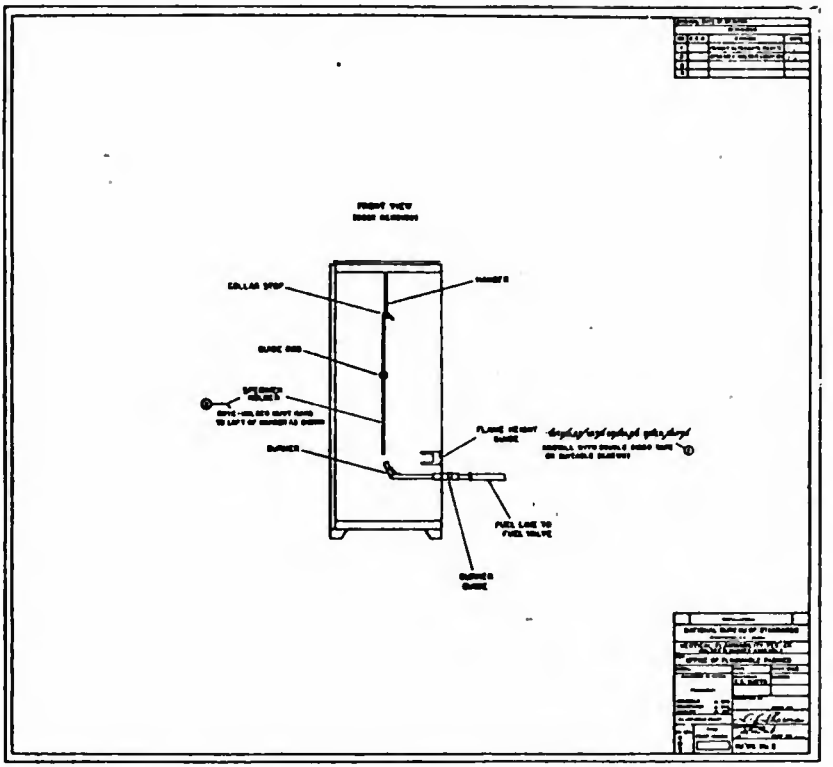
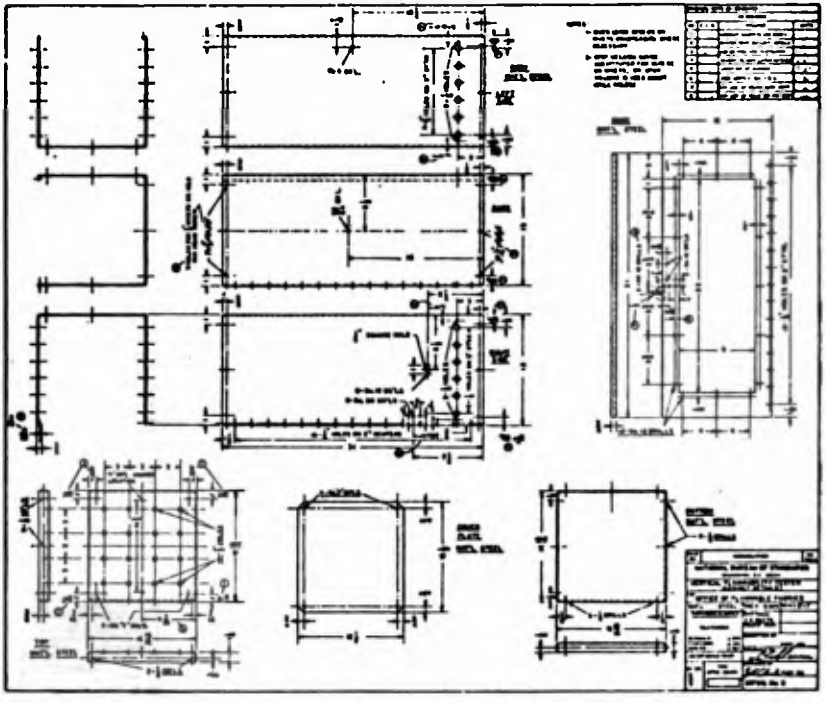
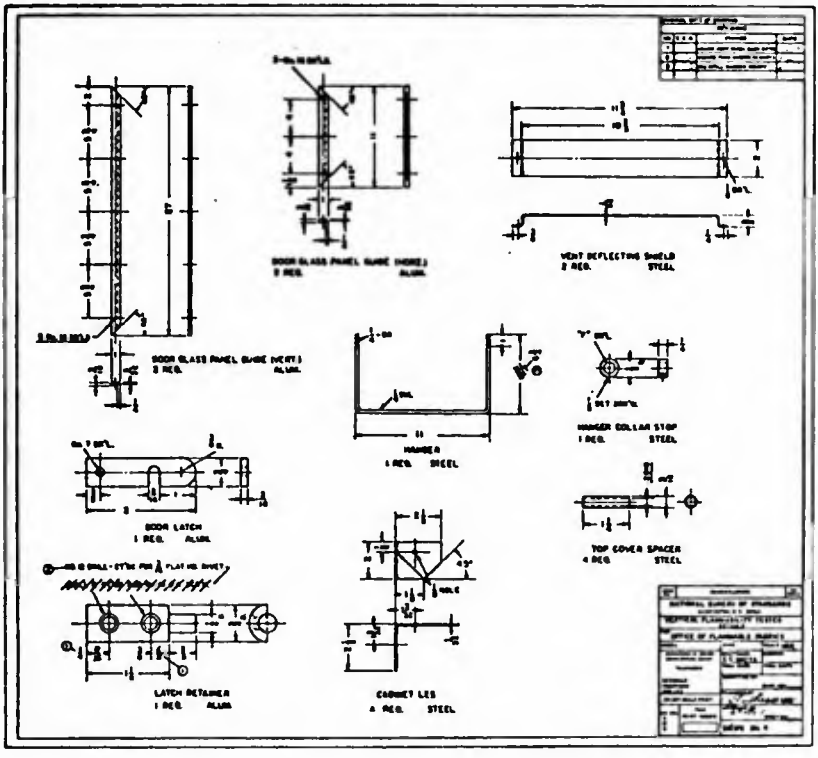


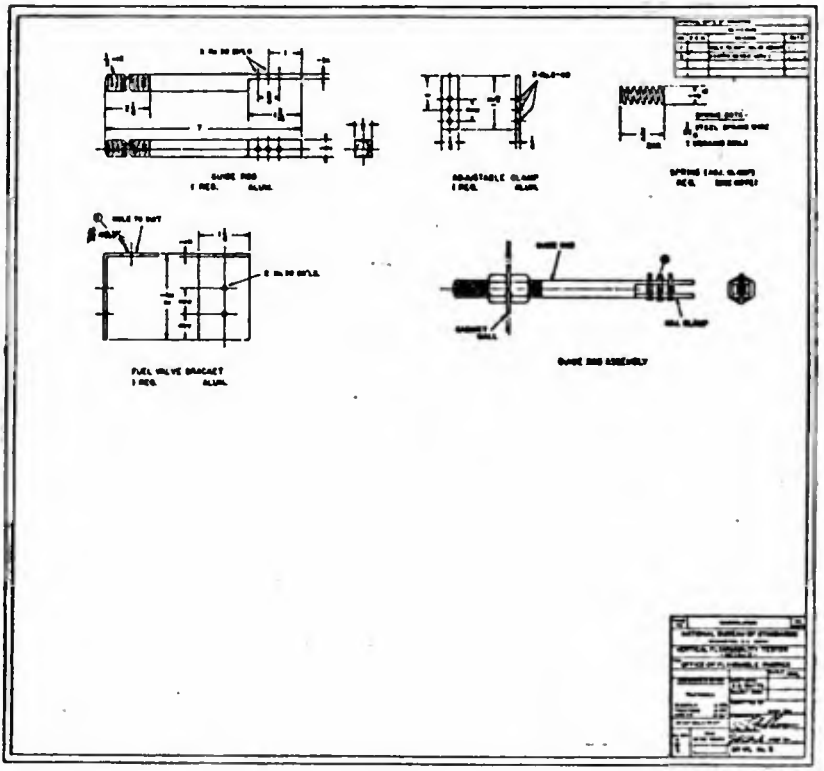
FIGURE 2

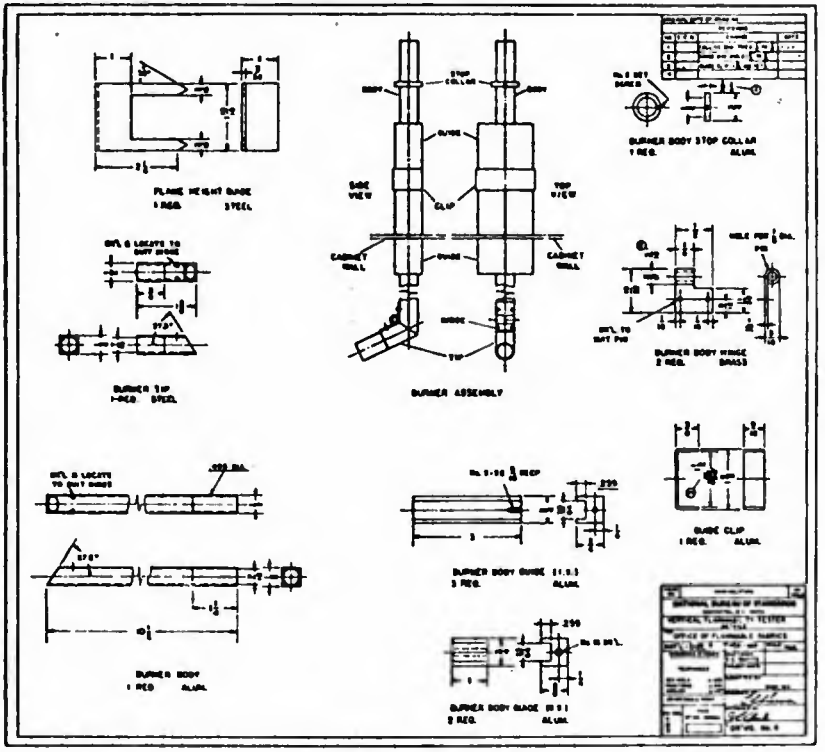

TOP VIEW
LEFT VIEW
RIGHT VIEW
FRONT VIEW
HANGER
COLLAR STUD
GUIDE ROD
SPECIMEN HOLDER
FLAME HEIGHT GUIDE
BURNER
DOOR HANDLE
DOOR LATCH
FUEL VALVE
BURNER LOCATION











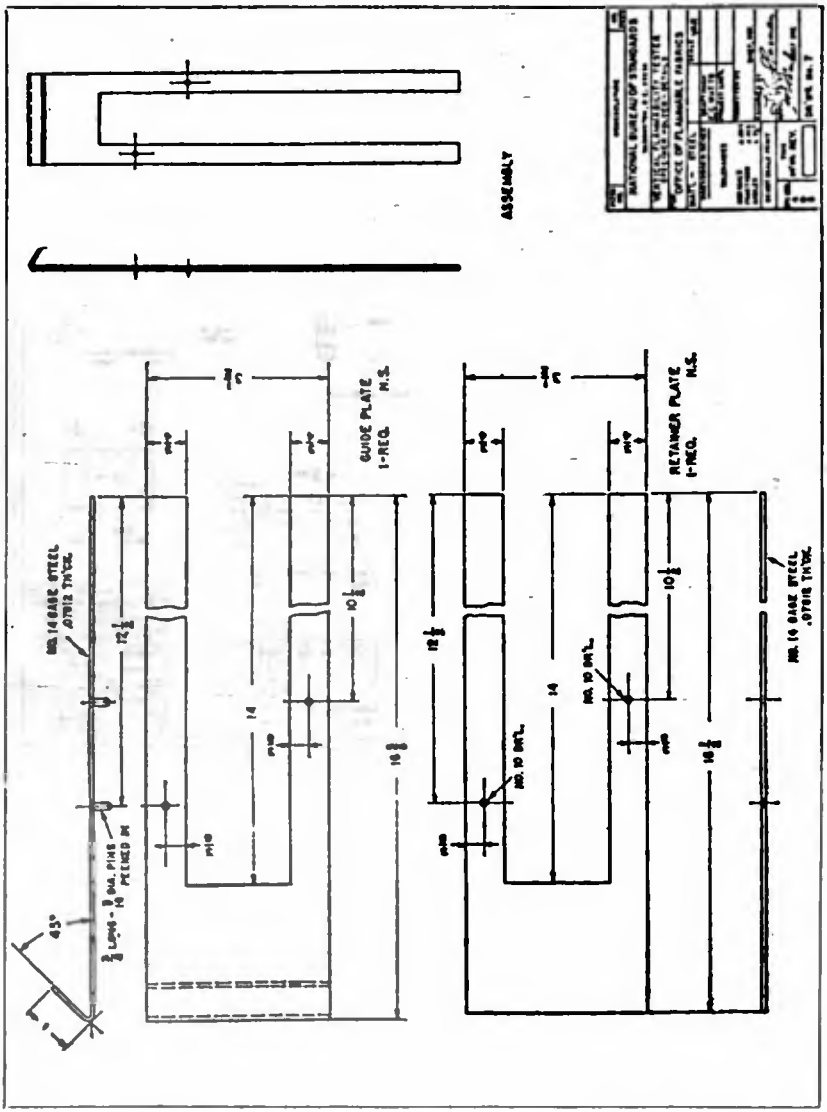

ASSEMBLY
GUIDE PLATE
1-REQ.
RETAINER PLATE
1-REQ.
45°

TABLE 1.—*Original fabric weight* [1]

Grams per square meter	Ounces per square yard	Loads	
		Grams	Pounds
Less than 101	Less than 3	54.4	0.12
101 to 207	3 to 6	113.4	.25
207 to 338	6 to 10	226.8	.50
Greater than 338	Greater than 10	340.2	.75

[1] Weight of the original fabric, containing no seams or trim, is calculated from the weight of a specimen which has been conditioned for at least 4 h at 21±1.1° C (70±2° F) and 65±2 pct relative humidity. Shorter conditioning times may be used if the change in weight of a specimen in successive weighings made at intervals of not less than 2 h does not exceed 0.2 pct of the weight of the specimen.

(7) *Stopwatch.* A stopwatch or similar timing device shall be used to measure time to 0.1 second.

(8) *Scale.* A linear scale graduated in millimeters or 0.1 inch divisions shall be used to measure char length.

(9) *Circulating Air Oven.* A forced circulation drying oven capable of maintaining the specimens at 105±2.8° C. (221±5° F.), shall be used to dry the specimen while mounted in the specimen holders.[2]

(10) *Desiccator.* An air-tight and moisture-tight desiccating chamber shall be used for cooling mounted specimens after drying. Anhydrous silica gel shall be used as the desiccant in the desiccating chamber.

(11) *Hood.* A hood or other suitable enclosure shall be used to provide a draft-free environment surrounding the test chamber. This enclosure shall have a fan or other suitable means for exhausting smoke and/or toxic gases produced by testing.

(b) *Specimens and sampling—General.* (1) The test criteria of § 1615.3(b) shall be used in conjunction with the following fabric and garment sampling plan, or any other approved by the Consumer Product Safety Commission that provides at least the equivalent level of fire safety to the consumer. Alternate sampling plans submitted for approval shall have operating characteristics such that the probability of Unit acceptance at any percentage defective does not exceed the corresponding probability of Unit acceptance of the following sampling plan in the region of the latter's operating characteristic curves that lies between 5 and 95 percent acceptance probability.

(2) Different colors or different print patterns of the same fabric may be included in a single Fabric or Garment Production Unit, provided such colors or print patterns demonstrate char lengths and residual flame times that are not significantly different from each other as determined by previous testing of at least three Samples from each color or print pattern to be included in the Unit.

(3) Garments with different trim and findings may be included in a single Garment Production Unit providing the other garment characteristics are identical except for size, color, and print pattern.

(4) For fabrics whose flammability characteristics are not dependent on chemical additives or chemical reactants to fiber, yarns, or fabrics, the laundering requirement of paragraph (g)(4) of this section is met on subsequent Fabric Production Units if results of testing an initial Fabric Production Unit demonstrate acceptability according to the requirements of paragraph (c) of this section, Normal Sampling, both before and after the appropriate laundering.

(5) If the fabric has been shown to meet the laundering requirement, paragraph (g)(4) of this section, the garments produced from that fabric are not required to be laundered.

(6) Each Sample (five specimens) for all Fabric Sampling shall be selected so that two specimens are in one fabric direction (machine or cross-machine) and three specimens are in the other fabric direction except for the additional Sample selected after a failure, in which case, all five specimens shall be selected in the same fabric direction in which the specimen failure occurred.

(7) Fabric Samples may be selected from fabric as outlined in paragraph (c) of this section entitled Fabric Sampling, or, for verification purposes, from randomly selected garments.

(8) Multilayer fabrics shall be tested with a hem of approximately 2.5 cm. (1 in.) sewn at the bottom edge of the specimen with a suitable thread and stitch. The specimen shall include each of the components over its entire length. Garments manufactured from multilayer fabrics shall be tested with the edge fin-

[2] Option 1 of ASTM, D2654–67T, "Method of Test for Amount of Moisture in Textile Materials," describes a satisfactory oven (1970 Book of ASTM Standards, Part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103).

ish at the bottom edge of the specimen which is used in the garment.

(c) *Specimens and Sampling—Fabric Sampling.* A Fabric Production Unit (Unit) is either accepted or rejected in accordance with the following plan:

(1) *Normal Sampling.* Select one Sample from the beginning of the first Fabric Piece (Piece) in the Unit and one Sample from the end of the last Piece in the Unit, or select a sample from each end of the Piece if the Unit is made up of only one Piece. Test the two selected Samples. If both Samples meet all the Test Criteria of § 1615.3(b), accept the unit. If either or both of the Samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1615.3(b)(1), reject the Unit. If two or more of the individual specimens, from the 10 selected specimens fail the 25.4 cm. (10 in.) char length, .3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), reject the Unit. If only one individual specimen, from the 10 selected specimens, fails the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), select five additional specimens from the same end of the Piece in which the failure occurred, all five to be taken in the fabric direction in which the specimen failure occurred. If this additional Sample passes all the test criteria, accept the Unit. If this additional Sample fails any part of the test criteria, reject the Unit.

(2) *Reduced Sampling.* (i) The level of sampling required for fabric acceptance may be reduced provided the preceding 15 Units of the fabric have all been accepted using the Normal Sampling plan.

(ii) The Reduced Sampling plan shall be the same as for Normal Sampling except that the quantity of fabric in the Unit may be increased to 10,000 linear yards.

(iii) Select and test two Samples in the same manner as in Normal Sampling. Accept or reject the Unit on the same basis as with Normal Sampling.

(iv) Reduced Sampling shall be discontinued and Normal Sampling resumed if a Unit is rejected.

(3) *Tightened Sampling.* The level of sampling required for acceptance shall be increased when a Unit is rejected under the Normal Sampling plan. The Tightened Sampling shall be the same as Normal Sampling except that one additional Sample shall be selected and cut from a middle Piece in the Unit. If the Unit is made up of less than two Pieces, the Unit shall be divided into at least two Pieces. The division shall be such that the Pieces produced by the division shall not be smaller than 100 linear yards or greater than 2,500 linear yards. If the Unit is made up of two Pieces, the additional Sample shall be selected from the interior end of one of the Pieces. Test the three selected Samples. If all three selected Samples meet all the test criteria of § 1615.3(b), accept the Unit. If one or more of the three selected Samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1615.3(b)(1), reject the Unit. If two or more of the individual specimens from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), reject the unit. If only one individual specimen, of the 15 selected Specimens fails the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), select five additional specimens from the same end of the same Piece in which the failure occurred, all five to be taken in the fabric direction in which the Specimen failure occurred. If this additional Sample passes all the test criteria, accept the Unit. If this additional Sample fails any part of the test criteria, reject the Unit. Tightened Sampling may be discontinued and Normal Sampling resumed after five consecutive Units have all been accepted using Tightened Sampling. If Tightened Sampling remains in effect for 15 consecutive Units, production of the specific fabric in Tightened Sampling must be discontinued until that part of the process or component which is causing failure has been identified and the quality of the end product has been improved.

(4) *Disposition of Rejected Units.* (i) The Piece or Pieces which have failed and resulted in the initial rejection of the Unit may not be retested, used, or promoted for use in children's sleepwear as defined in § 1615.1(a) except after reworking to improve the flammability characteristics and subsequent retesting in accordance with the procedures in Tightened Sampling.

(ii) The remainder of a rejected Unit, after removing the Piece or Pieces the failure of which resulted in Unit rejection, may be accepted if the following test plan is successfully concluded at all

required locations. The required locations are those adjacent to each such failed Piece. (Required locations exist on both sides of the "Middle Piece" tested in Tightened Sampling if failure of that Piece resulted in Unit rejection.) Failure of a Piece shall be deemed to have resulted in Unit rejection if Unit rejection occurred and a Sample or specimen from the Piece failed any test criterion of § 1615.3(b).

(iii) The Unit should contain at least 15 Pieces for disposition testing after removing the failing Pieces. If necessary for this purpose, the Unit shall be demarcated into at least 15 approximately equal length Pieces unless such division results in Pieces shorter than 100 linear yards. In this latter case, the Unit shall be demarcated into roughly equal length Pieces of approximately 100 linear yards each. If such a division results in five Pieces or less in the Unit for each failing Piece after removing the failing Pieces, only the individual Piece retest procedure (described subsequently) may be used.

(iv) Select and cut a Sample from each end of each adjoining Piece beginning adjacent to the Piece which failed. Test the two Samples from the Piece. If both Samples meet all the test criteria of § 1615.3(b), the Piece is acceptable. If one or both of the two selected Samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1615.3(b)(1), the Piece is unacceptable. If two or more of the individual Specimens, from the 10 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), the Piece is unacceptable. If only one individual specimen, from the 10 selected specimens, fails the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), select five additional specimens from the same end of the Piece in which the failure occurred, all five to be taken in the fabric direction in which the specimen failure occurred. If this additional Sample passes all the test criteria, the Piece is acceptable. If this additional Sample fails any part of the test criteria, the Piece is unacceptable.

(v) Continue testing adjoining Pieces until a Piece has been found acceptable. Then continue testing adjoining Pieces until three successive adjoining Pieces, not including the first acceptable Piece, have been found acceptable or until five such Pieces not including the first acceptable Piece, have been tested, whichever occurs sooner. Unless three successive adjoining Pieces have been found acceptable among five such Pieces, testing shall be stopped and the entire Unit rejected without further testing. If three successive Pieces have been found acceptable among five such Pieces, accept the three successive acceptable Pieces and the remaining Pieces in the Unit.

(vi) Alternatively, individual Pieces from a rejected Unit containing three or more Pieces may be tested and accepted or rejected on a Piece-by-Piece basis according to the following plan, after removing the Piece or Pieces, the failure of which resulted in Unit rejection. Select four Samples (two from each end) from the Piece. Test the four selected Samples. If all four Samples meet all the Test Criteria of § 1615.3(b), accept the Piece. If one or more of the Samples fail the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), reject the Piece. If two or more of the individual Specimens, from the 20 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(1), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), reject the Piece. If only one individual specimen, from the 20 selected specimens, fails the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), select two additional Samples from the same end of the Piece in which the failure occurred. If these additional two Samples meet all the Test Criteria of § 1615.3(b), accept the Piece. If one or both of the two additional Samples fail any part of the Test Criteria, reject the Piece.

(vii) The Pieces of a Unit rejected after retesting may not be retested, used, or promoted for use in children's sleepwear as defined in § 1615.1(a) except after reworking to improve the flammability characteristics, and subsequent retesting in accordance with the procedures set forth in Tightened Sampling.

(5) *Records.* Records of all Unit sizes, test results, and the disposition of rejected Pieces and Units must be maintained by the manufacturer upon the effective date of this Standard. Rules and regulations may be established by the Consumer Product Safety Commission.

(d) *Specimens and Sampling—Garment Sampling.* (1)(i). The garment sampling plan is made up of two parts: (1) Prototype Testing and (2) Production Testing. Prior to production, prototypes must be tested to assure that the

design characteristics of the garments are acceptable. Garment Production Units (Units) are then accepted or rejected on an individual Unit basis.

(ii) Edge finishes such as hems and binding are excluded from testing except that when trim is used on an edge the trim must be subjected to prototype testing. Seams attaching findings are excluded from testing.

(2) *Prototype Testing.* Preproduction prototypes of a garment style or type shall be tested to assure that satisfactory garment specifications in terms of flammability are set up prior to production.

(i) *Seams.* Make three Samples (15 specimens) using the longest seam type and three Samples using each other seam type 10 inches or longer that is to be included in the garment. Prior to testing, assign each specimen to one of the three Samples. Test each set of three Samples and accept or reject each seam design in accordance with the following plan:

(A) If all three Samples meet all the test criteria of § 1615.3(b), accept the seam design. If one or more of the three Samples fail the 17.8 cm (7 in.) average char length criterion, § 1615.3(b)(1), reject the seam design. If three or more of the individual Specimens from the 15 selected specimens fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), reject the seam design. If only one of the individual specimens from the 15 selected specimens fails the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), accept the seam design.

(B) If two of the individual specimens from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criteria, §1615.3(b)(3), select three more Samples (15 specimens) and retest. If all three additional Samples meet all the test criteria of § 1615.3(b) accept the seam design. If one or more of the three additional Samples fail the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), reject the seam design. If two or more of the individual specimens, from the 15 selected specimens, fail the (2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), reject the seam design. If only one of the individual specimens from the 15 selected specimens, fails the 25.4 cm. (10 in.) char length § 1615.3(b)(2), and/or the 10 second residual flame time criteria, § 1615.3(b)(3), accept the seam design.

(ii) *Trim.* (A) Make three Samples (15 specimens) from each type of trim to be included in the garment. Specimens shall be prepared by sewing or attaching the trim to the center of the vertical axis of an appropriate section of untrimmed fabric, beginning the sewing or attachment at the lower edge of each specimen. The sewing or attachment shall be made in the manner in which the trim is to be attached in the garment.

(B) Sewing or otherwise attaching the trim shall be done with thread or fastening material of the same composition and size to be used for this purpose in the garment and using the same stitching or seam type. The trim shall be sewn or fastened the entire length of the specimen. Prior to testing, assign each specimen to one of the three Samples. Test the sets of three Samples and accept or reject the type of trim and design on the same basis as seam design.

(3) *Production Testing.* A Unit is either accepted or rejected according to the following plan:

(i) (A) From each Unit select at random sufficient garments and cut three Samples (15 specimens) from the longest seam type. No more than five specimens may be cut from a single garment. Prior to testing, assign each specimen to one of the three Samples. All specimens cut from a single garment must be included in the same Sample. Test the three selected Samples. If all three Samples meet all the test criteria of § 1615.3(b), accept the Unit. If one or more of the three Samples fail the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), reject the Unit. If four or more of the individual specimens, from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), and/or the 10 second residual flame time criterion, §1615.3(b)(3), reject the Unit. If three or less of the individual specimens, from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(2) and/or the 10 second residual flame time criteria, § 1615.3(b)(3), accept the Unit.

(B) (*1*) If the garment under test does not have a 10-inch seam in the largest size in which it is produced, the following selection and testing procedure shall be followed.

(2) Select and cut specimens 8.9 cm. (3.5 in.) wide by the maximum available

seam length, with the seam in the center of the specimen and extending the entire specimen length. Cut three Samples (15 specimens). These specimens shall be placed in specimen holders so that the bottom edge is even with the bottom of the specimen holder and the seam begins in the center of the bottom edge. Prior to testing, assign each specimen to one of the three Samples. All specimens cut from a single garment must be included in the same Sample.

(3) Test the three Samples. If all three Samples pass the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), and if three or less individual specimens fail by charring the entire specimen length and/or exceeding the 10 second residual flame time criterion, § 1615.3(b)(3), accept the Unit. If the Unit is not accepted in the above test, three Samples (15 specimens) of the longest seam type shall be made using fabric and thread from production inventory and sewn on production machines by production operators. The individual fabric sections prior to sewing must be no larger than 20.3 x 63.3 cm. (8 in. x 25 in.) and must be selected from more than one area of the base fabric. Test the three prepared Samples. Accept or reject the Unit as described previously in this subsection.

(4) *Disposition of Rejected Units.* Rejected Units shall not be retested, used, or promoted for use in children's sleepwear as defined in § 1615.1(a), except after reworking to improve the flammability characteristics and subsequent retesting in accordance with the procedures set forth in garment production testing.

(5) *Records.* Records of all Unit sizes, test results, and the disposition of rejected Units must be maintained by the manufacturer upon the effective date of this standard. Rules and regulations may be established by the Consumer Product Safety Commission.

(e) *Specimens and Sampling—Compliance Market Sampling Plan.* Sampling plans for use in market testing of items covered by this Standard may be issued by the Consumer Product Safety Commission. Such plans shall define noncompliance of a production Unit to exist only when it is shown, with a high level of statistical confidence, those production Units represented by tested items which fail such plans will, in fact, fail this standard. Production units found to be non-complying under the provisions of paragraph (e) of this section shall be deemed not to conform to this Standard. The Consumer Product Safety Commission may publish such plans in the FEDERAL REGISTER.

(f) *Mounting and conditioning of specimens.* (1) The specimens shall be placed in specimen holders so that the bottom edge of each specimen is even with the bottom of the specimen holder. Mount the specimen in as close to a flat configuration as possible. The sides of the specimen holder shall cover 1.9 cm. (¾ in.) of the specimen width along each long edge of the specimen, and thus shall expose 5.1 cm. (2 in.) of the specimen width. The sides of the specimen holder shall be clamped with a sufficient number of clamps or shall be taped to prevent the specimen from being displaced during handling and testing. The specimens may be taped in the holders if the clamps fail to hold them. Place the mounted specimens in the drying oven in a manner that will permit free circulation of air at 105° C. (221° F.) around them for 30 minutes.[1]

(2) Remove the mounted specimens from the oven and place them in the desiccator for 30 minutes to cool. No more than five specimens shall be placed in a desiccator at one time. Specimens shall remain in the desiccator no more than 60 minutes.

(g) *Testing*—(1) *Burner adjustment.* With the hood fan turned off, use the needle valve to adjust the flame height of the burner to 3.8 cm. (1½ in.) above the highest point of the barrel of the burner. A suitable height indicator is shown in Engineering Drawing No. 6 and Figure 1.

(2) Specimen Burning and Evaluation. (i) One at a time, the mounted specimens shall be removed from the desiccator and suspended in the cabinet for testing. The cabinet door shall be closed and the burner flame impinged on the bottom edge of the specimen for

[1] If the specimens are moist when received, permit them to air dry at laboratory conditions prior to placement in the oven. A satisfactory preconditioning procedure may be found in ASTM D 1776-67, "Conditioning Textiles and Textile Products for Testing." ("1970 Book of ASTM Standards," Part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

3.0±0.2 seconds.[4] Flame impingement is accomplished by moving the burner under the specimen for this length of time, and then removing it. If flaming drips or fragments are evident, measure the residual flame time to the nearest 0.1 second.

(ii) When afterglow has ceased, remove the specimen from the cabinet and holder, and place it on a clean flat surface. Fold the specimen lengthwise along a line through the highest peak of the charred or melted area; crease the specimen firmly by hand. Unfold the specimen and insert the hook with the correct weight as shown in Table 1 in the specimen on one side of the charred area 6.4 mm. (¼ in.) from the lower edge.

(iii) Tear the specimen by grasping the other lower corner of the fabric and gently raising the specimen and weight clear of the supporting surface.[5] Measure the char length as the distance from the end of the tear to the edge of the specimen exposed to the flame. After testing each specimen, vent the hood and cabinet to remove the smoke and/or toxic gases.

(3) *Report.* Report the value of char length, in centimeters (inches), and the residual flame time, in seconds, for each specimen, as well as the average char length for each set of five specimens.

(4) *Laundering.* (i) The procedures described under paragraphs (b) through (g) of this section shall be carried out on finished items (as produced or after one washing and drying) and after they have been washed and dried 50 times according to AATCC Test Method 124–1969.[6] Items which do not withstand 50 launderings shall be tested at the end of their useful service life.

(ii) Washing procedure 6.2(III), with a water temparture of 60°±2.8° C. (140 ±5° F.), and drying procedure 6.3.2(B), shall be used. Maximum load shall be 3.64 Kg. (8 pounds) and may consist of any combination of test samples and dummy pieces. Alternatively, a different number of times under another washing and drying procedure may be specified and used, if that procedure has previously been found to be equivalent by the Consumer Product Safety Commission. Such laundering is not required of items which are not intended to be laundered, as determined by the Consumer Product Safety Commission.

(iii) Items which are not susceptible to being laundered and are labeled "dry-clean only" shall be drycleaned by a procedure which has previously been found to be acceptable by the Consumer Product Safety Commission.

(iv) For the purpose of the issuance of a guarantee under section 8 of the act, finished sleepwear garments to be tested according to paragraphs (b) through (e) of this section need not be laundered or drycleaned provided all fabrics used in making the garments (except trim) have been guaranteed by the fabric producer to be acceptable when tested according to paragraphs (b) through (e) of this section.

[40 FR 59903, Dec. 30, 1975; 41 FR 1061, Jan. 6, 1976; 41 FR 8032, Feb. 24, 1976]

§ 1615.5 Labeling requirements.

(a) *Care labels.* All items of children's sleepwear shall be labeled with precautionary instructions to protect the items from agents or treatments which are known to cause deterioration of their flame resistance. If the item has been initially tested under § 1615.4(g)(4) after one washing and drying, it shall be labeled with instructions to wash before wearing. Such labels shall be permanent and otherwise in accordance with rules and regulations established by the Consumer Product Safety Commission.

(b) *Temporary Requirement for Noncomplying Items.* Items of noncomplying children's sleepwear which are manufactured during the 12 months following the effective date of the standard shall, prior to introduction into commerce, be prominently, permanently, and conspicuously labeled with the following statement: "Flammable (Does Not Meet U.S. Department of Commerce Standard DOC FF 3–71.) Should not be worn near sources of fire." Such labels should be in

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[4] If more than 15 seconds elapse between removal of a specimen from the desiccator and the initial flame impingement, that specimen shall be reconditioned prior to testing.

[5] A figure showing how this is done is given in AATCC 34–1969, Technical Manual of the American Association of Textile Chemists and Colorists, vol. 46, 1970, published by AATCC, Post Office Box 12215, Research Triangle Park, N.C. 27709.

[6] Technical Manual of the American Association of Textile Chemists and Colorists, vol. 46, 1970, published by AATCC, Post Office Box 12215, Research Triangle Park, N.C. 27709.

accordance with the rules and regulations established by the Consumer Product Safety Commission.

Subpart B—Rules and Regulations

AUTHORITY: Sec. 5, 67 Stat. 112-113, as amended, 81 Stat. 570, 15 U.S.C. 1194, unless otherwise noted.

§ 1615.31 Labeling, recordkeeping, advertising, retail display and guaranties.

(a) *Definitions.* For the purposes of this section, the following definitions apply:

(1) "Standard" means the Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X (FF 3-71) (Subpart A of this Part) promulgated by the Secretary of Commerce in the FEDERAL REGISTER of July 29, 1971 (36 FR 14062), and amended by him in the FEDERAL REGISTER of July 21, 1972 (37 FR 14624).

(2) "Children's sleepwear" means "children's sleepwear" as defined in § 1615.1(a) of the Standard: that is, "any product of wearing apparel up to and including size 6X, such as nightgowns, pajamas, or similar or related items, such as robes, intended to be worn primarily for sleeping or activities related to sleeping. Diapers and underwear are excluded from this definition."

(3) "Item" means "item" as defined in § 1615.1(c) of the Standard: that is, "any product of children's sleepwear, or any fabric or related material intended or promoted for use in children's sleepwear."

(4) "Marketing or handling" or "marketed or handled" means any one or more of the transactions set forth in section 3 of the Flammable Fabrics Act (15 U.S.C. 1192).

(5) The definitions of terms set forth in § 1615.1 of the Standard shall also apply to this section.

(b) *Labeling.* (1) where any agent or treatment is known to cause deterioration of flame resistance or otherwise enhances the flammability characteristics of an item, such item shall be prominently, permanently, conspicuously, and legibly labeled with precautionary care and treatment instructions to protect the item from such agent or treatment.

(2) If the item has been initially tested under § 1615.4(g)(4) of the Standard after one washing and drying, it shall be prominently, permanently, conspicuously, and legibly labeled with instructions to wash before wearing.

(3) Any item manufactured, imported, or otherwise marketed or handled that is not in compliance with the Standard and that was manufactured between July 29, 1972, and July 29, 1973, shall, prior to introduction into commerce, be prominently, permanently, conspicuously, and legibly labeled with the statement "Flammable (Does Not Meet U.S. Department of Commerce Standard DOC FF 3-71). Should not be worn near sources of fire."

(4) Where any fabric or related material intended or promoted for use in children's sleepwear is sold or intended for sale to the ultimate consumer for the purpose of conversion into children's sleepwear, each bolt, roll, or other unit shall be labeled with the information required by this section. Each item of fabric or related material sold to an ultimate consumer must be accompanied by a label, as prescribed by this section, that can by normal household methods be permanently affixed by the ultimate consumer to any item of children's sleepwear made from such fabric or related material.

(5) Where items required to be labeled in accordance with paragraphs (b) (2), (3), and (4) of this section are marketed at retail in packages, and the required label is not readily visible to prospective purchasers, the packages must also be prominently, conspicuously, and legibly labeled with the required information.

(6) Samples, swatches, or specimens used to promote or effect the sale of items subject to the Standard shall be labeled in accordance with this section with the information required by this section, except that such information may appear on accompanying promotional materials attached to fabric samples, swatches, or specimens used to promote the sale of fabrics to garment manufacturers. This paragraph (b)(6) of this section shall not apply, however, to samples, swatches, or specimens prominently, permanently, conspicuously, truthfully, and legibly labeled with the statement "Flammable. Sample only. Not for use or resale. Does not meet Standard for the Flammability of Children's Sleepwear, DOC FF 3-71."

(7) The information required on labels by this section shall be set forth separately from any other information appearing on the same label. Other information, representations, or disclosures not required by this action but placed on the same label with information required by this section, or placed

on other labels elsewhere on the item, shall not interfere with the information required by this section. No person, other than the ultimate consumer, shall remove or mutilate, or cause or participate in the removal or mutilation of, any label required by this section to be affixed to any item.

(8) Every manufacturer, importer, or other person (such as a converter) initially introducing items subject to the Standard into commerce shall assign to each item a unit identification (number, letter or date, or combination, thereof) sufficient to identify and relate to the fabric production unit or garment production unit of which the item is a part. Such unit identification shall be designated in such a way as to indicate that it is a production unit identification under the Standard. The letters "GPU" and "FPU" may be used to designate a garment production unit identification and fabric production unit identification respectively, at the option of the labeler.

(i) Where fabrics required to be labeled or stamped in accordance with this section are marketed at retail in packages and the required label or stamp is not readily visible to the prospective purchaser, the packages must also be prominently, conspicuously, and legibly labeled with the information required by this section.

(ii) Where garments required to be labeled or stamped in accordance with paragraph (b)(8) of this section are marketed at retail in packages and the required label or stamp is not readily visible to the prospective purchasers:

(A) The packages must also be prominently, conspicuously, and legibly labeled with the information required by this section; or

(B) There must be a garment style identification that is prominent, conspicuous, and legible and readily visible to the prospective purchaser, either on a label or hang tag attached to the garments or on the garment packages. A style is a garment design or grouping, preselected by the manufacturer. A style may be composed of garments that form all or part of one or more GPU's and the style may include any number of garments the manufacturer chooses. Style identification means any numbers, letters, or combination thereof that are sufficient to identify the garments of the style and may include information such as color, season or size. If this option B is selected, in any recall of noncomplying items from a particular GPU:

(1) the garment manufacturer must recall the entire style(s) from all customers who purchased garments of the style(s) of which the GPU is part. However, retailers may elect to return only garments from the particular GPU necessitating the recall rather than the entire style(s) being recalled; and

(2) within 48 hours of a written request, the garment manufacturer must supply to the Commission any samples in its possession of garments from the GPU, as requested. As required of all persons subject to this section, the garment manufacturer must also, within the time requested, supply to the Commission the names of any customers who purchased during a specified period of time, garments from the GPU (or the style(s) of which the GPU is a part) and supply access to all records required under the Standard and this section.

(iii) Each garment subject to the Standard shall bear a label with minimum dimensions of 1.3 centimeters (0.5 inch) by 1.9 centimeters (0.75 inch) containing the appropriate garment production unit identification for that garment in letters which are clear, conspicuous, and legible and in a color which contrasts with the background of the label, or shall have such information stamped on the garment itself in letters which are clear, conspicuous, and legible and in a color which contrasts with the background, and at least 2.54 centimeters (1 inch) in every direction from any other information. The stamp or label containing the garment production unit identification must be of such construction, and affixed to the garment in such a manner as to remain on or attached to the garment and legible and visible throughout its intended period of use.

(iv) The fabric production unit identification shall appear in letters at least 0.4 centimeters (one-sixth of an inch) in height against a contrasting background on each label that relates to such fabric and is required by the Textile Fiber Products Identification Act (15 U.S.C. 70–70k) and the regulations thereunder (16 CFR 303.1 through 303.45), or by the Wool Products Labeling Act of 1939 (15 U.S.C. 68–68i) and the regulations thereunder (16 CFR 300.1 through 300.35). When the information required by the Textile Fiber Product Identification Act or by the Wool Products Label-

ing Act of 1939 appears on an invoice used in lieu of labeling, the fabric production unit identification required by this section may be placed clearly, conspicuously, and legibly on the same invoice in lieu of labeling.

(c) *Advertisements.* (1) All advertisements for noncomplying items of children's sleepwear manufactured between July 29, 1972 (the effective date of the Standard), and July 29, 1973, that are subject to the Standard and that are being offered for sale to consumers through direct mail, catalogs, telephone solicitation, or under any other circumstances where the consumer in the ordinary course of dealing is not afforded an opportunity to inspect the label before receiving the item, shall contain a clear and conspicuous disclosure of the statement "Flammable (Does Not Meet Standard for the Flammability of Children's Sleepwear, DOC FF 3–71). Should not be worn near sources of fire."

(2) All other advertisements for noncomplying items subject to the Standard shall contain a clear and conspicuous disclosure of the statement "Flammable—Read the Label."

(d) *Segregation of complying and noncomplying items by retailer.* Every person who sells noncomplying items (as defined in § 1615.1(c) of the Standard and paragraph (b)(3) of this section at retail stores or other establishments open to the general public where goods are offered for sale shall:

(1) Display the items which comply with the Standard, and for which the seller has documentary evidence of such compliance, so that no other merchandise is intermingled with those items; and identify such complying items with at least one sign, with black letters at least 2.5 centimeters (one inch) in height against a solid white background, bearing the statement: "Flame Resistant. Complies With Standard for the Flammability of Children's Sleepwear (DOC FF 3–71)."

(2) Display all other items of children's sleepwear, sizes 0 through 6X, at a separate location within the store and identify these items with at least one sign, with black letters at least 2.5 centimeters (1 inch) in height against a solid white background, bearing the statement "Flammable Does Not Meet Standard for the Flammability of Children's Sleepwear (DOC FF 3–71)."

(3) Segregate those items of children's sleepwear, sizes 0 through 6X, which comply with the Standard, and for which the seller has documentary evidence of such compliance, so that they shall not be located within 91 centimeters (36 inches) of any other items of children's sleepwear, size 0 through 6X, when displayed for sale to consumers.

(e) *Records—manufacturers, importers, or other persons initially introducing items into commerce.*—(1) *General.* Every manufacturer, importer, or other person (such as a converter) initially introducing into commerce items subject to the Standard, irrespective of whether guaranties are issued under paragraph (f) of this section, shall maintain written and physical records as hereinafter specified. The records required must establish a line of continuity through the process of manufacture of each production unit of articles of children's sleepwear, or fabrics or related materials intended or promoted for use in children's sleepwear, to the sale and delivery of the finished items and from the specific finished item to the manufacturing records. Such records shall show with respect to such items:

(i) Details, description, and identification of any and all sampling plans engaged in pursuant to the requirements of the Standard. Such records must be sufficient to demonstrate compliance with such sampling plan(s) and must relate the sampling plan(s) to the actual items produced, marketed, or handled. This requirement is not limited by other provisions of paragraph (e) of this section.

(ii) Garment production units or fabric production units of all garments or fabrics marketed or handled. The records must relate to an appropriate production unit identification on or affixed to the item itself in accordance with paragraph (b)(8) of this section, and the production unit identification must relate to the garment production unit or fabric production unit.

(iii) Test results and details of all tests performed, both prototype and production, including char lengths and residual flame time of each specimen tested, average char length of the samples required to be tested, details of the sampling procedure employed, name and signature of person conducting tests, date of tests, and all other records necessary to demonstate compliance with the test procedures and sampling plan specified by the Standard or authorized alternate sampling plan.

(iv) Disposition of all failing or rejected items. Such records must demonstrate that the items were retested or reworked and retested in accordance with the Standard prior to sale or distribution and that such retested or reworked and retested items comply with the Standard, or otherwise show the disposition of such items.

(v) Fiber content and manufacturing specifications relating the same to prototype and production testing and to the production units to which applicable.

(vi) Data and test results relied on as a basis for inclusion of different colors or different print patterns of the same fabric as a single fabric or garment production unit under § 1615.4(b) of the Standard.

(vii) Data and test results relied on as a basis for reduced laundering of fabric or garments during test procedures under § 1615.4(g)(4) of the Standard and any guaranties issued or received relating to laundering as well as details of the laundering procedure utilized.

(viii) Identification, composition, and details of application of any flame retardant treatments employed. All prototype and production records shall relate to such information.

(ix) Date and quantity of each sale or delivery of items subject to the Standard (except the date of sale to an ultimate consumer) and the name and address of the purchaser or recipient (except an ultimate consumer). The items involved in each such sale or delivery shall be identified by production unit or by style. A style is a garment design or grouping, preselected by the manufacturer. A style may be composed of garments that form all or part of one or more garment production units and the style may include any number of garments that form all or part of one or more garment production units and the style may include any number of garments the manufacturer chooses. If a person subject to the requirements of § 1615.31(e) maintains sales records which identify the items sold or delivered by style, and if recall of one or more production units subject to the Standard is required, that person in recalling such production units shall notify all purchasers of items of the style in which such production unit or units were manufactured. Retailers may elect to return all items of the style involved, or all items of the production unit or units subject to recall.

(2) *Fabrics.* In addition to the information specified in paragraph (e)(1) of this section the written and physical records maintained with respect to each fabric production unit shall include (i) finished fabric samples sufficient to repeat the fabric sampling procedure required by § 1615.4 (b) through (e) of the Standard for each production unit marketed or handled; and (ii) records to relate the samples to the actual fabric production unit. Upon written request of any duly authorized employee or agent of the Commission, samples sufficient for the sampling and testing of any production unit in accordance with § 1615.4 (b) through (e) of the Standard shall be furnished from these records within the time specified in that written request.

(3) *Garments—prototype testing.* In addition to the records specified in paragraph (e)(1) of this section, the following written and physical records shall be maintained with respect to the garment prototype testing required by the Standard:

(i) Specification, fiber content, and details of construction on all seams, fabrics, threads, stitches, and trims used in each garment style or type upon which prototype testing was performed, relating the same to such garment style or type and to all production units to which such prototype testing is applicable.

(ii) Samples sufficient to repeat the prototype tests required by § 1615.4 (b) through (e) of the Standard for all fabrics, seams, threads, stitches, and trims used in such prototype testing, relating such samples to the records required by paragraph (e) of this section including the information required by paragraph (e)(3)(i) of this section. Upon written request of any duly authorized employee or agent of the Commission, samples sufficient for the testing of any prototype specimens identical to those specimens that were actually tested pursuant to the Standard shall be furnished from these records within the time specified in that written request.

(iii) A complete untested garment from each style or type of garment marketed or handled.

(iv) Remains of all physical specimens tested in accordance with the prototype testing required by § 1615.4 (b) through (e) of the Standard, relating such samples to the records required by paragraph (e) of this section including information required by paragraph (e)(3)(i) of this section.

(4) *Garments—production testing.* In addition to the records required by paragraph (e)(1) of this section, written and physical records shall be maintained and shall show with respect to each garment production unit:

(i) Source and fabric production unit identification of all fabrics subject to testing used in each garment production unit.

(ii) Identification and appropriate reference to all prototype records and prototype tests applicable to each production unit.

(iii) Any guaranty relied upon to demonstrate that the fabric utilized in such garments meets the laundering requirements of the Standard.

(iv) Data sufficient to show that tested samples were selected from the production unit at random from regular production.

(v) Written data that will enable the Commission to obtain and test garments under any applicable compliance market sampling plan.

(5) *Record retention requirements.* The records required by paragraph (e) of this section shall be maintained for 3 years, except that records relating to prototype testing shall be maintained for as long as they are relied upon as demonstrating compliance with the prototype testing requirements of the Standard and shall be retained for 3 years thereafter.

(f) *Tests for guaranty purposes.* Reasonable and representative tests for the purpose of issuing a guaranty under section 8 of the Flammable Fabrics Act (15 U.S.C. 1197) for items subject to the Standard shall be those tests performed pursuant to any sampling plan or authorized alternative sampling plan engaged in pursuant to the requirements of the Standard.

(g) *Compliance with this section.* No person subject to the Flammable Fabrics Act shall manufacture, import, distribute, or otherwise market or handle any item subject to the Standard, including samples, swatches, or specimens used to promote or effect the sale thereof, which is not in compliance with this section.

Subpart C—Interpretations and Policies

AUTHORITY: Secs. 1–17, 67 Stat. 111–115, as amended, 81 Stat. 568–74; 15 U.S.C. 1191–1204.

§ 1615.61 [Reserved]

§ 1615.62 Policy and interpretation relative to items in inventory or as to recordkeeping requirements.

(a) The Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X (FF 3–71) (Subpart A of this Part) was published in the FEDERAL REGISTER on July 29, 1971, at 36 FR 14062 et seq., and amended in the FEDERAL REGISTER of July 21, 1972 (37 FR 14624). The Notice of Standard provided at 36 FR 14063 that "Items in inventory or with the trade on the effective date of the Standard are exempt. All concerned parties shall be required to maintain records that these items offered for sale after the effective date of the Standard are eligible for the exemption."

(b) The Children's Sleepwear Standard was amended on July 21, 1972, at 37 FR 14624 et seq. to incorporate a sleepwear sampling plan therein and to make certain nonsubstantive technical corrections as to the test equipment. The effective date remained the same. In issuance of such amendment the Notice of Amendment specified at 37 FR 14625 that "It is emphasized that the only substantive change made to the standard involves the amendment necessary to include the sampling plan."

(c) The Notice of Amendment did not repeat the language in the original 1971 Notice of Standard relative to items in inventory or as to recordkeeping requirements.

(d) Questions have arisen under this standard as to the application of the standard to goods manufactured outside the United States prior to the effective date of the standard on July 29, 1972, as to whether a person claiming the exemption specified in the standard must maintain records showing eligibility for exemption from the standard.

(e) In the Commission's view, the provisions of the July 29, 1971, Notice of Standard as to exemption of items of children's sleepwear in inventory or with the trade on the effective date of the standard and as to the necessity of maintenance of records to show eligibility for such exemption are in full force and effect.

NOTE: This policy was published by the Federal Trade Commission on January 31, 1973 (38 FR 3014). It continues in effect.

§ 1615.63 Policy regarding garment production unit identification.

No provision of § 1615.31(b)(8) prohibits placement of a garment production unit identification on a label containing other information. Provided, however, that when the garment production unit identification appears on a label containing other information, provisions of § 1615.31(b)(7) require that the garment production unit identification must be set forth separately from any other information appearing on the same label, and that information not required by the applicable enforcement regulation § 1615.31, but placed on the same label with the garment production unit identification, shall not interfere with the garment production unit identification.

PART 1616—STANDARD FOR THE FLAMMABILITY OF CHILDREN'S SLEEPWEAR: SIZES 7 THROUGH 14 (FF 5–74)

Subpart A—The Standard

Sec.
1616.1 Scope and application.
1616.2 Definitions.
1616.3 General requirements.
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Subpart B—Rules and Regulations

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Subpart C—Interpretations and Policies

1616.61 Enforcement policy.
1616.62 Policy regarding retail display requirement for items.
1616.63 Policy regarding garment production unit identification.
1616.64 Policy regarding recordkeeping requirements.

SOURCE: 40 FR 59917, Dec. 30, 1975, unless otherwise noted.

Subpart A—The Standard

AUTHORITY: Sec. 4, 67 Stat. 112, as amended, 81 Stat. 569-70; 15 U.S.C. 1193.

§ 1616.1 Scope and application.

(a) This Standard provides a test method to determine the flammability of children's sleepwear, sizes 7 through 14 and fabric or related material intended or promoted for use in such children's sleepwear.

(b) All sleepwear items as defined in § 1616.2(c), are subject to the requirements of this Standard.

(c) Children's sleepwear items which meet all the requirements of the Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X (FF 3-71) (Subpart A of Part 1615 of this Chapter) are in compliance with this Standard. FF 3-71 was issued July 29, 1971 (36 FR 14062), and amended July 21, 1972 (37 FR 14624).

(d) As used in this Standard, "pass" and "fail" refer to the test criteria for specimens while "accept" and "reject" refer to the acceptance or rejection of a production unit under the sampling plan.

(e) The flammability standards for clothing textiles and vinyl plastic film, Parts 1610 and 1611 of this Chapter, are superseded by this Part 1616 insofar as they apply to items defined in § 1616.2(c).

§ 1616.2 Definitions.

In addition to the definitions given in section 2 of the Flammable Fabrics Act, as amended (sec. 2, 81 Stat. 568; 15 U.S.C. 1191) and the procedures under the Act for setting standards (Part 1607 of this Chapter), the following definitions apply for the purposes of this Standard:

(a) "Children's sleepwear" means any product of wearing apparel size 7 through size 14, such as nightgowns, pajamas, or similar or related items, such as robes, intended to be worn primarily for sleeping or activities related to sleeping. Underwear and diapers are excluded from this definition.

(b) "Sizes 7 through 14" means the sizes defined as 7 through 14 in Department of Commerce Voluntary Product Standards PS 54–72 and PS 36–70, previously identified as Commercial Standards, CS 153–48, "Body Measurements for the Sizing of Girls' Apparel" and CS 155–50, "Body Measurements for the Sizing of Boys' Apparel", respectively.[1]

(c) "Item" means any product of children's sleepwear or any fabric of related material intended or promoted for use in children's sleepwear.

(d) "Trim" means decorative materials, such as ribbons, laces, embroidery, or ornaments. This definition does not include (1) individual pieces less than 2 inches in their longest dimension, provided that such pieces do not con-

[1] Copies available from the National Technical Information Service, 5285 Port Royal Street, Springfield VA 22151.

stitute or cover in aggregate a total of more than 20 square inches of the item or (2) functional materials (findings), such as zippers, buttons or elastic bands, used in the construction of garments.

(e) "Test criteria" means the average char length and the maximum char length which a sample of specimen may exhibit in order to pass an individual test.

(f) "Char length" means the distance from the original lower edge of the specimen exposed to the flame in accordance with the procedure specified in § 1616.5 *Test procedure* to the end of the tear or void in the charred, burned, or damaged area, the tear being made in accordance with the procedure specified in § 1615.5 (c)(2) *Specimen burning and evaluation.*

(g) "Afterglow" means the continuation of glowing of parts of a specimen after flaming has ceased.

(h) "Fabric piece" (piece) means a continuous, unseamed length of fabric, one or more of which make up a unit.

(i) "Fabric production unit" (unit) means any quantity of finished fabric up to 4,600 linear m. (5,000 linear yds.) for Normal Sampling or 9,200 linear m. (10,000 linear yds.) for Reduced Sampling which has a specific identity that remains unchanged throughout the unit except for color or print pattern as specified in § 1616.4(a). For purposes of this definition, finished fabric means fabric in its final form after completing its last processing step as a fabric except for slitting.

(j) "Garment production unit" (unit) means any quantity of finished garments up to 500 dozen which have a specific identity that remains unchanged throughout the unit except for size, trim, findings, color, and print patterns as specified in § 1616.4(a).

(k) "Sample" means five test specimens.

(l) "Specimen" means an 8.9±0.5 x 25.4±0.5 cm. (3.5±0.2 x 10±0.2 in.) section of fabric. For garment testing, the specimen will include a seam or trim.

§ 1616.3 General requirements.

(a) *Summary of test method.* Conditioned specimens are suspended one at a time vertically in holders in a prescribed cabinet and subjected to a standard flame along their bottom edges for a specified time under controlled conditions. The char lengths are recorded.

(b) *Test criteria.* The test criteria when the testing is done in accordance with § 1616.4 *Sampling and acceptance procedures* and § 1616.5 *Test procedures* are:

(1) *Average char length.* The average char length of five specimens shall not exceed 17.8 cm. (7.0 in.).

(2) *Full-specimen burn.* No individual specimen shall have a char length of 25.4±0.5 cm. (10±0.2 in.).

(c) Details of the number of specimens which must meet the above test criteria for unit acceptance is specified in § 1616.4.

§ 1616.4 Sampling and acceptance procedures.

(a) *General.* (1) The test criteria of § 1616.3(b) shall be used in conjunction with the following fabric and garment sampling plan. The Consumer Product Safety Commission may consider and approve other sampling plans that provide at least the equivalent level of fire safety to the consumer, provided such alternate sampling plans have operating characteristics such that the probability of unit acceptance at any percentage defective does not exceed the corresponding probability of unit acceptance of the following sampling plan in the region of the latter's operating characteristic curves that lies between 5 and 95 percent acceptance probability. Alternate sampling plans approved for one manufacturer may be used by other manufacturers without prior Consumer Product Safety Commission approval.

(2) Different colors or different print patterns of the same fabric may be included in a single fabric or garment production unit, provided such colors or print patterns demonstrate char lengths that are not significantly different from each other as determined by previous testing of at least three samples from each color or print pattern to be included in the unit.

(3) Garments with different trim and findings may be included in a single garment production unit provided the other garment characteristics are identical except for size, color, and print pattern.

(4) For fabrics whose flammability characteristics are not dependent on chemical additives or chemical reactants to polymer, fiber, yarns, or fabrics, the laundering requirement of § 1616.5(c)(4) is met on subsequent fabric production units if results of testing an initial fabric production unit demonstrate acceptability according to the requirements of

paragraph (b) of this section, *Normal sampling*, both before and after the appropriate laundering.

(5) If the fabric has been shown to meet the laundering requirement, § 1616.5(c)(4), the garments produced from that fabric are not required to be laundered prior to testing.

(6) Each sample, (five specimens), for Fabric Sampling shall be selected so that two specimens are in one fabric direction (machine or cross-machine) and three specimens are in the other fabric direction, except for the additional sample selected after a failure, in which case all five specimens shall be selected in the fabric direction in which the specimen failure occurred.

(7) Fabric samples may be selected from fabric as outlined in paragraph (b) of this section, *Fabric sampling* or, for verification purposes, from randomly selected garments.

(8) Multi-layer fabrics shall be tested with a hem of approximately 2.5 cm. (1 in.) sewn at the bottom edge of the specimen with a suitable thread and stitch. The specimen shall include each of the components over its entire length. Garments manufactured from multi-layer fabrics shall be tested with the edge finish which is used in the garment at the bottom edge of the specimen.

(b) *Fabric sampling.* A fabric production unit (unit) is either accepted or rejected in accordance with the following plan:

(1) *Normal sampling.* Select one sample from the beginning of the first fabric piece (piece) in the unit and one sample from the end of the last piece in the unit, or select a sample from each end of the piece if the unit is made up of only one piece. Test the two selected samples. If both samples meet all the test criteria of § 1616.3(b), accept the unit. If either or both of the samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), reject the unit. If two or more of the individual specimens, from the 10 selected specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), reject the unit. If only one individual specimen, from the 10 selected specimens, fails the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), select five additional specimens from the same end of the piece in which the failure occurred, all five to be taken in the fabric direction in which the specimen failure occurred. If this additional sample passes all the test criteria, accept the unit. If this additional sample fails any part of the test criteria, reject the unit.

(2) *Reduced sampling.* (i) The level of sampling required for fabric acceptance may be reduced provided the preceding 15 units of the fabric have all been accepted using the Normal Sampling Plan.

(ii) The reduced Sampling Plan shall be the same as for Normal Sampling except that the quantity of fabric in the unit may be increased to 9,200 linear m. (10,000 linear yds.)

(iii) Select and test two samples in the same manner as in Normal Sampling. Accept or reject the unit on the same basis as with Normal Sampling.

(iv) Reduced Sampling shall be discontinued and Normal Sampling resumed if a unit is rejected.

(3) *Tightened sampling.* Tightened sampling shall be used when a unit is rejected under the Normal Sampling Plan. The Tightened Sampling shall be the same as Normal Sampling except that one additional sample shall be selected and cut from a middle piece in the unit. If the unit is made up of less than two pieces, the unit shall be divided into at least two pieces. The division shall be such that the pieces produced by the division shall not be smaller than 92 linear m. (100 linear yds.) or greater than 2,300 linear m. (2,500 linear yds.). If the unit is made up of two pieces, the additional sample shall be selected from the interior end of one of the pieces. Test the three selected samples. If all three selected samples meet all the test criteria of § 1616.3(b), accept the unit. If one or more of the three selected samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), reject the unit. If two or more of the individual specimens, from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), reject the unit. If only one individual specimen, from the 15 selected specimens, fails the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), select five additional specimens from the same end of the same piece in which the failure occurred, all five to be taken in the fabric direction in which the specimen failure occurred. If this additional sample passes all the test criteria, accept the unit. If this additional sample fails any part of the test criteria, reject the unit. Tightened Sampling may be discontinued and Normal Sampling

resumed after five consecutive units have all been accepted using Tightened Sampling. If Tightened Sampling remains in effect for 15 consecutive units, production of the specific fabric in Tightened Sampling must be discontinued until that part of the process or component which is causing failure has been identified and the quality of the end product has been improved.

(4) *Disposition of rejected units.* (i) The piece or pieces which have failed and resulted in the initial rejection of the unit may not be retested, used, or promoted for use in children's sleepwear as defined in §§ 1616.2(a) and 1615.1(a) of the (Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X) (FF 3–71) (Subpart A of Part 1615 of this Chapter) except after reworking to improve the flammability characteristics and subsequent retesting and acceptance in accordance with the procedures in *Tightened Sampling.*

(ii) The remainder of a rejected unit, after removing the piece or pieces, the failure of which resulted in unit rejection, may be accepted if the following test plan is successfully concluded at all required locations. The required locations are those adjacent to each such failed piece. (Required locations exist on both sides of the "Middle Piece" tested in Tightened Sampling if failure of that piece resulted in unit rejection). Failure of a piece shall be deemed to have resulted in unit rejection if unit rejection occurred and a sample or specimen from the piece failed any test criterion of § 1616.3(b).

(iii) The unit should contain at least 15 pieces for disposition testing after removing the failing pieces. If necessary for this purpose, the unit shall be demarcated into at least 15 approximately equal length pieces unless such division results in pieces shorter than 92 linear m. (100 linear yds.). In this latter case, the unit shall be demarcated into roughly equal length pieces of approximately 92 linear m. (100 linear yds.) each. If such a division results in five pieces or less in the unit for each failing piece after removing the failing pieces, only the individual pieces retest procedure [described in paragraph (b)(4)(vi) of this section] may be used.

(iv) Select and cut a sample from each end of each adjoining piece beginning adjacent to the piece which failed. Test the two samples from the piece. If both samples meet all the test criteria of § 1616.3(b), the piece is acceptable. If one or both of the two selected samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), the piece is unacceptable. If two or more of the individual specimens, from the 10 selected specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), the piece is unacceptable. If only one individual specimen, from the 10 selected specimens, fails the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), select five additional specimens from the same end of the piece in which the failure occurred, all five to be taken in the fabric direction in which the specimen failure occurred. If this additional sample passes all the test criteria, the piece is acceptable. If this additional sample fails any part of the test criteria, the piece is unacceptable.

(v) Continue testing adjoining pieces until a piece has been found acceptable. Then continue testing adjoining pieces until three successive adjoining pieces, not including the first acceptable piece, have been found acceptable or until five such pieces, not including the first acceptable piece, have been tested, whichever occurs sooner. Unless three successive adjoining pieces have been found acceptable among five such pieces, testing shall be stopped and the entire unit rejected without further testing. If three successive pieces have been found acceptable among five such pieces, accept the three successive acceptable pieces and the remaining pieces in the unit.

(vi) (A) Alternately, individual pieces from a rejected unit containing three or more pieces may be tested and accepted or rejected on a piece by piece basis according to the following plan, after removing the piece or pieces, the failure of which resulted in unit rejection.

(B) Select four samples (two from each end) from the piece. Test the four selected samples. If all four samples meet all the test criteria of § 1616.3(b), accept the piece. If one or more of the samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), reject the piece. If two or more of the individual specimens, from the 20 selected specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), reject the piece. If only one individual specimen, from the 20 selected specimens, fails the 25.4 cm. (10 in.) char length criterion, § 1613.3(b)(2), select two additional samples from the same end of the piece in which the failure occurred. If these

additional two samples meet all the test criteria of § 1616.3(b), accept the piece. If one or both of the two additional samples fail any part of the test criteria, reject the piece.

(vii) The pieces of a unit rejected after retesting may not be retested, used, or promoted for use in children's sleepwear as defined in §§ 1616.2(a) and 1615.1(a) of the Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X (FF 3–71) (Subpart A of Part 1615 of this chapter) except after reworking to improve the flammability characteristics, and subsequent retesting in accordance with the procedures set forth in *Tightened Sampling.*

(5) *Records.* Written and physical records related to all tests performed under this Standard must be maintained by the manufacturer, importer, or other persons initially introducing items into commerce which are subject to this Standard, beginning on the effective date of the Standard. Such records shall include results of all tests, sizes of all units, and the disposition of all rejected pieces and units. Rules and regulations regarding recordkeeping may be established by the Consumer Product Safety Commission.

(c) *Garment sampling.* (1)(i). The Garment Sampling Plan is made up of two parts: (1) Prototype Testing and (2) Production Testing. Prior to production, prototypes must be tested to assure that the design characteristics of the garment are acceptable. Garment production units (units) are then accepted or rejected on an individual unit basis.

(ii) Edge finishes such as hems, except in multi-layer fabrics, and binding are excluded from testing except that when trim is used on an edge the trim must be subjected to prototype testing. Seams attaching findings are excluded from testing.

(2) *Prototype testing.* Pre-production prototype testing of each seam and trim specification to be included in each garment in a garment production unit shall be conducted to assure that garment specifications meet the flammability requirements of the Standard prior to production.

(i) *Seams.* Make three samples (15 specimens) using the longest seam type and three samples using each other seam type 10 inches or longer that is to be included in the garment. For purposes of recordkeeping, prior to testing, assign each specimen to one of the three samples. Test each set of three samples and accept or reject each seam design in accordance with the following plan:

(A) If all three samples meet all the test criteria of § 1616.3(b), accept the seam design. If one or more of the three samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), reject the seam design. If three or more of the individual specimens from the 15 selected specimens fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), reject the seam design. If only one of the individual specimens from the 15 selected specimens fails the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), accept the seam design.

(B) If two of the individual specimens from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), select three more samples (15 specimens) and retest. If all three additional samples meet all the test criteria of § 1616.3(b), accept the seam design. If one or more of the three additional samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), reject the seam design. If two or more of the individual specimens, from the 15 selected additional specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), reject the seam design. If only one of the individual specimens, from the 15 selected additional specimens, fails the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), accept the seam design.

(ii) *Trim*—(A) Make three samples (15 specimens) from each type of trim to be included in the garment. Specimens shall be prepared by sewing or attaching the trim to the center of the vertical axis of an appropriate section of untrimmed fabric, beginning the sewing or attachment at the lower edge of each specimen. The sewing or attachment shall be made in the manner in which the trim is to be attached to the garment.

(B) Sewing or otherwise attaching the trim shall be done with thread or fastening material of the same composition and size to be used for this purpose in the garment and using the same stitching or seam type or other attaching procedure. The trim shall be sewn or fastened the entire length of the specimen. Prior to testing, assign each specimen to one of the three samples. Test the sets of three samples and accept or reject the type of trim and design on the same basis as seam design.

(3) *Production testing.* A unit is either accepted or rejected according to the following plan:

(i) *Normal sampling.* (A) From each unit, select at random sufficient garments and cut three samples (15 specimens) from the longest seam type. No more than five specimens may be cut from a single garment. Prior to testing, assign each specimen to one of the three samples. All specimens cut from a single garment must be included in the same sample. Test the three selected samples. If all three samples meet all the test criteria of § 1818.3(b), accept the unit. If one or more of the three samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1816.3(b)(1), reject the unit. If four or more of the individual specimens, from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), reject the unit. If three or less of the individual specimens, from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length criterion, § 1616.3(b)(2), accept the unit.

(B) If the garment under test does not have a seam at least 10 inches long in the largest size in which it is produced, the following selection and testing procedure shall be followed:

(*1*) Select and cut specimens 8.9 cm. (3.5 in.) wide by the maximum available seam length, with the seam in the center of the specimen and extending the entire specimen length. Cut three samples (15 specimens). These specimens shall be placed in specimen holders so that the bottom edge is even with the bottom edge of the specimen holder and the seam begins in the center of the bottom edge. Prior to testing, assign each specimen to one of the three samples. All specimens cut from a single garment must be included in the same sample.

(2) Test the three samples. If all three samples pass the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), and if three or fewer individual specimens fail by charring the entire specimen length, accept the unit. If the unit is not accepted in the above test, three samples (15 specimens) of the longest seam type shall be made using fabric and thread from production inventory and sewn on production machines by production operators. The individual fabric sections prior to sewing must be no larger than 20.3 x 63.3 cm. (8 x 25 in.) and must be selected from more than one area of the base fabric. Test the three prepared samples. Accept or reject the unit as described previously in this subsection.

(ii) *Reduced sampling.* (A) The level of sampling required for garment acceptance may be reduced provided the previous 15 units of the garments have all been accepted using the Normal Sampling Plan. The Reduced Sampling Plan shall be the same as for Normal Sampling except that the quantity of garments under test may be increased to up to two production units containing garments which have the same specific identity except for size, trim, findings, color, and print patterns as specified in paragraph (a) of this section.

(*B*) Select and test three samples in the same manner as in Normal Sampling. Accept or reject both units on the same basis as with Normal Sampling. Reduced Sampling shall be discontinued and Normal Sampling resumed if a unit is rejected.

(4) *Disposition of rejected units.* Rejected units shall not be retested, used, or promoted for use in children's sleepwear as defined in §§ 1616.2(a) and 1815.1(a) of the Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X (FF 3–71) (Subpart A of Part 1615 of this chapter) except after reworking to improve the flammability characteristics and subsequent retesting in accordance with the procedures set forth in *Garment production testing* [Paragraph (c)(3) of this section].

(5) *Records.* Written and physical records related to all tests performed under this Standard must be maintained by the manufacturer, importer, or other persons initially introducing items into commerce which are subject to this Standard, beginning on the effective date of this Standard. Such records shall include results of all tests, sizes of all units, and the disposition of all rejected pieces and units. Rules and regulations regarding recordkeeping may be established by the Consumer Product Safety Commission.

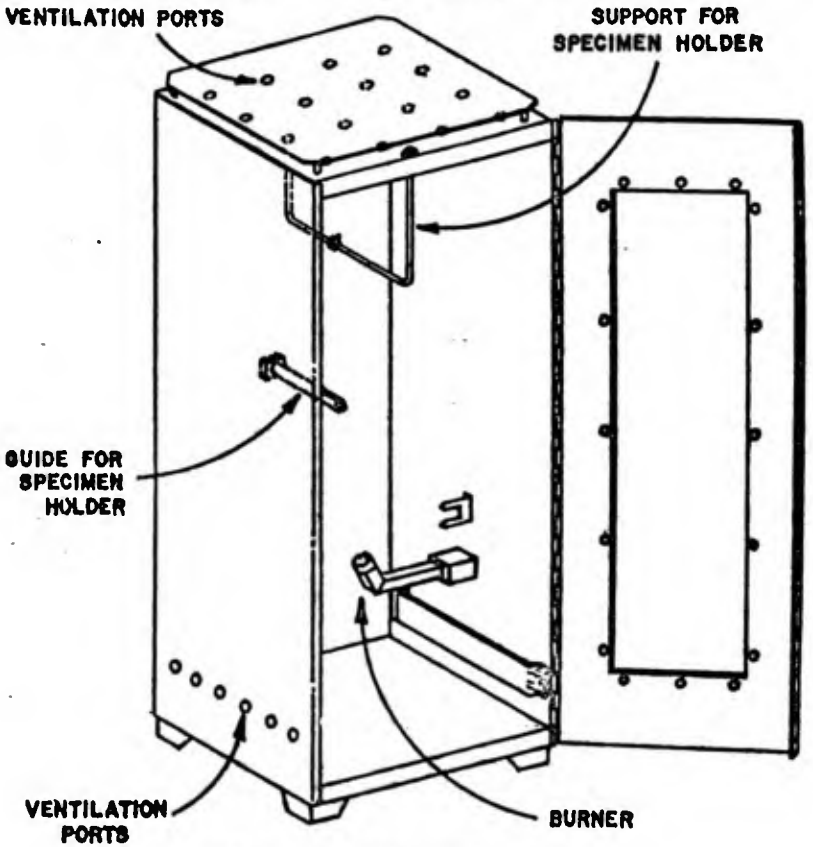
(d) *Compliance market sampling plan.* Sampling plans for use in market testing of items covered by this Standard may be issued by the Consumer Product Safety Commission. Such plans shall define noncompliance of a production unit to exist only when it is shown, with a high level of statistical confidence, those production units represented by tested items which fail such plans will, in fact, fail this Standards. Production units found to be noncomplying under the pro-

visions of paragraph (d) of this section, shall be deemed not to conform to this Standard. The Consumer Product Safety Commission may publish such plans in the FEDERAL REGISTER.

§ 1616.5 Test procedure.

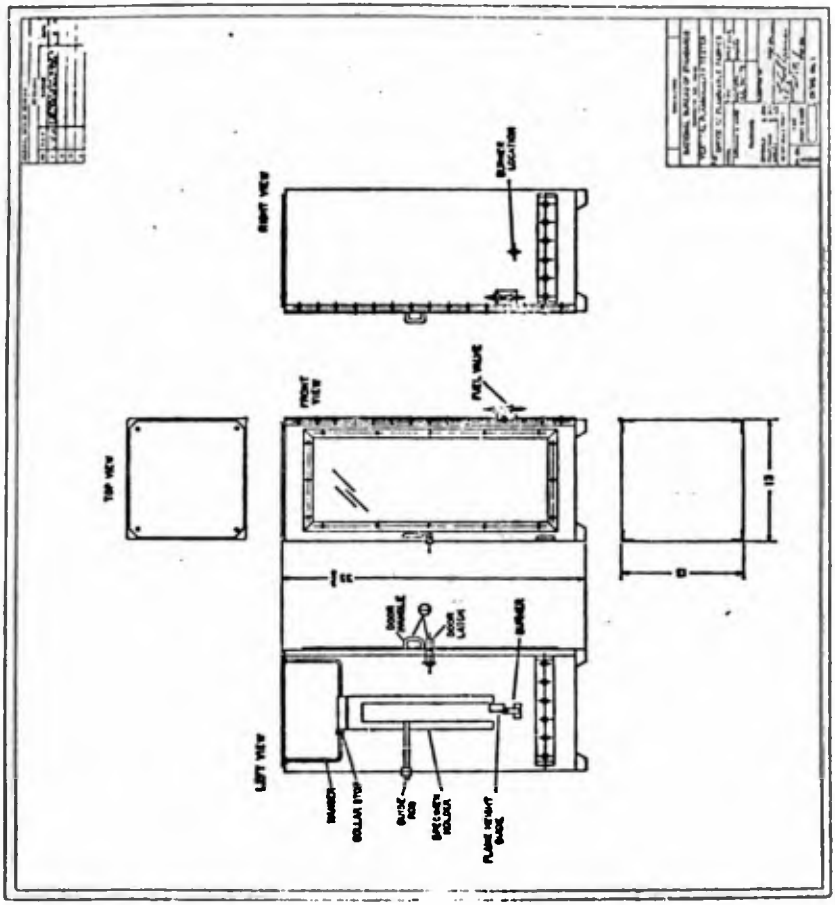
(a) *Apparatus.* The following test apparatus shall be used for the test. Alternate test apparatus may be used only with prior approval of the Consumer Product Safety Commission.

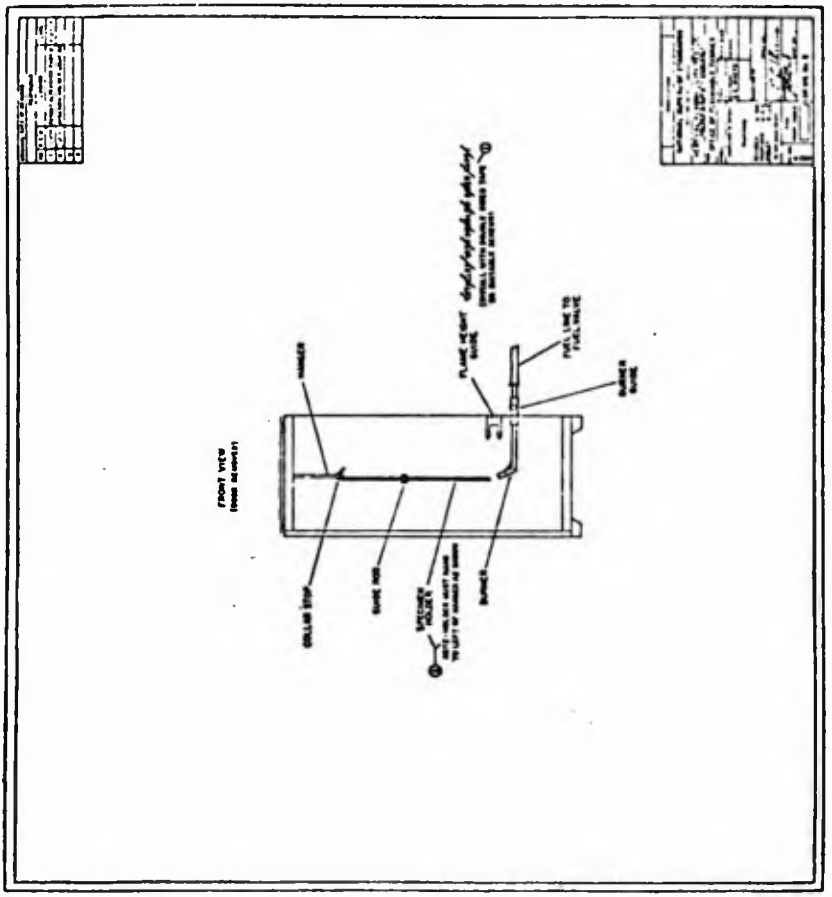
(1) *Test chamber.* The test chamber shall be a steel cabinet with inside dimensions of 32.9 cm. (12 9/10 in.) wide, 32.9 cm. (12 15/16 in.) deep and 76.2 cm. (30 in.) high. It shall have a frame which permits the suspension of the specimen holder over the center of the base of the cabinet at such a height that the bottom of the specimen is 1.7 cm. (¾ in.) above the highest point of the barrel of the gas burner specified in paragraph (a)(3) of this section, *Burner* and perpendicular to the front of the cabinet. The front of the cabinet shall be a close-fitting door with a transparent insert to permit observation of the entire test. The cabinet floor may be covered with a piece of asbestos paper, whose length and width are approximately 2.5 cm. (1 in.) less than the cabinet floor dimensions. The cabinet to be used in this test method is illustrated in Figure 1 and detailed in Engineering Drawings, Numbers 1 through 7.

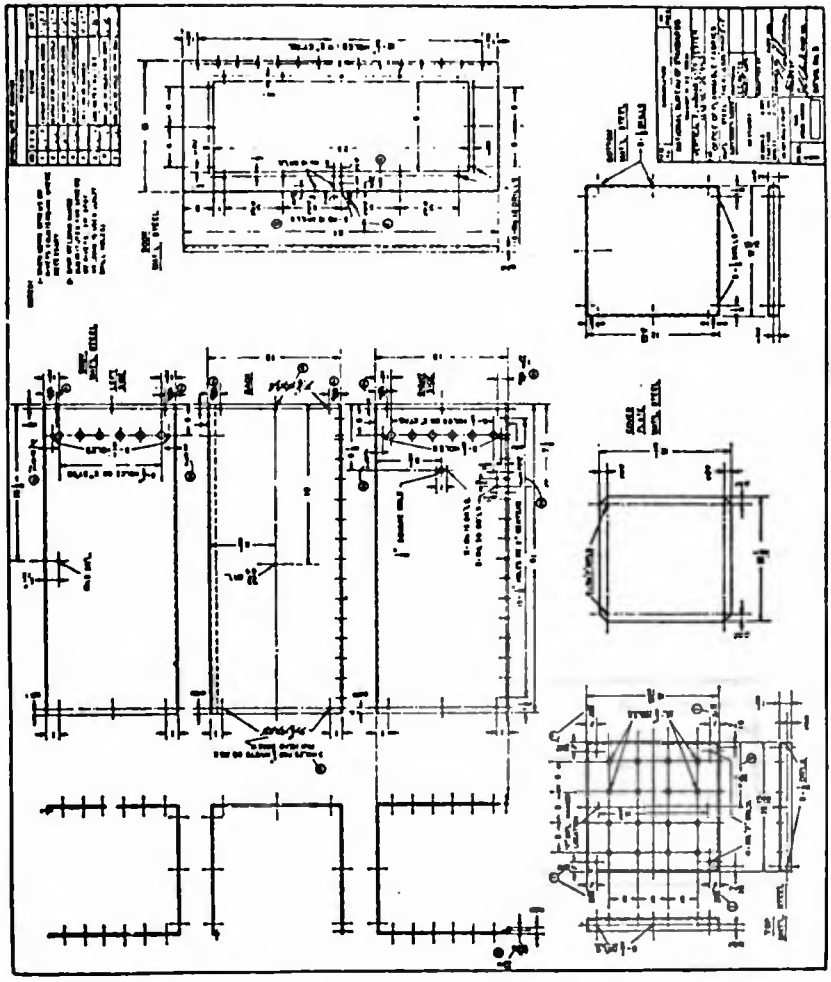


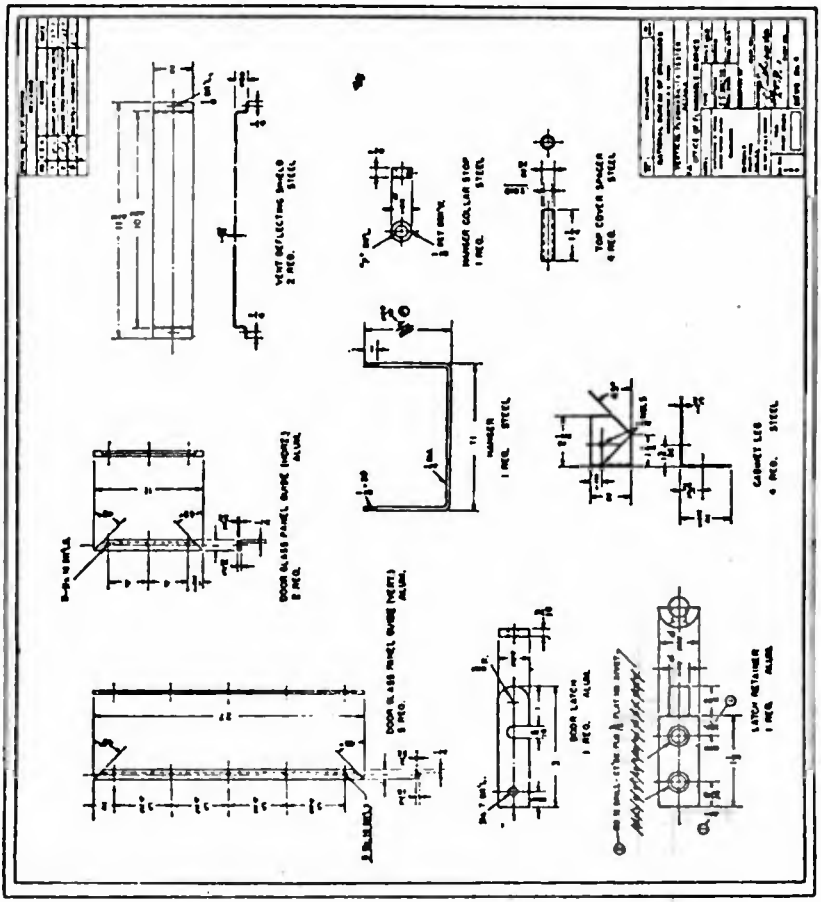
VERTICAL TEST CABINET

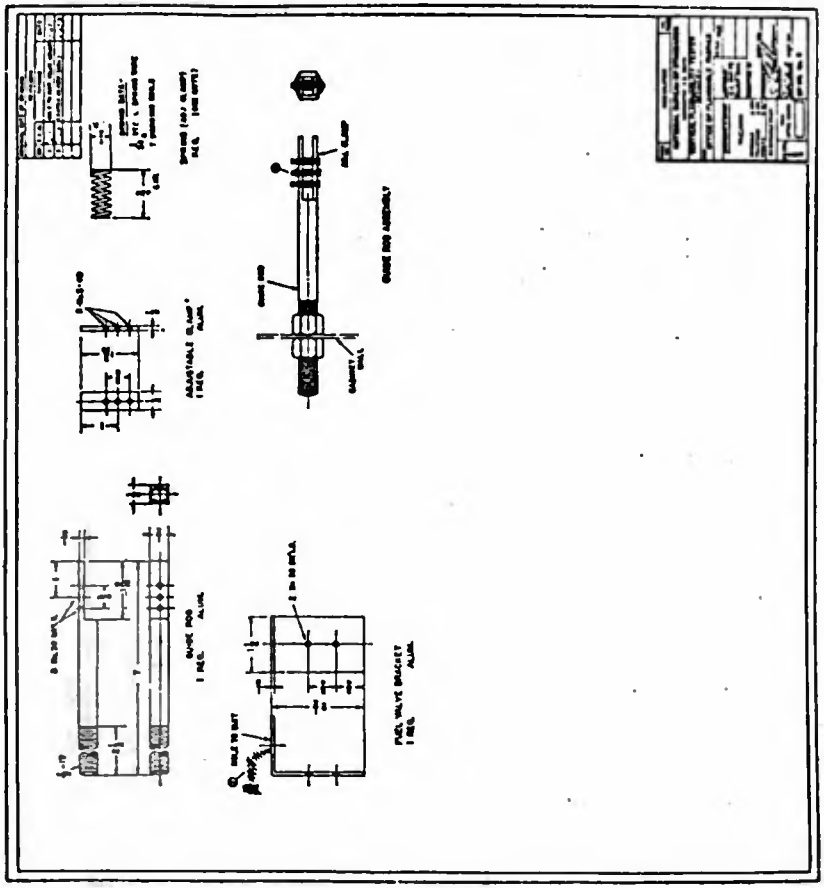
FIGURE 1

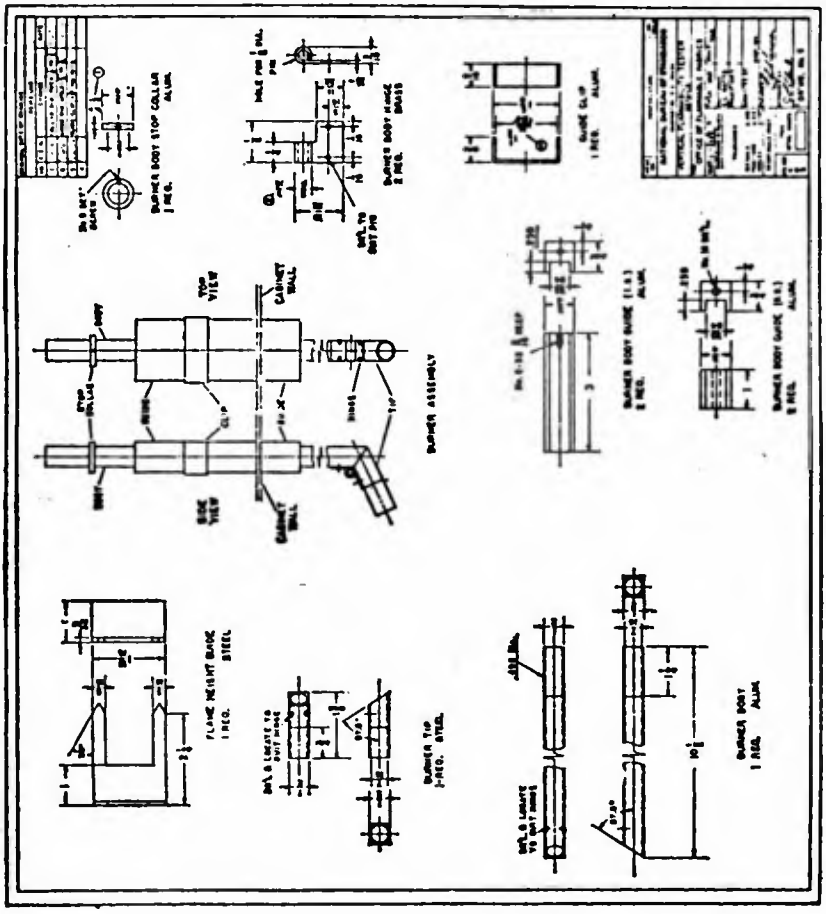

RIGHT VIEW
BURNER LOCATION
FRONT VIEW
FUEL VALVE
TOP VIEW
DOOR HANDLE
DOOR LATCH
BURNER
LEFT VIEW
BURNER
ORIFICE ROD
BAFFLE HOLDER
FLAME HEIGHT GAGE

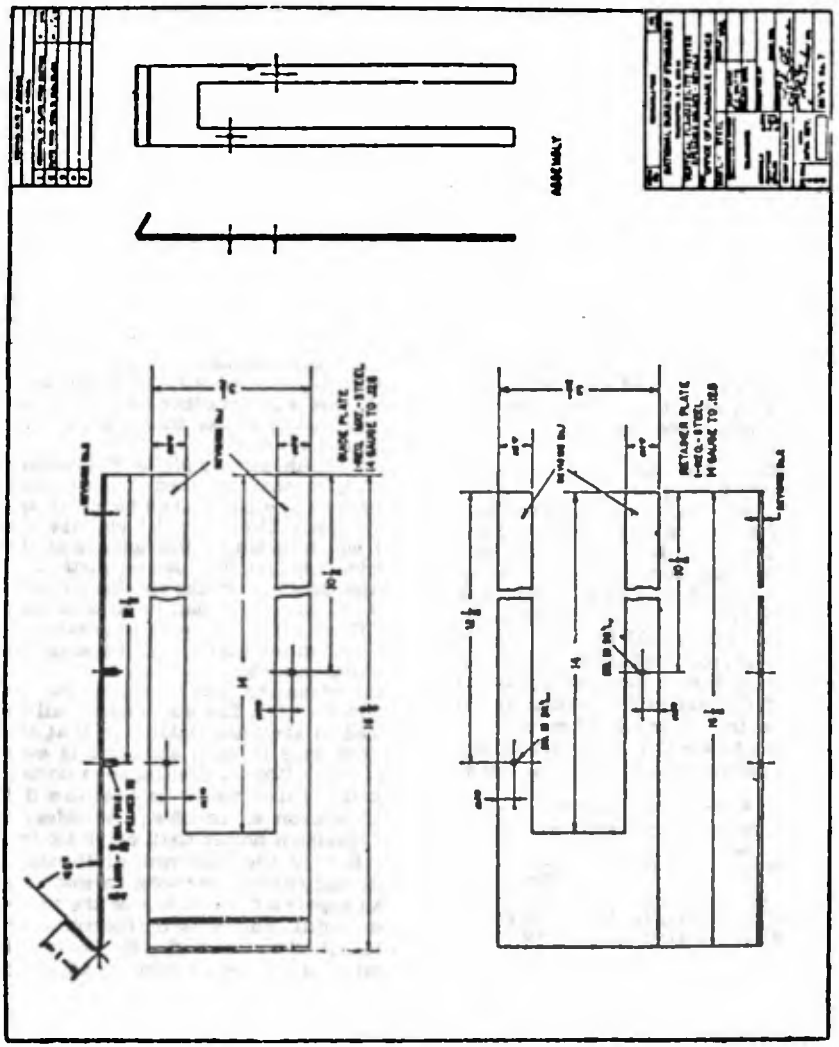












(2) *Specimen holder.* The specimen holder to be used in this test method is detailed in Engineering Drawing Number 7. It is designed to permit suspension of the specimen in a fixed vertical position and to prevent curling of the specimen when the flame is applied. The specimen shall be fixed between the plates, which shall be held together with side clamps.

(3) *Burner.* The burner shall be the same as that illustrated in Figure 1 and detailed in Engineering Drawing Number 6. It shall have a tube of 1.1 cm. (0.43 in.) inside diameter. The input line to the burner shall be equipped with

a needle valve. It shall have a variable orifice to adjust the height of the flame. The barrel of the burner shall be at an angle of 25 degrees from the vertical. The burner may be equipped with an adjustable stop collar so that it may be positioned quickly under the test specimen. The burner shall be connected to the gas source by rubber or other flexible tubing.

(4) *Gas supply system.* There shall be a pressure regulator to furnish gas to the burner under a pressure of 103–259 mm. Hg. (2–5 lbs. per sq. in.) at the burner inlet. (*Caution.* Precautionary laboratory practices must be followed to prevent the leakage of methane. Methane is a flammable gas which can be explosive when mixed with air and exposed to a source of ignition, and can cause asphyxiation because of the lack of air.)

(5) *Gas.* The gas shall be at least 97 percent pure methane.

(6) *Hooks and weights.* Metal hooks and weights shall be used to produce a series of loads for char length determinations. Suitable metal hooks consist of No. 19 gauge steel wire, or equivalent, made from 7.6 cm. (3 in.) lengths of the wire, bent 1.3 cm. (0.5 in.) from one end to a 45-degree angle hook. The longer end of the wire is fastened around the neck of the weight to be used and the other in the lower end of each burned specimen to one side of the burned area. The requisite loads are given in Table 1.

TABLE 1.—*Original fabric weight* [1]

Grams per square meter	Ounces per square yard	Loads	
		Grams	Pounds
Less than 101	Less than 3	54.4	0.12
101 to 207	3 to 6	113.4	.25
207 to 338	6 to 10	226.8	.50
Greater than 338	Greater than 10	340.2	.75

[1] Weight of the original fabric, containing no seams or trim, is calculated from the weight of a specimen which has been conditioned for at least 8 hr at 21±1.1° C (70±2° F) and 65±2 pct relative humidity. Shorter conditioning times may be used if the change in weight of a specimen in successive weighings made at intervals of not less than 2 hr does not exceed 0.2 pct of the weight of the specimen.

(7) *Stopwatch.* A stopwatch or similar timing device shall be used to measure time to 0.1 second.

(8) *Scale.* A linear scale graduated in mm. or 0.1-inch divisions shall be used to measure char length.

(9) *Circulating air oven.* A forced circulation drying oven capable of maintaining the specimens at 105±2.8° C. (221±5° F.), shall be used to dry the specimen while mounted in the specimen holders.[2]

(10) *Desiccator.* An air-tight and moisture-tight desiccating chamber shall be used for cooling mounted specimens after drying. Anhydrous silica gel with an indicator shall be used as the desiccant in the desiccating chamber. Replace or reactivate the desiccant when it becomes inactive.

(11) *Hood.* A hood or other suitable enclosure shall be used to provide a draft-protected environment surrounding the test chamber without restricting the availability of air. This enclosure shall have a fan or other suitable means for exhausting smoke and/or toxic gases produced by testing.

(12) *Extinguishing plates.* Extinguishing plates shall be used to extinguish afterglow. The plates shall be metal, approximately 35.6 cm. x 5.1 cm. (14 x 2 in.) which fit within the opening of the specimen holder. The bottom plate shall be the thickness of the specimen holder and the top plate shall be at least 0.32 cm. (⅛ in.) thick. A suitable metal specimen mounting block may be used for the bottom plate.

(b) *Mounting and conditioning of specimens*—(1) The specimens shall be placed in specimen holders so that the bottom edge of each specimen is even with the bottom of the specimen holder. Mount the specimen in as close to a flat configuration as possible. The sides of the specimen holder shall cover 1.9 cm. (¾ in.) of the specimen width along each long edge of the specimen, and thus shall expose 5.1 cm. (2 in.) of the specimen width. The sides of the specimen holder shall be clamped with a sufficient number of clamps or shall be taped to prevent the specimen from being displaced during handling and testing. The specimens may be taped in the holders if the clamps fail to hold them. Place the mounted specimens in the drying oven in a manner that will permit free circula-

[2] Procedure 1(1.1.1) of ASTM D 2654–71 "Standard Methods of Test for moisture content and moisture regain of textile material," describes a satisfactory oven (1972 Book of ASTM Standards, Part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103).

tion of air at 105° C. (221° F.) around them for 30 minutes.[4]

(2) Remove the mounted specimens from the oven and place them in the desiccator for 30 minutes to cool. No more than five specimens shall be placed in a desiccator at one time. Specimens shall remain in the desiccator no more than 60 minutes.

(c) *Testing*—(1) *Burner adjustment.* With the hood fan turned off, use the needle valve to adjust the flame height of the burner to 3.8 cm. (1½ in.) above the highest point of the barrel of the burner. A suitable height indicator is shown in Engineering Drawing Number 6 and Figure 1.

(2) *Specimen burning and evaluation.* (i) One at a time, the mounted specimens shall be removed from the desiccator and suspended in the cabinet for testing. The cabinet door shall be closed and the burner flame impinged on the bottom edge of the specimen for 3.0 ±0.2 seconds.[5] Flame impingement is accomplished by moving the burner under the specimen for this length of time, and then removing it.

(ii) When flaming has ceased, remove the specimen from the cabinet, except for specimens which exhibit afterglow. If afterglow is evident, the specimen shall be removed from the cabinet 1 minute after the burner flame is impinged on the specimen if no flaming exists at that time. Upon removal from the cabinet, the afterglow shall be promptly extinguished. The afterglow shall be extinguished by placing the specimen while still in the specimen holder on the bottom extinguishing plate and immediately covering it with the top plate until all evidence of afterglow has ceased. After removing the specimen from the cabinet and, if appropriate, extinguishing afterglow, remove it from the holder and place it on a flat clean surface. Fold the specimen lengthwise along a line through the highest peak of the charred or melted area; crease the specimen firmly by hand. Unfold the specimen and insert the hook with the correct weight as shown in Table 1 in the specimen on one side of the charred area 6.4 mm. (¼ in.) from the lower edge. Tear the specimen by grasping the other lower corner of the fabric and gently raising the specimen and weight clear of the supporting surface.[6] Measure the char length as the distance from the end of the tear to the original lower edge of the specimen exposed to the flame. After testing each specimen, vent the hood and cabinet to remove the smoke and/or toxic gases.

(3) *Report.* Report the value of char length, in centimeters (or inches), for each specimen, as well as the average char length for each set of five specimens.

(4) *Laundering.* (i) The procedures described under § 1616.4 *Sampling and acceptance procedures.* § 1616.5(b) *Conditioning and mounting of specimens,* and (c) *Testing,* shall be carried out on finished items (as produced or after one washing and drying) and after they have been washed and dried 50 times according to the laundering procedure in AATCC Test Method 124–1969.[7] Items which do not withstand 50 launderings may be tested at the end of their useful service life with prior approval of the Consumer Product Safety Commission.

(ii) Washing procedure 6.2(III) of AATCC Test Method 124–1969, with a water temperature of 60±2.8° C. (140± 5° F.) and drying procedure 6.3.2(B) of that Test method, shall be used. Maximum load shall be 3.64 kg. (8 lbs.) and may consist of any combination of test samples and dummy pieces. Alternately, a different number of times under another washing and drying procedure may be specified and used. If that procedure has previously been found to be equivalent by the Consumer Product Safety Commission. Such laundering is not required of items which are not in-

[4] If the specimens are moist when received, permit them to air dry in laboratory conditions prior to placement in the oven. A satisfactory preconditioning procedure may be found in ASTM D 1776–67, "Conditioning Textiles and Textile Products for Testing". (1972 Book of ASTM Standards, Part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia Pennsylvania 19103.)

[5] If more than 30 seconds elapse between removal of a specimen from the desiccator and the initial flame impingement, that specimen shall be reconditioned prior to testing.

[6] A figure showing how this is done is given in AATCC Test method 34–1969, "Fire Resistance of Textile Fabrics," Technical Manual of the American Association of Textile Chemists and Colorists, Vol. 46, 1970, published by AATCC, P.O. Box 12215, Research Triangle Park, North Carolina 27709.

[7] Technical Manual of the American Association of Textile Chemists and Colorists, Vol 46, 1970, published by AATCC, P.O. Box 12215, Research Triangle Park, North Carolina 27709.

tended to be laundered, as determined by the Consumer Product Safety Commission.

(iii) Items which are not suseeptible to being laundered and are labeled "dry-clean only" shall be dry-cleaned by a procedure which has previously been found to be acceptable by the Consumer Product Safety Commission.

(iv) For the purpose of the issuance of a guarantee under Section 8 of the Act, finished sleepwear garments to be tested according to § 1616.4(c) *Garment sampling*, need not be laundered or dry-cleaned provided all fabrics used in making the garments (except trim) have been guaranteed by the fabric producer to be acceptable when tested according to § 1616.4(b) *Fabric sampling*.

[40 FR 59917, Dec. 30, 1975; 41 FR 1061, Jan. 6, 1976]

§ 1616.6 Labeling requirements.

(a) All items of children's sleepwear shall be labeled with precautionary instructions to protect the items from agents or treatments which are known to cause significant deterioration of their flame resistance. If the item has been initially tested under § 1616.5(c)(4) *Laundering*, after one washing and drying, it shall be labeled with instructions to wash before wearing. Such labels shall be permanent and otherwise in accordance with rules and regulations established by the Consumer Product Safety Commission.

(b) All items of children's sleepwear in sizes 7 through 14 complying with this Standard (including those items that comply with FF 3-71) and manufactured on or after May 1, 1975 through May 1, 1978, shall bear a label which states: "Flame-resistant, U.S. Standard FF 5-74." The label must be prominent, conspicuous, legible and readily visible at the point of sale to ultimate consumers. The label statement may be attached to the item itself, on a hang tag attached to the item, or on a package enclosing the item. The label need not be affixed permanently.

Subpart B—Rules and Regulations

AUTHORITY: Sec. 5, 67 Stat. 112-13, as amended 81 Stat. 571; 15 U.S.C. 1194.

§ 1616.31 Labeling, recordkeeping, retail display and guaranties.

(a) *Definitions*. For the purpose of this section, the following definitions apply:

(1) "Standard" means the Standard for the Flammability of Children's Sleepwear: Sizes 7 through 14 (FF 5-74) (Subpart A of Part 1616 of this Chapter) promulgated by the Consumer Product Safety Commission in the FEDERAL REGISTER of May 1, 1974 (39 FR 15214), and amended in the FEDERAL REGISTER of March 21, 1975 (40 FR 12811) (correction notice published for technical reasons on March 27, 1975, 40 FR 13547).

(2) "Children's sleepwear" means "children's sleepwear" as defined in § 1616.2(a) of the Standard, that is, "any product of wearing apparel size 7 through 14, such as nightgowns, pajamas, or similar or related items, such as robes, intended to be worn primarily for sleeping or activities related to sleeping. Diapers and underwear are excluded from this definition."

(3) "Item" means "item" as defined in § 1616.2(c) of the Standard, that is, "any product of children's sleepwear or any fabric or related material intended or promoted for use in children's sleepwear."

(4) "Market or handle" means any one or more of the transactions set forth in section 3 of the Flammable Fabrics Act (15 U.S.C. 1192).

(5) The definition of terms set forth in § 1616.2 of the Standard shall also apply to this section.

(b) *Labeling*. (1) Where any agent or treatment is known to cause deterioration of flame resistance or otherwise causes an item to be less flame resistant, such item shall be prominently, permanently, conspicuously, and legibly labeled with precautionary care and treatment instructions to protect the item from such agent or treatment.

(2) If the item has been initially tested under § 1616.5(c)(4) of the Standard after one washing and drying, it shall be prominently, permanently, conspicuously and legibly labeled with instructions to wash before wearing.

(3) Where any fabric or related material intended or promoted for use in children's sleepwear subject to the Standard is sold or intended for sale to the ultimate consumer for the purpose of conversion into children's sleepwear, each bolt, roll, or other unit shall be labeled with the information required by this section. Each item or fabric or related material sold to an ultimate consumer must be accompanied by a label, as prescribed by this section, which can by normal household methods be per-

manently affixed by the ultimate consumer to any item of children's sleepwear made from such fabric or related material.

(4) (i) Where items required to be labeled or stamped in accordance with paragraphs (b)(1), (b)(2), and/or (b)(3) of this section and fabrics required to be labeled or stamped in accordance with paragraph (b)(7) of this section are marketed at retail in packages, and the required label or stamp is not readily visible to the prospective purchaser, the packages must also be prominently, conspicuously, and legibly labeled with the required information.

(ii) Where garments required to be labeled or stamped in accordance with paragraph (b)(7) of this section are marketed at retail in packages, and the required label or stamp is not readily visible to the prospective purchaser:

(A) The packages must also be prominently, conspicuously, and legibly labeled with the information required by paragraph (b)(7) of this section; or

(B) There must be a garment style identification that is prominent, conspicuous, and legible and readily visible to the prospective purchaser, either on a label or hang tag attached to the garment design or on the garment packages. A style is a garment design or grouping, preselected by the manufacturer. A style may be composed of garments that form all or part of one or more GPU's and the style may include any number of garments the manufacturer chooses. Style identification means any numbers, letters, or combination thereof that are sufficient to identify the garments of the style and may include information such as color, season or size. If this option B is selected, in any recall of noncomplying items from a particular GPU,

(*1*) The garment manufacturer must recall the entire style(s) from all customers who purchased garments of the style(s) of which the GPU is part. However, retailers may elect to return only garments from the particular GPU necessitating the recall rather than the entire style(s) or portions of style(s) being recalled; and

(2) Within 48 hours of a written request, the garment manufacturer must supply to the Commission any samples in its possession of garments from the GPU, as requested. As required of all persons subject to this section, the garment manufacturer must also, within the time requested, supply to the Commission the names of any customers who purchased during a specified period of time, garments from the GPU (or the style(s) of which the GPU is a part) and supply access to all records required under the Standard and this section.

(5) Samples, swatches, or specimens used to promote or effect the sale of items subject to the Standard shall be labeled in accordance with this section with the information required by this section: Except that such information may appear on accompanying promotional materials attached to fabric samples, swatches or specimens used to promote the sale of fabrics to garment manufacturers. This requirement shall not apply, however, to samples, swatches, or specimens prominently, permanently, conspicuously, truthfully and legibly labeled: "Flammable, Sample only. Not for use or resale. Does not meet Standard for the Flammability of Children's Sleepwear; Sizes 7 through 14 (FF 5–74)."

(6) The information required on labels by this section shall be set forth separately from any other information appearing on the same label. Other information, representations, or disclosures not required by this section but placed on the same label with information required by this section, or placed on other labels elsewhere on the item, shall not interfere with the information required by this section. No person, other than the ultimate consumer, shall remove, mutilate, or cause or participate in the removal or mutilation of any label required by this section to be affixed to any item.

(7) Every manufacturer, importer, or other person (such as a converter) initially introducing items subject to the Standard into commerce shall assign to each item a unit identification (number, letter or date, or combination thereof) sufficient to identify and relate to the fabric production unit or garment production unit of which the item is a part. Such unit identification shall be designated in such a way as to indicate that it is a production unit under the Standard. The letters "GPU" and "FPU" may be used to designate a garment production unit identification and fabric production unit identification, respectively, at the option of the labeler. In addition to the requirements prescribed by this paragraph (b)(7), the requirements prescribed by paragraph (b)(4) of this section must be met for items marketed at retail in packages.

(i) Each garment subject to the Standard shall bear a label with minimum dimension of 1.3 centimeters (0.5 inch) by 1.9 centimeters (0.75 inch) containing the appropriate garment production unit identification for that garment in letters which are clear, conspicuous, and legible, and in a color which contrasts with the background of the label, or shall have such information stamped on the garment itself in letters which are clear, conspicuous, and legible, and in a color which contrasts with the background, and at least 2.54 centimeters (1 inch) in every direction from any other information. The stamp or label containing the garment production unit identification must be of such construction, and affixed to the garment in such a manner, as to remain on or attached to the garment, and legible and visible throughout its intended period of use.

(ii) The fabric production unit identification shall appear in letters at least 0.4 centimeter (one-sixth of an inch) in height against a contrasting background on each label that relates to such fabric and is required by the Textile Fiber Products Identification Act (15 U.S.C. 70–70k) and the regulations thereunder (16 CFR 303.1 through 303.45) or by the Wool Product Labeling Act of 1939 (15 U.S.C. 68–68j) and the regulations thereunder (16 CFR 300.1 through 300.-35). When the information required by the Textile Fiber Products Identification Act or by the Wool Products Labeling Act of 1939 appears on an invoice used in lieu of labeling, the fabric production unit identification required by this section may be placed clearly, conspicuously, and legibly on the same invoice in lieu of labeling.

(8) All items complying with the Standard and manufactured on or after May 1, 1975, through May 1, 1978, shall bear a label which states "Flame-resistant. U.S. Standard FF 5–74." The label must be prominent, conspicuous, and legible and readily visible at the point of sale to ultimate consumers. The label statement may be attached to the item itself, on a hang tag attached to the item, or on a package enclosing the item. The label need not be affixed permanently. The letters of the label must be at least 0.4 centimeter (one-sixth of an inch) in height and in a color which contrasts with the background of the label.

(c) *Segregation of complying and noncomplying items by retailer.* Every person who sells non-complying items (as defined in § 1616.2(c) of the Standard and paragraph (a)(3) of this section) at retail stores or other establishments open to the general public where goods are offered for sale shall:

(1) Display the items which comply with the Standard, and for which the seller has documentary evidence of such compliance, so that no other merchandise is intermingled with those items; and identify such complying items with at least one sign, with black letters at least 2.5 centimeters (one inch) in height against a solid white background, bearing the statement "Flame resistant. Complies with the Standard for the Flammability of Children's Sleepwear (FF 5–74)."

(2) Display all other items of children's sleepwear, sizes 7 through 14, at a separate location within the store and identify these items with at least one sign, with black letters at least 2.5 centimeters (1 inch) in height against a solid white background, bearing the statement "Flammable. Does Not Meet Standard for the Flammability of Children's Sleepwear (FF 5–74)."

(3) Segregate those items of children's sleepwear, sizes 7 through 14, which comply with the Standard, and for which the seller has documentary evidence of such compliance, so that they shall not be located within 91 centimeters (36 inches) of any other items of children's sleepwear, sizes 7 through 14, when displayed for sale to consumers.

(d) *Records—manufacturers, importers, or other persons initially introducing items into commerce*—(1) *General.* Every manufacturer, importer, or other person (such as a converter) initially introducing into commerce items subject to the Standard, irrespective of whether guaranties are issued under paragraph (e) of this section, shall maintain written and physical records as hereinafter specified. The records required must establish a line of continuity through the process of manufacture of each production unit of articles of children's sleepwear, or fabrics or related materials intended or promoted for use in children's sleepwear, to the sale and delivery of the finished items and from the specific finished item to the manufacturing records. Such records shall show with respect to such items:

(i) Details, description and identification of any and all sampling plans engaged in pursuant to the requirements of the Standard. Such records must be

sufficient to demonstrate compliance with such sampling plan(s) and must relate the sampling plan(s) to the actual items produced, marketed, or handled. This requirement is not limited by other provisions of this paragraph (d).

(ii) Garment production units or fabric production units of all garments or fabrics marketed or handled. The records must relate to an appropriate production unit identification on or affixed to the item itself in accordance with paragraph (b)(7) of this section, and the production unit identification must relate to the garment production unit or fabric production unit.

(iii) Test results and details of all tests performed, both prototype and production, including char lengths of each specimen tested, average char lengths of the samples required to be tested, details of the sampling procedure employed, name and signature of person conducting tests, date of tests, and all other records necessary to demonstrate compliance with the test procedures and sampling plan specified by the Standard or authorized alternate sampling plan.

(iv) Disposition of all failing or rejected items. Such records must demonstrate that the items were retested or reworked and retested in accordance with the Standard prior to sale or distribution and that such retested or reworked and retested items comply with the Standard, or otherwise show the disposition of such items.

(v) Fiber content and manufacturing specifications relating the same to prototype and production testing and to the production units to which applicable.

(vi) Data and test results relied on as a basis for inclusion of different colors or different print patterns of the same fabric as a single fabric or garment production unit under § 1616.4(a)(2) of the Standard.

(vii) Data and test results relied on as a basis for reduced laundering of fabric or garments during test procedures under § 1616.5(c)(4) of the Standard and any quantities issued or received relating to laundering as well as details of the laundering procedure utilized.

(viii) Identification, composition, and details of application of any flame retardant treatments employed. All prototype and production records shall relate to such information.

(ix) Date and quantity of each sale or delivery of items subject to the Standard (except the date of sale to an ultimate consumer) and the name and address of the purchaser or recipient (except an ultimate consumer). The items involved in each sale or delivery shall be identified by production unit or by style. A style is a garment design or grouping, preselected by the manufacturer. A style may be composed of garments that form all or part of one or more garment production units and the style may include any number of garments the manufacturer chooses. If a person subject to the requirements of paragraph (d) of this section maintains sales records which identify the items sold or delivered by style, and if recall of one or more production units subject to the Standard is required, that person in recalling such production units shall notify all purchasers of items of the style in which such production unit or units were manufactured. Retailers may elect to return all items of the style involved, or all items of the production units subject to recall.

(2) *Fabrics.* In addition to the information specified in paragraph (d)(1) of this section, the written and physical records maintained with respect to each fabric production unit shall include (i) finished fabric samples sufficent to repeat the fabric sampling procedure required by § 1616.4 of the Standard for each production unit marketed or handled; and (ii) records to relate the samples to the actual fabric production unit. Upon written request of any duly authorized employee or agent of the Commission, samples sufficient for the sampling and testing of any production unit in accordance with the Standard shall be furnished from these records within the time specified in the written request.

(3) *Garments—prototype testing.* In addition to the records specified in paragraph (d)(1) of this section, the following written and physical records shall be maintained with respect to the garment prototype testing required by the Standard:

(i) Specification, fiber content, and details of construction on all seams, fabrics, threads, stitches, and trims used in each garment style or type upon which prototype testing was performed, relating the same to such garment style or type and to all production units to which such prototype testing is applicable.

(ii) Samples sufficient to repeat the prototype tests required by § 1616.4 of the Standard for all fabrics, seams, threads, stitches, and trims used in such proto-

type testing, relating such samples to the records required by this paragraph (d), including the information required by paragraph (d)(3)(i) of this section. Upon written request of any duly authorized employee or agent of the Commission, samples sufficient for the testing of any prototype specimens identical to those specimens that were actually tested pursuant to the Standard shall be furnished from these records within the time specified in that written request.

(iii) A complete untested garment from each style or type of garment marketed or handled.

(iv) Remains of all physical specimens tested in accordance with the prototype testing required by § 1616.4 of the Standard, relating such samples to the records required by this paragraph (d), including information required by paragraph (d)(3)(i) of this section.

(4) *Garments—production testing.* In addition to the records required by paragraph (d)(1) of this section, written and physical records shall be maintained and shall show with respect to each garment production unit:

(i) Source and fabric production unit identification of all fabrics subject to testing used in each garment production unit.

(ii) Identification and appropriate reference to all prototype records and prototype tests applicable to each production unit.

(iii) Any guaranty relied upon to demonstrate that the fabric utilized in such garments meets the laundering requirements of the Standard.

(iv) Data sufficient to show that tested samples were selected from the production unit at random from regular production.

(v) Written data that will enable the Commission to obtain and test garments under any applicable compliance market sampling plan.

(5) *Record retention requirements.* The records required by this paragraph (d) shall be maintained for 3 years, except that records relating to prototype testing shall be maintained for as long as they are relied upon as demonstrating compliance with the prototype testing requirements of the Standard and shall be retained for 3 years thereafter.

(e) *Tests for guaranty purposes.* Reasonable and representative tests for the purpose of issuing a guaranty under section 8 of the Flammable Fabrics Act (15 U.S.C. 1197) for items subject to the Standard shall be those tests performed pursuant to any sampling plan or authorized alternative sampling plan engaged in pursuant to the requirements of the Standard.

(f) *Compliance with this section.* No person subject to the Flammable Fabrics Act shall manufacture, import, distribute, or otherwise market or handle any item subject to the Standard, including samples, swatches, or specimens used to promote or effect the sale thereof, which is not in compliance with this section.

Subpart C—Interpretations and Policies

AUTHORITY: Secs. 1–17, 67 Stat. 111–15, as amended, 81 Stat. 568–74; 15 U.S.C. 1191–1204.

§ 1616.61 Enforcement policy.

(a) It is the policy of the Consumer Product Safety Commission that all items of children's sleepwear in sizes 7 through 14 (including garments and fabric or related material intended or promoted for use in such children's sleepwear) are subject to the Standard FF 5–74 (Subpart A of this Part) unless the manufacturing process has ended before May 1, 1975. The manufacturing process is deemed to end, for the purposes of the Standard, at the time the item is completely assembled, all functional materials have been affixed, and labeling of a permanent nature has been stamped, sewn, or otherwise permanently affixed to the item. Affixing of temporary price or promotional information or the packaging of items of sleepwear (including garments and fabrics or related material intended or promoted for use in such sleepwear) does not affect the date on which the manufacturing process is deemed to end.

(b) All items of children's sleepwear in sizes 7 through 14 (including garments and fabric or related material intended or promoted for use in such children's sleepwear) which are in inventory or with the trade on the effective date of Standard FF 5–74 are exempt from the requirements of the Standard. For domestically-made items of children's sleepwear in sizes 7 through 14 to be considered "in inventory or with the trade" on the effective date of the Standard, the manufacturing process must have ended prior to May 1, 1975. For foreign-made items of children's sleepwear in sizes 7 through 14 to be considered "in inventory or with the trade" on the effective date of the Standard, the manufacturing process

must have ended and the goods must have been entered into the United States before May 1, 1975.

§ 1616.62 Policy regarding retail display requirements for items.

For purposes of the retail display and identification requirements of § 1616.31 (c), and for those purposes only, any item which was manufactured before May 1, 1975, and for which a retailer has documentary evidence of compliance with all sampling and testing requirements of the Standard (FF 5–74) (Subpart A of this Part), will be deemed to be a complying item notwithstanding the absence of an affirmative label to indicate compliance with the Standard as required by § 1616.6(b) of the Standard and § 1616.31(b)(8), or the absence of a garment production unit identification or style identification which meets all requirements of §§ 1616.31(b) (4) and (7), provided that such an item complies with all other labeling requirements of § 1616.31(b).

§ 1616.63 Policy regarding garment production unit identification.

No provision of 16 CFR 1616.31(b)(7) prohibits placement of a garment production unit identification on a label containing other information. Provided, however, that when the garment production unit identification appears on a label containing other information, provisions of § 1616.31(b)(6) require that the garment production unit identification must be set forth separately from any other information appearing on the same label, and that information not required by the applicable enforcement regulation (§ 1616.31), but placed on the same label with the garment production unit identification, shall not interfere with the garment production unit identification.

§ 1616.64 Policy regarding recordkeeping requirements.

No provision of the Standard for the Flammability of Children's Sleepwear: Sizes 7 through 14 (FF 5–74) (Subpart A of this Part) or of the enforcement regulations at § 1616.31 prohibits the utilization of fabric which was manufactured before May 1, 1975, and which was not manufactured in production units, in the manufacture of children's sleepwear garments which are subject to the Standard. When such fabric is utilized in the manufacture of such garments, the inability of the garment manufacturer to record the fabric production unit identification of such fabric does not constitute a violation of § 1616.31(d)(4)(i).

UNITED STATES GOVERNMENT

Memorandum

U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C. 20207

TO : Commission
THRU : Sadye E. Dunn, Secretary
THRU : David Schmeltzer, Acting General Counsel
FROM : Alan C. Shakin, OGC

DATE: FEB 25 1977

SUBJECT: Options for Commission action as to wearing apparel containing Tris

I. ENVIRONMENTAL DEFENSE FUND PETITIONS

On February 8, 1977 the Environmental Defense Fund (EDF) submitted to the Commission a petition (HP 77-8) requesting the banning of wearing apparel containing the flame-retardant chemical Tris (2, 3-dibromopropyl) phosphate (hereafter "Tris") because it is carcinogenic. This petition is related to a March 1976 EDF petition (HP 76-10) which requests mandatory cautionary labeling for wearing apparel containing Tris and which is currently pending before the Commission.

The February 1977 petition requests the Commission to take various actions. This memo will focus on those requests that involve regulatory and enforcement actions. 1/ It will also address whether particular Commission decisions to take one or more such actions would constitute a granting or denial of the petition. The EDF has requested (according to our interpretation of the petition):

1/ Although requests for enforcement actions are not "petitionable" requests because they don't seek rulemaking (see section III. G, below), this memo will discuss them in the general context of options for addressing the potential hazard of Tris. The following requests involve neither enforcement nor regulatory actions and are not discussed in this memo (they are also not "petitionable" requests):

a) a warning and information to the public concerning wearing apparel containing Tris;

b) an investigation of wearing apparel that does not contain Tris; and

c) an investigation, with other agencies, of the environmental and health effects of the disposal of wearing apparel containing Tris.

1. an interpretation that children's sleepwear containing Tris is banned by section 2(q)(1)(A) of the Federal Hazardous Substances Act (FHSA) (in the attached February 16, 1977 letter to Sadye Dunn that supplements the petition, the EDF strongly urges the Commission to grant this request);

2. a regulation banning all wearing apparel containing Tris under either sections 2(q)(1)(B) and 2(q)(2) of the FHSA or under sections 8 and 9 of the Consumer Product Safety Act (CPSA) and repurchase of such wearing apparel that is in commerce under either section 15 of the FHSA or section 15 of the CPSA;

3. immediate action on a ban of all wearing apparel containing Tris (including repurchase) under section 2(q)(2) of the FHSA or under section 12 of the CPSA;

4. possible modification of the Commission's Flammable Fabrics Act standards for children's sleepwear to permit the sale of certain untreated garments; and

5. a regulation requiring labeling of garments containing any flame-retardant additives other than Tris that have not been tested by industry for toxicity.

II. STATUTORY BACKGROUND

The following discussion is organized according to various provisions of the acts the Commission administers and includes the options that we believe the Commission should consider in addressing the EDF's regulatory and enforcement requests (if it decides to grant any or all of them):

A. Federal Hazardous Substances Act

The hazard alleged by the petition, carcinogenicity, falls within the Commission's jurisdiction under the FHSA. The Food and Drug Administration and the Commission have acted under the FHSA against general-use garments containing asbestos and self-pressurized household products containing vinyl chloride monomer on the basis of such hazards. However, we stress that any Commission action against wearing apparel containing Tris must be based on its hazard to wearers of such apparel. Judicial interpretations concerning carcinogenic pesticides (the petitioner has cited Environmental Defense Fund v. Environmental Protection Agency 510 F.2d 1292 (C.A.D.C. 1975) on page 15 of its

February 1977 petition and on page 3 of its February 16 letter) may be, but are not necessarily, relevant to an evaluation of the hazard posed by a carcinogen in wearing apparel. Similarly, statutory provisions concerning carcinogenic food additives (a "Delaney clause" in the Federal Food, Drug, and Cosmetic Act states that "...no additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal, or if it is found, after tests which are appropriate for the evaluation of the safety of food additives, to induce cancer in man or animal..." 21 U.S.C. 348 (c)(3)(A)) may be, but are not necessarily, relevant.

The FHSA defines a "hazardous substance" to include "[a]ny substance or mixture of substances which (i) is toxic, (ii) is corrosive, (iii) is an irritant, [or) (iv) is a strong sensitizer... if such substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children" (section 2(f)(1)(A)). Section 2(g) of the FHSA defines "toxic" as follows: "The term 'toxic' shall apply to any substance (other than a radioactive substance) which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface." Sections 2(i), 2(j), and 2(k) define "corrosive," "irritant," and "strong sensitizer."

The Commission's regulations, in addition to restating the statutory definitions, supplement the definition of "toxic" by setting forth white rat and rabbit dosage tests and by stating that the term also applies to any substance that is toxic on the basis of human experience (see 16 CFR 1500.3(c)(2)). Any substance meeting this supplementary definition or the more general section 2(g) definition of "toxic" would be a "hazardous substance" under the FHSA as long as it also "may cause substantial personal injury or substantial illness..." under section 2(f)(1)(A).

Whenever there is uncertainty as to whether wearing apparel containing Tris is a "hazardous substance," the Commission may, under section 3(a) of the FHSA, resolve the uncertainty by declaring by regulation that it is a hazardous substance. The procedure for such a regulatory determination is to conduct a "701(e) proceeding" (21 U.S.C. 371(e) of the Federal Food, Drug, and Cosmetic Act, referenced by section 3(a)(2) of the FHSA). As the Commission knows, a

701(c) proceeding is a two-stage procceding that could take a substantial time to complctc both stages. If a person adversely affected by an order following the notice and commcnt stage of the proceeding files a "legally sufficient" objection, the Commission must conduct the second stage which requires a formal hearing beforc an administrative law judge. 2/

1. Remedies

Section 2(q)(1) of the FHSA, discussed in detail below in sections 2 and 3, defines certain products as "banned hazardous substances." If a product is a banncd hazardous substance, it is prohibited from interstate commerce. 3/ In addition, section 15 of the FHSA requires the automatic repurchase of banned hazardous substanccs. Manufacturers (including importers for resale) must rcpurchase from their purchasers. Distributors must repurchasc from their purchasers. Dealers who sold at retail must repurchase from any person who returns the items to thcm. In cvery case, a refund of the purchase price must be madc in addition to thc payment of certain expenses incurred in returning the item(s). However, a recently-issued Commission regulation permits replaccment or repair of banned items instead of repurchasc,

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2/ It should be noted that the Commission's option to conduct an informal notice and comment rulemaking procceding under 5 U.S.C. 553 instead of a 701(e) proceeding is available when toys and other children's articles presenting mechanical, thermal, or clectrical hazards are the subject of regulation (section 3(e)(1) of the FHSA). Such an option, however, is not applicablc to FHSA regulation involving Tris.

3/ Scction 4 of the FHSA prohibits the introduction or dclivery for introduction into interstate commerce of a banned hazardous substance; the doing of any action with respect to a hazardous substance while it is in interstate commcrce which rcsults in its being a banned hazardous substancc; reccipt in interstate commerce of a banned hazardous substance; and dclivcry or proffercd delivery for pay or otherwise of a banned hazardous substancc.

Seizures of banned hazardous substancces in interstate commerce are authorized by scction 6 of the FHSA. Sections 5 and 8 authorize thc Commission to seek injunctions or criminal penalties against persons who violate the prohibitions listed above.

at the option of the owner (16 CFR 1500.203). The Commission's other regulation concerning FHSA repurchase requires that retailers place signs in their establishments informing customers of the repurchase (see 16 CFR 1500.202). While there are no penalties for violations of repurchase requirements, the actions of violators could be enjoined.

Despite the automatic repurchase provisions of section 15 of the FHSA, the Commission has used the banning provisions of the FHSA, in conjunction with provisions added in 1969 concerning toys and other children's articles presenting mechanical, thermal, or electrical hazards, to ban only such articles that are introduced into interstate commerce after a certain date. The Commission could thus issue a banning regulation that does not require the repurchase of existing articles in the hands of consumers and at various stages of distribution.

The bicycle regulation is a good example of this approach: Not only were bicycles already in commerce exempted from the banning regulation, but a delayed and "prospective only" effective date meant that other bicycles that entered interstate commerce before the effective date were similarly not banned. The Commission believed that this was appropriate because the many technical requirements for bicycles were designed to protect against "unreasonable risks of injury" but did not generally address hazards so severe that a non-complying bicycle should be repurchased or even immediately banned.

The hazard presented by wearing apparel containing Tris must be evaluated in this context. Even if the potential long-range hazard, cancer, is very serious, it may be that the additional protection that would be obtained from attempting to have repuchased all such apparel in the hands of consumers and in the distribution channels is not justified. The Commission may alternatively decide that full repurchase is justified.

2. Section 2(q)(1)(A)

If Tris is a hazardous substance under the FHSA, the Commission could consider banning children's sleepwear containing Tris by finding that such sleepwear is a "banned hazardous substance" under section 2(q)(1)(A). Since such sleepwear is an "article intended for use by children" it would automatically be a banned hazardous substance by

definition under section 2(q)(1)(A) if it "bears or contains [Tris] in such manner as to be susceptible of access by a child to whom [it] is entrusted."

Section 2(q)(1)(A) does not offer the Commission a regulatory option. Rather, it involves Commission enforcement of an already-existing ban. Under this provision the Commission would have to notify manufacturers and others that it considers children's sleepwear containing Tris to be a banned hazardous substance and that any manufacture, distribution, or sale of it is therefore a violation of the FHSA. The Commission could notify particular manufacturers, distributors, and retailers of this interpretation directly or it could notify all interested persons by issuing a public interpretation (such as in the Federal Register). In either case, automatic repurchase would be in effect.

3. Section 2(q)(1)(B)

An alternative approach for addressing the petition under the FHSA would be to regulate children's sleepwear containing Tris, as well as any other wearing apparel containing Tris that may exist, under section 2(q)(1)(B). If a hazardous substance is "intended, or packaged in a form suitable, for use in the household," the Commission can issue a regulation determining it to be a banned hazardous substance "on the basis of a finding that, notwithstanding such cautionary labeling as is or may be required under this Act for that substance, the degree or nature of the hazard involved is such that the objective of the protection of the public health and safety can be adequately served only by keeping such substance, when so intended or packaged, out of the channels of interstate commerce." (The effectiveness of cautionary labeling is one of the issues raised by the March 1976 EDF petition.)

The proceeding for a regulatory determination under section 2(q)(1)(B) that a product is a banned hazardous substance is a 701(e) proceeding. If the Commission finds that it would have to conduct one 701(e) proceeding to determine under section 3(a) that Tris is a hazardous substance and another 701(e) proceeding to find that wearing apparel containing Tris is a banned hazardous substance, we believe that both such proceedings could be combined into one. The Commission has followed this approach in its proceedings concerning fireworks and vinyl chloride.

A potential objection to the Commission's use of section 2(q)(1)(B) to ban children's sleepwear exists, since section 2(q)(1)(A) could be interpreted to ban it by definition. However, we don't believe that the FHSA should be interpreted as offering fewer options for children's products that are hazardous substances than for adult products. The clear legislative intent of the FHSA was to impose more stringent control over children's products. If the Commission decides that section 2(q)(1)(A) is not appropriate for addressing a hazard presented by children's sleepwear containing Tris, we believe that action against such sleepwear under section 2(q)(1)(B) would be supportable. The Commission has already adopted this view by regulating fireworks under section 2(q)(1)(B).

If wearing apparel containing Tris is determined to be a banned hazardous substance according to section 2(q)(1)(B), automatic repurchase applies. On the effective date of the regulatory determination, manufacturers, distributors, and retailers would have to repurchase from their customers.

4. Imminent hazard

Pending the completion of a 701(e) proceeding, the Commission could publish an order in the Federal Register that wearing apparel containing Tris is a banned hazardous substance. Such an order must be based on the finding that "the distribution for household use of [such wearing apparel] presents an imminent hazard to the public health" (section 2(q)(2)). The following Food and Drug Administration regulation (21 CFR 3.73) applies to this FHSA imminent hazard provision (since the Commission has not repealed, modified, or superseded this regulation, it remains in effect according to section 30(e)(2) of the CPSA):

> ...[A]n imminent hazard to the public health is considered to exist when the evidence is sufficient to show that a product or practice, posing a significant threat of danger to health, creates a public health situation (1) that should be corrected immediately to prevent injury and (2) that should not be permitted to continue while a hearing or other formal proceeding is being held. The "imminent hazard" may be declared at any point in the chain of events which may ultimately result in harm to the public health. The occurrence of the final anticipated injury is not essential to establish that an "imminent hazard" of such occurrence exists.... In exercising [its] judgment on whether an "imminent hazard" exists,

> the [Commission] will consider the number of injuries anticipated and the nature, severity, and duration of the anticipated injury.

The obvious reason for including an imminent hazard provision in the FHSA was that very dangerous articles should not remain on the market while a proceeding is conducted. The legislative history of the "imminent hazard" provision states that "[w]here the procedural delay involved in plenary hearings would otherwise result in injury to the public, the [Commission] would be authorized to suspend the article from the market, pending the completion of hearings and review" (H.R. Rep. No. 2166, 89th Cong., 2d Sess. 3 (1966)). This section 2(q)(2) imminent hazard provision specifically applies only to proceedings under section 2(q)(1)(B) of the FHSA.

As soon as an imminent hazard order is issued, the automatic repurchase provisions become effective.

B. Consumer Product Safety Act

Before section 30(d) of the CPSA was amended last year, the Commission could use the provisions of the CPSA only if it could not sufficiently reduce or eliminate a risk of injury associated with consumer products under one of the transferred acts. In light of the above discussion of the regulatory alternatives available under the FHSA, we believe that this would be a difficult finding to make as to wearing apparel containing Tris.

However, the Commission can now use provisions of the CPSA to regulate risks of injury if it finds by rule that it is in the public interest to do so (section 30(d), as amended). The rulemaking finding must be made by informal notice and comment procedures, with no more than 30 days provided for comment. The legislative history does not clarify what, if any, restrictions the "public interest" wording imposes on Commission use of the CPSA. A House member who opposed the amendment to section 30(d) stated frequently during debate that it would allow the Commission to "pick and choose" among its acts (Broyhill, Cong. Rec. H9182-9183, September 26, 1975). This view is not disputed in the legislative history and it is clear that the intent of the amendment was to provide the Commission greater flexibility to choose to regulate a particular risk of injury under the CPSA. A House supporter of the amendment specifically mentioned

during the debate that the CPSA would have provided more expeditious procedures, with sufficient due process rights, for regulating fireworks than the 701(e) procedures that the Commission did use (Van Deerlin, Cong. Rec. H9184, September 26, 1975).

An appropriate "public interest" rationale of course depends on the particular provision of the CPSA that the Commission decides to use. We believe that we could draft a reasonably strong rationale in support of regulation under section 8 of the CPSA, discussed below. For example, an imminent hazard finding followed by a 701(e) proceeding would involve an immediate and effective remedy (total repurchase) which is not based upon any formal industry comment. Only after a potentially-lengthy rulemaking proceeding would the Commission's action be ripe for the statutorily-mandated judicial review. In contrast, section 8 of the CPSA requires that a notice and comment rulemaking proceeding (with an opportunity for oral comment) open to all interested persons precede a ban, followed by the statutorily-mandated judicial review. The Commission might find that the "public interest" favors the public participation prior to a ban and the likelihood of more expeditious judicial review.

While arguments that it is not "in the public interest" to forego all potential FHSA approaches certainly exist, the Commission need only be able to support its "public interest" finding rather than be convinced that no other findings are arguable. Since sections 12 and 15 of the CPSA do not involve "regulatory" options, section 30(d) could not be a bar to their use.

1. Section 8

If a consumer product (1) "presents an unreasonable risk of injury" and (2) presents such a risk that "no feasible consumer product safety standard under [section 7 of the CPSA] would adequately protect the public," a rule declaring the consumer product to be a "banned hazardous product" under section 8 of the CPSA may be proposed.

If the Commission were to propose such a ban for wearing apparel containing Tris, it would have to seek written public comments and provide an opportunity for "the oral presentation of data, views, or arguments" according to

section 9(a)(2). Any final ban issued under section 9 would have to address the findings required by section 9(c) concerning the risk of injury involved, economic consequences, necessity for the ban, alternative approaches, competitive effects, public interest, etc.

An important consideration in proceeding with a ban is whether a feasible consumer product safety standard issued under sections 7 and 9 could adequately protect the public. If the Commission believed that wearing apparel containing Tris on the market must be stopped from further distribution, section 7 would clearly not be adequate because section 7 addresses only products manufactured after its effective date (see section 9(d)(1)) while section 8 potentially bans all existing and future products.

However, if the Commission wants to address only wearing apparel not yet manufactured, it must carefully consider the adequacy of a possible standard as compared to a ban. The staff may find that a standard for wearing apparel containing Tris would "adequately protect the public." For example, it may be that some limit on the amount of Tris in each garment or on the surface of garments would be effective or that some type of bonding of flame-retardant chemicals to garments could be a feasible requirement in a standard. (If the Commission does decide to pursue regulation under section 7 of the CPSA, we can provide in a subsequent memo whatever legal guidance may be helpful.)

An additional question, one discussed in connection with the Commission's action to propose a ban of refuse bins, is whether section 8 can be used when something less than all products of a particular type are to be banned. In this case, not all wearing apparel would be banned, but all wearing apparel containing Tris would apparently be banned. Especially as compared to regulation of products that involves three pages of technical requirements, regulation that prohibits all wearing apparel containing Tris seems to be more a "ban" than a "standard."

If the Commission declares wearing apparel containing Tris to be a "banned hazardous product" under sections 8 and 9 of the CPSA, section 19(a)(2) prohibits its manufacture for sale, offer for sale, distribution in commerce or importation into the U.S. This would have the effect of "freezing"

all inventory that is not already bought by consumers. However, there would be no repurchase requirement to pass the wearing apparel back up the chain to the apparel manufacturers. In the absence of voluntary or contractual recall by some or all such manufacturers or private legal actions, it appears that retailers and distributors would have to hold their stock and absorb the associated business losses. Consumers would have no recourse as to wearing apparel that they already have.

If the Commission believes that it would not be necessary to regulate the wearing apparel consumers have already bought (and would have bought by the effective date of the ban), as long as future sales are stopped, regulation under sections 8 and 9 might be an appropriate approach. While the Commission is proposing and considering comments on a section 8 ban, those in the distribution chain could attempt to sell their inventories, but such sales would of course be limited to consumers who don't know about or care about the already-publicized potential hazard. A delayed effective date would provide additional time for this to occur (section 9(d) of the CPSA and 5 U.S.C. 553, taken together, require that the effective date of a section 8 ban be 30-180 days following the issuance date unless "good cause" dictates an earlier or later effective date).

In addition to or instead of a delayed effective date, the Commission could decide to apply a section 8 ban only prospectively and not retroactively. Such a ban would probably be worded so that only the wearing apparel containing Tris that is introduced into interstate commerce after a particular effective date would be declared to be a "banned hazardous product." The effect of this approach would be that existing stock would not be regulated and could be sold to consumers to the extent that marketplace practicalities allow. Unlike a retroactive section 8 ban that would "freeze" all wearing apparel containing Tris in commerce on the effective date, a "prospective only" ban would never be applicable to such wearing apparel already in commerce on the effective date.

2. Section 15

If the Commission believes that wearing apparel containing Tris contains a "product defect which...creates a substantial risk of injury to the public," it can utilize section 15 of the CPSA to seek remedial action.

Most of the remedies available under seetion 15 are specifieally direetcd at produets that are already on thc market and in the hands of consumers. Potential relief involves repair, replaeemcnt, or refund of the purchase priee, as well as reeall and publie notifieation measures that are designed to encourage eonsumers to return the produets involved. The Commission may order sueh relief only after an adjudieative (administrative law judge) proeeeding takes plaee (seetion 15(f) of the CPSA).

However, a 1976 amendment to seetion 15 authorizes the Commission to seek from a federal distriet eourt a preliminary injunction restraining the distribution of produets whieh (1) are the subjeet of a pending adjudieative proeeeding and (2) the Commission has "reason to believe" present a substantial product hazard (see seetion 15(g)). The purpose of a preliminary injunetion would be to proteet the public pending completion of the adjudicative proceeding, and it would be granted only after the eourt evaluates the traditional eonsiderations -- i.e., whether irreparable harm is likely to oeeur if the injunction is not issued, any injury whieh granting the injunction would infliet on the defendant, the probability that the Commission will succeed on the merits, and the publie interest (Conference Report No. 94-1022, 94th Cong., 2nd Sess., p. 26). The district eourt may grant extensions of sueh a preliminary injunction.

A difficult problem with addressing sueh a widespread produet as wearing apparel eontaining Tris under seetion 15 is that the Commission staff would have to serve process on all manufaeturers, distributors, and retailers against whom it wanted to proceed. (If the Commission adopts eertain provisions that have been proposed by the staff for the Rules of Practice, however, personal service may not be required.) This would be especially diffieult if the Commission does not know and eannot determine which garments actually do contain Tris.

Aeeording to seetion 15(d), as amended, a Commission order following an adjudicative proeeeding "may prohibit the person to whom it applies" from manufacturing, importing, distributing, or selling "the product with respect to whieh the order was issued." Other products whieh present the same or a similar hazard are still not technieally covered, but any order against existing wearing apparel containing Tris would affect all sueh future wearing apparel, in our opinion.

3. Section 12

While section 12 of the CPSA offers the possibility of expeditious relief, it also demands a difficult showing of risk. The Commission, using its own attorneys, may file an action in a federal district court against an "imminently hazardous" consumer product. As with section 15, individual manufacturers, distributors, and retailers must be served. However, the class action rule applicable to federal district courts could allow the Commission to use a method other than personal service. (Alternatively, the Commission could file against the products themselves, but this would involve actually finding the wearing apparel containing Tris, a difficult task which is made more difficult by our limited ability to identify particular garments containing Tris by looking at them.)

The court is empowered under section 12 to grant whatever temporary or permanent relief may be necessary to protect the public, including mandatory notification to purchasers, public notice, recall, repair, replacement, and refund. The Commission has used this provision only once thus far, against certain hazardous trouble lights, and was successful in obtaining some judicial relief.

If relief under section 12 is to be pursued, the Commission must also pursue regulatory action against such products, if appropriate, and may consult with the Product Safety Advisory Council before any such action is filed.

Under section 12 the Commission could limit its requested relief to whatever it considers appropriate. However, anything short of a total recall would seem to be inconsistent with the claim that wearing apparel containing Tris presents an "imminent hazard." In addition, it may be difficult to convince a court that its immediate consideration of an injunction against future manufacture is crucial, but that further distribution of existing inventory is permissible.

C. Flammable Fabrics Act

The Commission could address the potential risk of injury presented by Tris and other flame-retardant additives in a different way under the FFA. Since wearing apparel is treated with flame-retardants in all or in most cases in order to comply with the Commission's FFA children's sleepwear standards (16 CFR Parts 1615 and 1616), revocation of

those standards would probably eliminate future use of flame-retardants in wearing apparel. Similarly, amendments to the standards might result in all manufacturers complying without using any dangerous flame-retardants. Such amendments might be drafted to prohibit the use of Tris and perhaps other specific flame-retardants to meet the standards or they might be drafted to ease the standards' requirements so that all manufacturers could and would meet the standard by using untreated garments.

Revocation or amendment of the children's sleepwear standards has the advantage of addressing the EDF's additional concerns about flame-retardant chemicals besides Tris that are or might be used in wearing apparel and that might be hazardous.

The required procedures would be to propose revocation or an amendment for public comment before taking final action. Although not explicitly included in the FFA, we believe that an appropriate criterion for such rulemaking would be a balancing of the possibility of increasing the risk of injury from fire against the possibility of reducing the risk from flame-retardant chemicals. 4/

III. DISCUSSION OF OPTIONS

We suggest that the Commission consider its options for addressing the potential hazard presented by wearing apparel containing Tris with two important questions concerning the risk in mind:

(1) whether the Commission should act against the wearing apparel in consumers' hands and/or currently in the market and

(2) how quickly action against the wearing apparel should take effect.

4/ The FFA authorizes amendments of flammability standards only if they are based on "[protection of] the public against unreasonable risk of the occurrence of fire leading to death or personal injury, or significant property damage" (section 4). The asserted hazard of Tris as a carcinogen and the potential hazards of other flame-retardant chemicals do not fall within this statutory criterion. Nevertheless, we do not believe that the Congress could have intended that a standard could not be modified to reduce or prevent some non-flammability hazard that it has increased or even created. We therefore believe that the "balancing" criterion is an appropriate one for the Commission to use to amend the children's sleepwear standards.

The following additional factors should be evaluated for each possible option:

(a) the procedures involved,

(b) the statutory findings concerning risk that must be made and supported,

(c) the remedies available, and

(d) the scope of judicial review that applies.

A. Section 2(q)(1)(A) of the FHSA

Under the FHSA, a crucial question is whether the Commission believes that wearing apparel containing Tris is "toxic" under the section 2(q) statutory definition. If not, a 701(e) proceeding must establish its toxicity before any relief can become effective.

Although the section 2(q) definition does not exclude carcinogens, the statutory framework of automatic remedies against hazardous substances that are toxic does not seem appropriate unless the toxicity is easily discernible (as with such acutely toxic hazardous substances as carbon tetrachloride). This is underscored by the fact that an FHSA provision (section 3(a)) calls for rulemaking determinations to "[avoid or resolve] uncertainty" as to whether a product is a hazardous substance. Nevertheless, the automatic remedies are designed to protect the public even if they may also penalize manufacturers, distributors, and retailers by denying them the opportunity to contest the merits of the Commission's action in a rulemaking proceeding. As long as the hazard justifies Commission enforcement of automatic relief, section 2(q)(1)(A) certainly authorizes such enforcement.

Despite the absence of a rulemaking proceeding, a Commission interpretation that children's sleepwear containing Tris is a banned hazardous substance would undoubtedly be challenged in court. The challenge could take place when the Commission requests that U.S. Attorneys seize such sleepwear or seek injunctions against its distribution in federal district court actions. Alternatively, the Commission's interpretation could be met with one or more requests that a federal district court issue a restraining order and/or injunction against Commission enforcement.

In either situation, the Commission would have the burden of presenting evidence, through the local Assistant U.S. Attorney handling the case, that supports its interpretation that children's sleepwear containing Tris is "toxic" under section 2(g), is a "hazardous substance" under section 2(f)(1)(A), and is therefore automatically banned under section 2(q)(1)(A). Whatever the technical evidence presented on both sides, we believe that many judges would view in an extremely critical way the absence of any rulemaking proceeding in which the Commission considered the views of interested persons before declaring the sleepwear to be hazardous.

B. Section 2(q)(1)(B) of the FHSA without an "imminent hazard" order

Unlike section 2(q)(1)(A), the option presented by section 2(q)(1)(B) (without an "imminent hazard" order) involves a rulemaking proceeding. The question to be decided in the proceeding is whether labeling is adequate to address the risk presented by a hazardous substance. Since 701(e) procedures apply to section 2(q)(1)(B) rulemaking, this option could be lengthy. An advantage, however, is that the Commission, if challenged, would be defending its determination in a federal court of appeals and a challenger would have the burden of showing that the determination is not supported by "substantial evidence on the record." In any such court of appeals review, the challenger could also seek a stay of the Commission's regulation. The court would evaluate the factors discussed above in section II. B. (2) before ruling on a request for a stay.

A section 2(q)(1)(B) banned hazardous substance rule does not offer an immediate remedy, but, once such a rule became effective, it could involve total repurchase from consumers and from those in the chain of distribution. We believe that the Commission could apply a ban under section 2(q)(1)(B) prospectively only if the nature and degree of the hazard justified such action. For example, the Commission might find in a 701(e) proceeding that most garments already in the hands of consumers have been washed frequently enough so that the risk they present is minimal.

As long as the Commission would be conducting a 701(e) proceeding to decide the adequacy of labeling, it could combine this proceeding with the threshold question of whether wearing apparel containing Tris is a hazardous

substance. If there is uncertainty, section 3(a) requires a 701(e) proceeding to determine this question (and, as we said above in section II.A.(3), the two 701(e) proceedings could be combined).

An important advantage to the rulemaking approach under section 2(q)(1)(B) is that the Commission would not be relying on a finding that the section 2(g) definition of "toxic" and the section 2(f)(1)(A) definition of "hazardous substance" unambiguously include wearing apparel containing Tris. The major disadvantage is of course that no remedy would be imposed immediately. If the Commission found, following a 701(e) rulemaking proceeding, that wearing apparel containing Tris is a banned hazardous substance, we believe that our case defending that decision in a federal court of appeals would be a strong one.

C. Section 2(q)(1)(B) of the FHSA with an "imminent hazard" order

A trade-off is involved if the Commission decided to issue an "imminent hazard" order under section 2(q)(2) and thus institute a ban pending completion of the 701(e) proceeding. The imminent hazard provision applies only to products that are "hazardous substances." The Commission would therefore have to rely on a finding that wearing apparel containing Tris unambiguously meets the section 2(f)(1)(A) definition of "hazardous substance" in order to support an imminent hazard order. (Since section 3(a) requires that a 701(e) proceeding be conducted to determine what is a hazardous substance, it could not be used to support an imminent hazard order that is issued at the outset of a 701 (e) proceeding.)

The statutorily-mandated judicial review in a federal court of appeals is available at the conclusion of the 701 (e) proceeding required by section 2(q)(1)(B). As discussed above in section II.A.(4), an imminent hazard order removes a product from the market "pending review."

Nevertheless, an imminent hazard order could be challenged in a federal district court in the same manner that a section 2(q)(1)(A) action could be challenged. Our legal stance in defense of an imminent hazard order would probably be stronger than a defense of action under section 2(q)(1)(A) because the statutory rulemaking proceedings would be underway. We would be recognizing the applicability of these

proceedings and any rule resulting from them would be subject to judicial review in the federal courts of appeals. Despite the availability of such review, however, the merits of an imminent hazard order that bans wearing apparel containing Tris could be resolved in a federal district court (in the context of the need for immediate relief). The most difficult issue would probably be the Commission's finding that wearing apparel containing Tris is a hazardous substance by definition under section 2(f)(1)(A) of the FHSA.

As with a ban following a 701(e) proceeding, we believe that the Commission could apply an imminent hazard order prospectively only. While such an order might undercut the argument that immediate relief is necessary, it could, on the other hand, decrease the likelihood of judicial challenge.

An advantage to action under section 2(q)(1)(B), with or without an imminent hazard order, is that both children's and adults' wearing apparel could be covered. However, if the risk to children is greater than to adults (e.g., if "mouthing" of garments is an important means of entry of Tris into the body), it would be more difficult to show that all wearing apparel containing Tris is hazardous. The importance of this factor depends of course on the extent to which Tris is present in adult wearing apparel.

D. Section 8 of the CPSA

If the Commission wants to initiate rulemaking proceedings against wearing apparel containing Tris, and does not want to pursue immediate relief through an imminent hazard order, it could avoid the potentially-lengthy 701(e) proceeding required by section 2(q)(1)(B) of the FHSA. Sections 8 and 9 of the CPSA involve a notice and comment rulemaking proceeding with an opportunity for oral comments (the section 30(d) notice and comment proceeding could be conducted at the same time). However, the section 9(c) findings required for a section 8 ban might prove burdensome and the Commission must also be able to support action under section 8 with a finding that no feasible standard under section 7 would adequately protect the public.

Remedies under section 8 could include the "freezing" of existing inventories at the time a final ban becomes effective (but without repurchase and without any remedy applicable to garments already in the hands of consumers).

A "prospective only" ban under section 8 would apply to wearing apparel containing Tris that is manufactured after a particular date.

Judicial review of action under sections 8 and 9 involves a federal court of appeals reviewing the Commission's rule-making record to determine if it is supported by "substantial evidence." A stay of the Commission's ban, pending completion of the judicial review, could be imposed.

E. Sections 12 and 15 of the CPSA

Under sections 12 and 15 of the CPSA, the individual manufacturers, distributors, and retailers must be served before any remedies can be enforced against them. This is a crucial factor to consider before the Commission pursues either of these options.

F. Flammable Fabrics Act

Commission action under the FFA would not provide any immediate remedy against Tris or any other flame-retardant. The Commission would have to conduct a notice and comment rulemaking proceeding. However, an easing of the children's sleepwear standards to eliminate the use of Tris is a very logical option since these standards have caused the wide-spread use of Tris in children's sleepwear.

G. Consequences of Commission action or inaction with regard to the petitions

As a petition for rulemaking, the primary request of the EDF February 1977 petition is for a ban of "the further sale of all wearing apparel containing [Tris]." The Commission could grant this request by initiating rulemaking under either section 2(q)(1)(B) of the FHSA or section 8 of the CPSA. Under the FHSA, the Commission may deny this portion of the petition if it finds that there are no "reasonable grounds" in support of a banning rule. Under section 8 of the CPSA, the Commission may deny this portion of the petition if it cannot make preliminary findings that an unreasonable risk of injury exists and no feasible section 7 standard would adequately protect the public.

Although the EDF's requests for immediate action on a ban (see request (3) under section I, above) are not requests for rulemaking, it is very possible that the EDF would take the Commission to court if no immediate relief against wearing

apparel containing Tris were imposed. (In addition to any available specific statutory review, "final agency action" can be challenged in a federal district court as being "arbitrary and capricious.") If the Commission's action against such wearing apparel involved immediate relief but not rulemaking, we are nearly certain that the EDF would not institute court action. Not only has the EDF specifically requested non-rulemaking relief under section 2(q)(1)(A) of the FHSA and section 12 of the CPSA, but the potential relief from such actions is comparable to or broader than relief from rulemaking.

The EDF requested precautionary labeling for wearing apparel containing Tris in its March 1976 petition. If the Commission decided not to institute rulemaking for precautionary labeling or for a ban of such wearing apparel, the EDF would have a cause of action based on Commission denial of its March 1976 petition, as well as of the February 1977 petition. Similarly, if the Commission did not initiate regulatory or enforcement action against sleepwear containing Tris, the EDF might have a cause of action based on its February 1977 request to modify the FFA sleepwear standards.

The EDF has also requested a labeling regulation for garments containing flame-retardants other than Tris (see request (5) under section I, above). Since the EDF seems to base this request for rulemaking on the absence of safety testing rather than on the existence of a known hazard, we do not consider it to be a petition for rulemaking. Petitions, under the Commission's policies, must set forth facts that support the need for a rule. In addition, the Commission does not have "pre-market clearance" authority and can set requirements for products, including labeling requirements, only when some level of hazard is found to exist.

Attachment

Attachment

Environmental Defense Fund

1525 18th Street, NW, Washington, D.C. 20036 • 202/833-1484

February 16, 1977

FEB 16 2 53 PM '77
CONSUMER PRODUCT SAFETY COMMISSION
OFFICE OF THE SECRETARY

Ms. Sadye E. Dunn
Secretary
U.S. Consumer Product Safety Commission
Washington, D.C. 20207

Dear Ms. Dunn:

The purpose of this letter is to clarify certain points raised in the petition of the Environmental Defense Fund for a ban on the sale of Tris-treated wearing apparel submitted to the Commission on February 8, 1977. As was pointed out in the EDF petition, there are a number of legal alternatives for regulating Tris under either the Federal Hazardous Substances Act or the Consumer Product Safety Act. Prompt action on Tris requires that these alternatives be carefully explored in order to avoid unnecessary delay in eliminating the human health hazards posed by this chemical.

The first step required for a ban on Tris under the Federal Hazardous Substances Act is a determination by the Commission that Tris is a "hazardous substance." "Hazardous substance" is defined as

> "any substance or mixture of substances which (i) is toxic, (ii) is corrosive, (iii) is an irritant, (iv) is a strong sensitizer, (v) is flammable or combustible, or (vi) generates pressure through decomposition, heat, or other means, if such substance or mixture of substances may cause substantial personal injury or substantial illness during, or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children." 15 U.S.C. §1261 (f)(i)(A).

The term "toxic" is further defined in subsection (g) of §1261:

> "the term toxic shall apply to any substance (other than a radioactive substance) which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface." 15 U.S.C. §1261 (g).

After repeating this definition in its regulations, the Commission has attempted to supplement the statutory definition of "toxic" with the following:

> "To give specificity to the definition of "toxic" in §2(g) of the Act (and restated in paragraph (b)(5) of this section), the following supplements (emphasis added) that definition: "toxic" means any substance that produces death within 14 days in half or more than half of a group of:
>
> (i) white rats (each weighing between 200 and 300 grams) when a single dose of from 50 milligrams to 5 grams/kg. of body weight is administered orally. Substances falling in the toxicity range between 500 mg. and 5 gms. per kg. of body weight will be considered for exemption from some or all the labelling requirements of the Act, under §1500.82, upon a showing that such labelling is not needed because of the physical form of the substances (solid, thick plastic, emulsion, etc.), the size or closure of the container, human experience with the article, or any other relevant factors;
>
> (ii) white rats (each weighing between 200 and 300 grams) when an atmospheric concentration of more than 200 ppm. but not more than 20,000 ppm. by volume of gas or vapor, or more than 2 but not more than 200 mg./liter by volume of mist or dust, is inhaled continuously for one hour or less, if such concentration is likely to be encountered by man when the substance is used in any reasonably foreseeable manner; and/or
>
> (iii) rabbits (each weighing between 2.3 and 3.0 kg.) when a dosage of more than 200 mg. but not more than 2 gm./kg. body weight is administered by continuous contact with the bare skin for 24 hours by the method described in §1500.40. The number of animals tested shall be sufficient to give a statistically significant result and shall be in conformity with good pharmacological practices. "Toxic" also applies to any substance that is "toxic" (but not "highly toxic") on the basis of human experience. 16 C.F.R. §1500.3 (c) (2).

It should be emphasized that this definition of "toxic" substances, according to the Commission's regulations, is designed only to supplement the statutory definition and is not the exclusive means of determining whether a substance is "hazardous" because it is "toxic." Obviously, the statutory definition takes precedence in all cases and should be the ultimate test for determining whether Tris is a "hazardous substance" for purposes of the Federal Hazardous Substances Act. As pointed out in the EDF petition, the data from the National Cancer Institute's bioassay on Tris clearly establishes Tris as a potent animal carcinogen in at least two species and at multiple sites (EDF petition at p.11). Recent policy positions from several Federal agencies, including the National Cancer Institute and the Environmental Protection Agency, in addition to recent

court decisions, hold that chemicals that are shown to be carcinogenic in animals can be presumed to be carcinogenic in humans. In the last week since the petition was submitted, the Occupational Safety and Health Administration has also proposed new regulations which would classify any chemical which had produced tumors in at least two mammalian species as a carcinogen for regulatory purposes. Numerous court decisions have reaffirmed the position taken by OSHA, the Environmental Protection Agency, and the National Cancer Institute as well as other Federal agencies. The courts have recognized that "although extrapolation of data from mice to men may be quantitatively imprecise, it is sufficient to establish a 'substantial likelihood' that harm will result." Environmental Defense Fund vs. Environmental Protection Agency, U.S. App. D.C. , 510 F.2d 1292, 1299 (1975); Society of the Plastics Industry, Inc. vs. OSHA, 509 F.2d 1301, 1308 (2d Cir. 1975), cert. denied, 421 U.S. 992 (1975); Synthetic Organic Chemical Manufacturers Association vs. Brennan, 506 F.2d 385 (3rd Cir. 1974), cert. denied, 95 S. Ct. 163 (1975); Synthetic Organic Chemical Manufacturers Association vs. Brennan, 503 F.2d 1155 (3rd Cir.1974), cert. denied, 95 S. Ct. 1396 (1975).

Although the Commission's current regulations defining "toxic" substances do not include a protocol for identifying carcinogens, the Commission has already banned as "hazardous substances" a number of carcinogens. Among others, the Commission has banned the use of carbon tetrachloride and mixtures containing it, general use garments containing asbestos, and aerosol cans using vinyl chloride as the propellant 16 C.F.R. 1500.17 (a)(2), (7), (10). Asbestos has been linked to lung cancer and both carbon tetrachloride and vinyl chloride have been linked to liver and other forms of cancer. Perhaps most significant, virtually all of the evidence on the carcinogenicity of carbon tetrachloride is based on animal data.1/ Also, vinyl chloride represents the classic case where animal experiments which demonstrated the carcinogenicity of vinyl chloride were subsequently confirmed by human data.

In short, although the Commission's regulations have not been amended to cover carcinogens specifically, the Commission's own action as well as the statute explicitly recognizes carcinogens as "hazardous substances." There is no question that Tris "has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface." 15 U.S.C. §1261 (g). As such, it qualifies as a "hazardous substance" under the Federal Hazardous Substances Act.

Having determined that Tris is a "hazardous substance," the next step is to determine which section of the statute will produce the most immediate and effective regulation of the chemical. Perhaps the most important consideration in this determination is the distinction which the statute makes between articles intended

1/ Air Pollution Assessment of Carbon Tetrachloride, Mitre Corporation, #7144, February, 1976, p.9.

for use by children and substances intended or packaged in a form suitable for use in the household. 15 U.S.C. §1261(q). Under §1261(q)(1)(A) "any toy or other article intended for use by children which is a 'hazardous substance' or which bears or contains a 'hazardous substance' in such manner as to be susceptible of access by a child to whom such toy or other article is entrusted" automatically becomes a "banned hazardous substance" under the Act. The determination that the substance is "hazardous" is all that is required for an immediate ban. On the other hand, those hazardous substances intended for use in the household can only become "banned hazardous substances" if

> "the Commission, by regulation, classifies (it) as a 'banned hazardous substance' on the basis of a finding that, notwithstanding such cautionary labelling as is or may be required under this Chapter for that substance, the degree or nature of the hazard involved in the presence or use of such substance in households is such that the objective of the protection of the public health and safety can be adequately served only by keeping such substance, when so intended or packaged, out of the channels of interstate commerce." 15 U.S.C. §1261(q)(1)(B).

Furthermore,

> "proceedings for the issuance, amendment, or repeal of regulations pursuant to clause (B) (i.e. hazardous substances used in the household) of paragraph (1) of this subsection shall be governed by the provisions of §371(e),(f), and (g) of Title 21." 15 U.S.C. §1261(q)(2).

Under paragraph (2) of subsection (e) of §371, any order of the Commission respecting a hazardous substance which is used in the household and thus falls under subsection (B) of paragraph (q)(1) is subject to the filing of objections by any person adversely affected by such order. 21 U.S.C. §371(e)(2). Furthermore, the person adversely affected may request a public hearing on the objections. Finally, the filing of such objections serves to stay the effectiveness of those provisions of the order to which the objections are made pending the outcome of the public hearing or other action by the Commission. 21 U.S.C. §371 (e)(2). Needless to say, these procedural requirements could significantly delay effective regulation of Tris should the Commission decide to proceed under §1261(q)(1)(B).

To avoid this potential delay, EDF recommends that the Commission act at least initially under §1261(q)(1)(A) in order to avoid the potentially lengthy procedural delays inherent in proceeding under subparagraph (B) of that section. Virtually all of the remaining Tris-treated garments are intended for use by children and thus would qualify for regulation under subparagraph (A), as opposed to subparagraph (B) which is subject to greater procedural delay. Should the Commission find that, contrary to

treated garments are used by adults, the Commission could undertake at a later date efforts to regulate these garments under subparagraph (B). In the meantime, swift action under subparagraph (A) on children's garments treated by Tris is essential.

Once Tris-treated garments used by children are covered under subparagraph (A), they become immediately subject to §1263 of the Federal Hazardous Substances Act which prohibits "the introduction or delivery for introduction into interstate commerce of any misbranded hazardous substance or banned hazardous substance." 15 U.S.C. §1263(a). Furthermore, §1263 also prohibits the "receipt in interstate commerce of any misbranded hazardous substance or banned hazardous substance and the delivery or proffered delivery thereof for pay or otherwise." 15 U.S.C. §1263(c). Section 1265 of the statute gives the Commission ample authority to recall Tris-treated garments as requested in the EDF petition. Finally, §1274 provides for the repurchase of banned hazardous substances in order to protect consumers. Under that section, the manufacturer of any such article or substance is required to repurchase it from the person to whom he sold it and is required to refund the purchase price of the garment. 15 U.S.C. §1274(a). In short, once the Commission has classified Tris-treated garments used by children as a hazardous substance, the remaining steps requested by EDF fall into place virtually automatically under the statute. For this reason, we strongly urge the Commission to proceed under §1261(q)(1)(A).

If members of the Commission or the Office of General Counsel have any questions regarding the points raised above, we would be happy to discuss them at the meeting scheduled for Friday, February 18. Your prompt consideration of this petition is appreciated.

Sincerely,

Robert H. Harris, Ph.D.

Robert J. Rauch, Esq.

Joseph Highland, Ph.D.

federal register

FRIDAY, APRIL 8, 1977

PART VIII

CONSUMER PRODUCT SAFETY COMMISSION

■

CHILDREN'S WEARING APPAREL CONTAINING TRIS

Interpretation as Banned Hazardous Substance

Title 16—Commercial Practices

CHAPTER II—CONSUMER PRODUCT SAFETY COMMISSION

PART 1500—HAZARDOUS SUBSTANCES AND ARTICLES; ADMINISTRATION AND ENFORCEMENT REGULATIONS

Children's Wearing Apparel Containing TRIS; Interpretation as Banned Hazardous Substance

AGENCY: Consumer Product Safety Commission.

ACTION: Interpretation of a statutory provision.

SUMMARY: The Commission is notifying the public that children's clothing containing the chemical flame-retardant TRIS is banned from commerce. According to the applicable statutory provisions, such clothing is banned by definition because it is intended for use by children and could cause substantial illness because of its toxicity.

Tests have established that TRIS causes cancer in animals, and can enter the bodies of children by being absorbed through the skin. This absorption occurs when children wear TRIS-treated clothing. Children also ingest TRIS by "mouthing" the clothing.

Since washing removes much of the available TRIS, children's clothing containing TRIS that is already in the hands of consumers, unless unwashed, is not banned. However, children's clothing containing TRIS that is in commerce on April 8, 1977, or is introduced into commerce after that date is banned and must be repurchased by any manufacturers or others who sold it.

DATES: The interpretation is effective on April 8, 1977.

FOR FURTHER INFORMATION CONTACT:

Francine Shacter, Office of Standards Coordination and Appraisal, Consumer Product Safety Commission, Washington, D.C. 20207. (202-492-6470).

ADDRESS: All of the documents, studies, and other materials that are discussed in the preamble and listed under References are available from the Office of the Secretary, 1111 18th Street NW., Washington, D.C. 20207. (202-634-7700).

SUPPLEMENTAL INFORMATION:

BACKGROUND

In March 1976 the Environmental Defense Fund (EDF), a health-oriented public interest organization, petitioned the Commission to require cautionary labeling for wearing apparel containing the chemical flame-retardant TRIS (2,3-dibromopropyl) phosphate, hereafter "TRIS," in surface concentrations in excess of 100 parts per million (ppm). This petition (HP 76-10) was based on data that showed that TRIS was capable of inducing mutations in Salmonella typhimurium when tested in both the presence and absence of metabolic activating systems (1,2,3)[1] The petition asserted at page 10 that this test has been shown to be a "highly reliable predictor" of carcinogenicity.

[1] The documents cited by parenthetical numbers correspond to the documents listed in the section on References, below.

The Commission conducted a search of the existing literature in April 1976, and initiated a biological testing program in its own laboratories in June 1976 to evaluate the scientific issues raised in the petition. In addition, the Commission asked the National Cancer Institute (NCI) to expedite its rat and mouse carcinogenicity feeding studies involving TRIS that were already underway (4). The NCI agreed to provide the Commission with preliminary results from these studies as they became available (5).

On February 4, 1977 the Commission obtained the preliminary NCI test data (6). Within two weeks, the Commission's Bureau of Biomedical Science (BBS) provided a statistical analysis of the NCI rat and mouse bioassay study. (7).

Based on its analysis of the same NCI preliminary test results, EDF petitioned the Commission on February 8, 1977 (HP 77-8) to ban the sale of wearing apparel containing TRIS (8). The Commission's technical staff met with Dr. Robert Harris, Dr. Joseph Highland, and Mr. Robert Rauch of EDF on February 18 to discuss this petition.

On March 2, the Commission met with Dr. Marvin Schneiderman, an Associate Director of the National Cancer Institute, and on March 8 the Commission met with the same EDF representatives that had met with the staff. All of these meetings were open to the public and transcripts are available (9, 10, 11).

Ms. Joanne Siegel and Dr. Reuben Epstein also petitioned the Commission, on February 1, 1977, to address the risk presented by wearing apparel containing TRIS (12). This petition (FP 77-1) requests the Commission to amend or revoke its flammability standard for children's sleepwear sizes 0-6X (16 CFR Part 1615), issued under the Flammable Fabrics Act, which has encouraged the use by manufacturers of TRIS as a flame retardant (although this standard imposes performance requirements concerning flame resistance, it neither prohibits nor requires the use of TRIS or any other chemical flame retardant).

On March 16, 1977 an updated draft of the TRIS bioassay results was released by NCI for the March 25 meetings of the Data Evaluation and Risk Assessment Subgroups of the Clearinghouse on Environmental Carcinogens (13). These two subgroups act as statutory advisory groups to the NCI's Division of Cancer Cause and Prevention. At its March 25 meeting the Data Evaluation Subgroup reviewed and approved the NCI bioassay results for TRIS (14).

Early in April 1977, the Commission completed its final report (15) on its subchronic dermal and oral ingestion studies along with radioactive ^{14}C-TRIS tracer studies and human lifetime risk estimates of cancer in the human population. These will be discussed in more detail in the section of Hazard, below.

HAZARD

A. CARCINOGENICITY

The Commission has carefully reviewed the preliminary data from the National Cancer Institute on the carcinogenicity of TRIS (6). Under the NCI testing program, begun early in 1974, rats and mice were fed TRIS daily at two dose levels. Weanling animals of both sexes were placed on diets containing 50 (low dose) or 100 (high dose) ppm TRIS in the case of rats; 500 (low dose) or 1,000 (high dose) ppm TRIS in the case of mice; or no TRIS (control animals). After two years the surviving animals were sacrificed and examined for pathological changes.

The test mice that were fed TRIS developed tumors in the liver, the kidney, the lung and the stomach and the test rats developed tumors in the kidneys (preliminary Table II in (6)). These test data establish TRIS as an animal carcinogen in two species and at multiple sites.

The Commission has no conclusive data that establish that TRIS has caused cancer in humans. Since cancers develop over many years and cannot be easily linked to particular causes, this is not unexpected. The Commission's Office of the Medical Director (OMD) believes that once a substance is established as an animal carcinogen it can never be assured as a safe substance for human exposure (16). In addition, OMD believes that all known human carcinogens have been shown to be carcinogenic in laboratory animals (16, 17).

Dr. Marvin Schneiderman of NCI has told the Commission that he knows of no chemicals that provide a high risk to animals but no risk to humans (pp. 43-44 of (10)). The February 1977 EDF petition asserts that TRIS is as potent or more potent in animals than a number of known human carcinogens (pp. 13-13a of (8)). Research Associate N. Kim Hooper and Professor Bruce N. Ames of the University of California, Berkeley's Department of Biochemistry, have stated in a March 21, 1977 letter to Chairman Simpson (18) that TRIS is a more potent carcinogen than the human carcinogen benzidine or β-naphthylamine (p. 3 of (18)).

In a June 2, 1976 report, (19), the National Cancer Advisory Board states "A major source of data on carcinogenicity comes from bioassays in experimental animals. Experience has indicated that, with one or two possible exceptions, compounds that are carcinogenic in humans are also carcinogenic in one or more experimental animal bioassay systems. In addition, several compounds first detected as carcinogens in experimental animals were later found to cause human cancer. Demonstration that a compound is carcinogenic in animals should, therefore, be considered evidence that it is likely to be carcinogenic in humans, unless there is strong evidence in humans to the contrary." (See also p. 11 of (3).)

B. MUTAGENICITY

The Commission has received several reports on the mutagenic potential of TRIS. Hooper and Ames (pp. 1 and 2 of (18)) focus on bacterial systems utilizing various grades of TRIS and TRIS-treated cloth. They also point out that

TRIS is a potent mutagen in Drosophila, causing large numbers of recessive lethal mutations in offspring. Moreover, they assert that TRIS is capable of causing damage to DNA synthesis in human cells in tissue culture.

The general assertion of Hooper and Ames is that TRIS is mutagenic and "likely to cause genetic birth defects in the offspring of children exposed to it" (p. 1 of (*18*)). They base this conclusion on their belief that TRIS can be absorbed through the scrotum and could effect spermatogenesis.

Dr. M. Prival, in an article entitled, "Tris (2,3-Dibromopropyl) Phosphate: Mutagenicity of a Widely Used Flame Retardant" (*20*), has found TRIS to be mutagenic in histidine-requiring strains of Salmonella typhimurium (although he does not believe his results conclusively demonstrate that TRIS is a carcinogen).

It must be noted that the BBS analysis of bone marrow chromosomes obtained from rats which received either a single or multiple daily oral dose of TRIS five days per week for 13 weeks did not demonstrate any chromosome aberrations (*15*).

C. EXPOSURE

TRIS is incorporated into some wearing apparel in at least two ways, according to information obtained by the Commission's Bureau of Engineering Sciences (*21*). Certain wearing apparel is manufactured from fabric knitted or woven from fibers that contain TRIS. Other apparel is manufactured from fabric that has been topically treated with TRIS. In both cases, some TRIS that is not tightly bound or contained within the fibers can be removed from the garment by the sucking, or "mouthing," of an infant on the sleeve or other portion of the garment. The TRIS that infants can ingest in this manner is a source of exposure of infants to TRIS. Another source of exposure is absorption through the skin.

The Commission has reviewed various estimates of the amount of TRIS to which a child may be exposed. These estimates come from a March 16, 1977, report prepared by the Bureau of Biomedical Science (*22*); from a March 8, 1977 report by Robert H. Harris, Ph. D., of EDF, entitled Estimating the Cancer Hazard to Children From Tris-treated Sleepwear (*23*); and from the March 21 Hooper and Ames letter (*18*). The general assumptions underlying all of these estimates are (a) that a child mouths the garment and ingests available TRIS; (b) that there is absorption through the skin; and (c) that the child wears numerous garments over a period of time containing various amounts of available TRIS.

(1) *Bureau of Biomedical Science.* BBS has prepared a range of estimates on the amount of TRIS to which a child could be exposed over a 6-year period, both from skin absorption and from mouthing. Their estimates of total TRIS absorbed ranged from 2.5 to 77.4 mg/kg, depending upon the body area exposed to TRIS-treated garments.

In the Commission's subchronic toxicity and dermal penetration studies, the groups of rats which received daily doses of TRIS by the oral route (25 mg/kg and 250 mg/kg) demonstrated renal nephrosis following a 13 week period. The weekly dermal application of 1 ml/kg of undiluted TRIS to clipped rabbits produced renal nephrosis and testicular atrophy also at the end of a 13 week period. This data correlates well with NCI's finding of renal carcinoma in rats and mice at a 2-year period.

The degree of penetration of TRIS in rabbit and rat of both sexes was determined following dermal application of ^{14}C-TRIS at 0.9 ml/kg and at 0.05 ml/kg. Radiolabeled TRIS from TRIS-treated cloth was also shown to penetrate the skins of rabbits. Penetration was enhanced by the presence of urine on the cloth. The kidney was found to be the organ of highest specific radioactivity in all cases. Most of the absorbed radiolabeled TRIS was excreted in the urine (for more detail see (*15*)).

(2) *Environmental Defense Fund.* EDF estimates of the total lifetime exposure for a child range between .085 mg/kg to 85 mg/kg (p. 15 of (*23*)) and are based primarily upon dermal absorption for a 10 or 20 kg child exposed to one, ten or 20 pairs of TRIS treated sleepwear.

(3) *Hooper and Ames.* Based on one year of exposure of a 7 kg child, Ames and Hooper estimate that the exposure due to dermal absorption would be 70 mg/kg/year and the dose a child receives by sucking is estimated as one percent of that obtained through skin absorption (*18*).

D. RISK ASSESSMENT

The Commission has considered risk assessments that are based on the estimates of exposure cited in Section C, above. The methods used to prepare the estimates are described in a March 1977 paper entitled, Estimates of Human Lifetime Carcinogenic Risk From Exposure to TRIS, prepared by Drs. Charles Brown, Marvin Schneiderman, and Kenneth Chu of the National Cancer Institute (*24*). The statistical extrapolations are based on the use of two mathematical models: The single-hit model (linear no threshold) and the log-probit model (Mantel-Bryan). The use of these mathematical models and the extrapolations from animals to man rest on the following assumptions: (a) the animal dose can be converted to an "equivalent" human exposure level; (b) mouse and man, and rat and man, have equal sensitivities to TRIS; (c) infants and children are no more, or less, sensitive to TRIS than are adults; and (d) the dose given to an animal during its entire life can be converted to an equivalent daily dose during a specific period of time which is less than a lifetime.

(1) *Bureau of Biomedical Science.* BBS has projected cancer incidence rates based on its exposure estimates and on data from the NCI study. These projected rates show the kidney to be the primary target organ. The best estimates of SBS (25) is approximately 300 kidney cancers per million male population. For females the projected rate is about one-fifth that of males.

Based on the single hit model the BBS estimates for lifetime risk of cancer of the kidney is between 60 and 1,800 cases per million male population. For the log probit model the estimates range from 25 to 5,100 cases per million males. All of these estimates are lifetime risk or lifetime incidence estimates.

(2) *Environmental Defense Fund.* EDF also provided its estimates on human exposure to NCI which used the same models, and these data provided estimates of a lifetime incidence of cancer of as high as 6,000 per million male population, based on maximum exposure, the rat kidney and the log probit model.

(3) *Hooper and Ames.* Hooper and Ames estimate that for one year of exposure, 1.7 percent of the children would develop cancer (17,000 cases/million). An exposure throughout childhood would give a higher risk (p. 8 of (*18*)).

E. EFFECT OF WASHING

There is evidence both from the March 1976 EDF petition (*1*) and from reports of the Commission's Bureau of Engineering Sciences (*21*) that the amount of TRIS that can be easily removed from a garment is appreciably reduced by repeated washings. The March 1976 petition states at page 5 that "* * * most of the surface TRIS could be washed out of the fabrics, which implies that laundering in use will reduce exposure to TRIS. For example, two samples of different polyester fabric had 70,000 ppm and 37,500 ppm of surface TRIS before, and 35 ppm and 100 ppm of surface TRIS after washing, respectively. It would appear from these studies that during the first three washings of polyester fabrics, surface TRIS can be reduced by greater than 95%, while the total amount in the fabric will be reduced by only about 12%." (The fabric containing 70,000 ppm had been specifically treated for test purposes and has not been commercially marketed.)

According to the BBS review of literature data, acetate fabrics contain 65–600 ppm "surface TRIS"[1] (more uniform and lower concentrations than polyester) and polyester fabrics contain 260–37,500 ppm surface TRIS. Although BES stresses the limited reliability of these figures, estimates from the studies show that washing removes up to 85 percent of surface concentration in acetate fabrics and from 21 to 82 percent in polyester fabrics.

F. EFFECT ON FLAMMABILITY INJURIES

Much of the use of TRIS in wearing apparel is to meet the Commission's flammability standards for children's sleepwear (16 CFR Parts 1615 and 1616). The Commission's Bureau of Epidemiology (BEP) believes, based on an analysis of injury information and on an article on children treated by physicians,

[1] The term "surface TRIS" is merely one of convenience. Whether or not the easily removable TRIS is literally on the surface of the fibers is unknown. The more fundamental distinction would appear to be between that amount of TRIS that is loosely bound to fibers and that which is more tightly bound, wherever it may be.

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that children who are burned while wearing flame-resistant sleepwear tend to sustain less extensive burns than children who are burned while wearing non-flame-resistant sleepwear (26). Data indicate that the number of deaths to children ages 1–4 due to clothing ignition decreased following the effective date of the standard for children's sleepwear in sizes 0–6X.

Because the Commission's flammability standards for children's sleepwear are performance standards, the Commission assumes that manufacturers can and will comply with the standard without using TRIS or any other chemical which presents a hazard to the consumer. There are fabrics which meet the standard without using any chemical flame retardants (27).

Marketing Factors

Garments treated with TRIS are made of either 100 percent polyester or acetate and triacetate blends. There is no certain way to distinguish among 100 percent polyester fabrics that are untreated, treated with TRIS, or treated with another flame retardant. The Commission understands, however, that all acetate and triacetate fibers used in children's sleepwear fabrics contain TRIS.

The Commission has found that flame resistant garments currently on the market are: (a) children's sleepwear, sizes 0–14, for which the flame resistant requirement is mandatory, and (b) those which resulted from voluntary programs undertaken by a few major retailers. The Commission believes that there is no significant inventory of flame-resistant garments resulting from voluntary program at this time (p. 4 of (27)).

The Commission's Bureau of Economic Analysis (BEA), in a March 21, 1977 report (28) has estimated that 18 million garments, over one-third of the spring 1977 production of children's sleepwear, contain TRIS. If inventories are taken into account, the portion of TRIS-treated merchandise would be over 40% of all children's sleepwear in the retail pipeline, or about 20 million garments. About 10–20 percent of this has already been sold to consumers. In addition, BEA has estimated that about 7 million square yards of TRIS-treated fabric is in inventory with fabric and garment producers.

BEA believes that a small number of national retail chain outlets and very large discount stores account for more than 55 percent of children's sleepwear sales, while department stores account for 20 percent, and specialty and variety stores account for less than 10 percent of annual sales.

Environmental Impact

The Commission has considered the potential environmental impacts of its interpretation that TRIS-treated wearing apparel is a banned hazardous substance. A preliminary environmental assessment is available (29) and a final assessment will be available as soon as possible. The Commission has investigated anticipated impacts relating to chemical flame-retardants that will be used as substitutes for TRIS, relating to substitute end-use products, and relating to the disposal of garments, fabrics, fibers, or yarns treated with TRIS, as well as the anticipated economic impacts.

Based on the information that is available thus far, it appears that there will be no significant effect on the human environment resulting for disposal of TRIS-treated garments, fabrics, fibers, or yarns. While more information is needed on the potential impacts from the use of substitute chemical flame-retardants and substitute end-use products, the Commission knows of no significant effects in this area at this time.

Because of the emergency circumstances of the ban on TRIS-treated children's wearing apparel, the Commission has been in contact with the Council on Environmental Quality (CEQ) concerning alternative arrangements for complying with the CEQ guidelines on the National Environmental Policy Act (30). As of this date, the Commission's staff has received oral CEQ concurrence with this approach.

References

The parenthetical numbers used in the above portion of the preamble refer to the following documents, studies, and other materials:

(1) March 24, 1976 petition (NP 76-10) from the Environmental Defense Fund.

(2) Letter from Dieon E. Schweitzer, Director, Office of Toxic Substances, EPA to Stanley R. Parent, Executive Director, CPSC, October 21, 1976, and a similar letter to Dr David Rall, Director, NIEHS, on the same date.

(3) Ames, B., in a letter to Dr. B. L. Van Duuren, New York University Medical Center, January 26, 1976.

(4) November 8, 1976 letter from Chairman B. John Byington to Frank J. Rauscher, Ph. D., Director of the National Cancer Program of NIH.

(5) December 3, 1976 letter from Robert A. Squire, D.V.M., Ph. D., Acting Chief of the Carcinogen Bioassay and Program Resources Branch at NIH, to Chairman Byington.

(6) Preliminary NCI data on TRIS bioassay feeding studies.

(7) Memo from R. M. Hehir to Don Clay on February 16, 1977 entitled "BBS Statistical Analysis of NCI Cancer Bioassay Report on TRIS (2,3-dibromopropyl) phosphate, with attachments.

(8) February 8, 1977 petition (NP 77-8) from the Environmental Defense Fund.

(9) Transcript of February 16, 1977 meeting between Commission staff and EDF representatives.

(10) Transcript of March 2, 1977 Commission meeting with Dr. Schneiderman, NCI.

(11) Transcript of March 8, 1977 Commission meeting with EDP representatives.

(12) February 1, 1977 petition (FP 77-1) from Ms. Joanne Seigel and Dr. Reuben Epstein.

(13) Transcript of Proceedings—National Institute of Health Meeting of Data Evaluation and Risk Assessment Subgroups of the Clearinghouse on Environmental Carcinogens—March 25, 1977.

(14) March 26, 1977 memorandum from R. M. Hehir to Michael Brown and attached meeting log.

(15) Final Report—Subchronic and Radioactive ^{14}C Tracer Studies of TRIS (2,3-dibromopropyl) phosphate in Laboratory Rodents, prepared by Bureau of Biomedical Science/CPSC, April 1, 1977.

(16) February 18, 1977 memorandum from Albert P. Esch, Medical Director, on extrapolation of risk from animals to humans.

(17) February 18, 1977 memorandum from Rita A. Orrel, Ph. D., of the Commission's Division of Human Toxicology and Pharmacology in OMD, same subject as 16 above.

(18) March 21, 1977 letter from Hooper and Ames on hazards of carcinogenicity and mutagenicity to humans through dermal absorption and ingestion of TRIS.

(19) June 2, 1976 National Cancer Advisory Board report.

(20) "TRIS (2,3-dibromopropyl) phosphate: Mutagenicity of a Widely Used Flame Retardant," Vol 195, (pp. 76–78) Jan. 7, 1977, by Drs. Michael J. Prival, Elena C. McCoy, Beratel Gutter and Herbert B. Rosenkranz.

(21) March 15, 1977 memorandum from Margaret Neily, BES entitled "Review of Literature on Availability of TBPP from Treated Fabrics."

(22) March 16, 1977 memo from BBS entitled "Chemical Availability of Tris (2,3-dibromopropyl) phosphate (TBPP) and Dermal and Oral Absorption Models for Three Possible Use Patterns".

(23) March 8, 1977 Harris report entitled "Estimating the Cancer Hazard to Children from Tris-treated Sleepwear."

(24) March 1977 Brown, Schneiderman, Chu paper entitled "Estimates of Human Lifetime Carcinogenic Risk from Exposure to Tris."

(25) March 17, 1977 Bayard to Hehir memo entitled "Preliminary Analysis of Tris Induced Human Lifetime Risk to Cancer."

(26) June 1976 BEP report on sleepwear entitled "Tris and Children's Sleepwear."

(27) February 25, 1977 memorandum of James Sharman, DEX, with attached marketing study.

(28) March 1, 1977 BEA report entitled "Availability of Darmenta Treated with TBPP."

(29) Preliminary environmental assessment of a TBPP ban prepared by BEA.

(30) April 5, 1977 letter to CEQ Acting General Counsel David Sunderman.

Statutory Findings

Section 2(f)(1)(A) of the Federal Hazardous Substances Act (15 U.S.C. 1261 (f)(1)(A)) defines "hazardous substance" as "any substance or mixture of substances which is toxic * * * If such substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children." Section 2(g) of the FHSA (15 U.S.C. 1261(g)) states that "(t)he term 'toxic' shall apply to any substance * * * which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface."

Section 2(q)(1)(A) of the FHSA (15 U.S.C. 1261(q)(1)(A)) defines "banned hazardous substance" as "any toy, or other article intended for use by children, which is a hazardous substance, or which bears or contains a hazardous

substance in such manner as to be susceptible of access by a child to whom such toy or other article is entrusted." If a product is a banned hazardous substance, it is prohibited from interstate commerce by section 4 of the FHSA (15 U.S.C. 1263). Seizures of banned hazardous substances in interstate commerce are authorized by section 6 of the FHSA (15 U.S.C. 1265). Sections 5 and 8 (15 U.S.C. 1264 and 1267) authorize the Commission to seek injunctions or criminal penalties against persons who violate the prohibitions listed in section 4 of the FHSA.

Section 15 of the FHSA (15 U.S.C. 1274) requires the automatic repurchase of banned hazardous substances. Manufacturers (including importers for resale) must repurchase from their purchasers. Distributors must repurchase from their purchasers. Dealers who sold at retail must repurchase from any person who returns the items to them. In every case, a refund of the purchase price must be made in addition to the payment of certain expenses incurred in returning the item(s). However, a recently-issued Commission regulation permits replacement or repair of banned items instead of repurchase, at the option of the owner (16 CFR 1500.203). The Commission's other regulation concerning FHSA repurchase requires that retailers place signs in their establishments informing customers of the repurchase (see 16 CFR 1500.202).

The Commission finds that children's wearing apparel containing TRIS that is currently in interstate commerce or will be introduced into interstate commerce in the future is a banned hazardous substance according to these applicable provisions of the FHSA. In addition, any children's wearing apparel containing TRIS that has not been washed, even if it has already been sold, is also banned as hazardous. Such wearing apparel is toxic and presents a substantial risk of cancer as a result of its foreseeable absorption through the skin and ingestion by mouthing. It is also of course intended for use by children.

The Commission believes that children's wearing apparel containing TRIS that is already in the hands of consumers and has been washed does not present a substantial risk of personal injury or illness. After children's wearing apparel containing TRIS is bought, worn, and washed, the risk decreases. As noted above, a few washings remove as much as 95 percent of the TRIS that can be absorbed or ingested. In addition it would be relatively easy for consumers to be sure that their children's apparel is washed a few times before it is worn. In fact, the Commission assumes that most of the apparel that consumers now own has already been washed one or more times.

The Commission believes that the available test data and analyses support a withdrawal of TRIS-treated children's wearing apparel from commerce but not a recall of such apparel that has already been sold to consumers and washed by them. Children's wearing apparel containing TRIS that is in interstate commerce on April 6, 1977 or that is introduced into interstate commerce after that date is banned. Such unwashed, brand-new apparel presents a substantial risk and the Commission's interpretation prohibits the sale of such apparel to consumers.

In addition, the Commission believes that uncut fabric containing TRIS sold at retail, if consumers make it into wearing apparel, presents the same risk of illness as wearing apparel containing TRIS that is sold at retail. The scope of this interpretation accordingly includes such uncut fabric.

The Commission also believes that wearing apparel that is merely sewn with thread containing TRIS does not present a substantial risk of illness. The scope of this interpretation thus includes only wearing apparel made from fabric containing TRIS.

The Administrative Procedure Act imposes requirements on agencies for notice of proposed rulemaking, opportunity for public participation, and a delayed effective date (5 U.S.C. 553). However, these requirements are not applicable to interpretive rules or general statements of policy and are therefore not applicable to the interpretation announced in this document. Even if the rules were to be considered general rulemaking, the Commission for good cause finds that notice and public comment and a delayed effective date are contrary to the public interest because the statutory intent and structure of the FHSA is that children's articles that present a substantial risk of illness based on their toxicity must be banned without any delay. As the legislative history states, "[t]oys or other articles intended for use by children which bear or contain a hazardous substance are banned by the language of the bill itself . . ." (Senate Report No. 1551, 89th Cong., 2d Sess., page 2).

Commission Action on Petitions

The Commission has interpreted the section 2(g)(1)(A) banning provision of the FHSA to apply to children's wearing apparel containing TRIS. Although this is not a rulemaking action, it provides a remedy that satisfies a major portion of the EDF's February 1977 petition (HP 77-8). In fact, the EDP urged the Commission, in a February 16, 1977 letter that followed the submission of its petition, to utilize the section 2(g)(1)(A) provision. The Commission's action similarly supersedes a major portion of the EDF's March 1976 petition (HP 76-10) which requested precautionary labeling for wearing apparel containing TRIS in specified amounts. The Commission believes that little or no wearing apparel containing TRIS, other than children's wearing apparel, is currently in interstate commerce or would be introduced into interstate commerce in the future.

The petition from Ms. Siegel and Dr. Epstein (FP 77-1) requests regulatory action under the Flammable Fabrics Act to address the hazard presented by children's sleepwear in sizes 0-6X containing TRIS. The Commission believes that it has granted this petition by interpreting section 2(q)(1)(A) as banning children's wearing apparel containing TRIS.

Portions of the EDF's February 1977 petition make requests that concern the use of flame retardants other than TRIS in wearing apparel. Specifically, the petition asserts that tetrakis (hydroxymethyl) phosphonium chloride (THPC) and Pyroset TKP may be hazardous. In addition, the petition seeks the following labeling for wearing apparel for which industry has not investigated the health effects: "[T]he toxic properties of the flame retardant chemical(s) used in this product have not been evaluated."

Although the Commission does not currently know which chemicals, if any, are hazardous, a labeling requirement under section 27(e) of the CPSA is under consideration by the Commission. The Commission will consider this portion of the February 1977 EDF petition as a petition under the Administrative Procedure Act to initiate a proceeding for a section 27(e) rule.

Accordingly, pursuant to provisions of the Federal Hazardous Substances Act (secs. 2(f)(1)(A), (g), (q)(1)(A) and 10(a), 74 Stat. 372, 374, as amended 80 Stat. 1305; 15 U.S.C. 1261(f)(1)(A), (g), (q)(1)(A), 1269(a)) and under authority vested in the Consumer Product Safety Commission by the Consumer Product Safety Act (sec. 30(a), 86 Stat. 1231; 15 U.S.C. 2079(a)), the Commission proposes to amend 16 CFR Part 1500.18 by adding a new subsection (d) as follows:

§ 1500.18 Banned toys and other banned articles intended for use by children.

. . . . . .

(c) [Reserved]

(d) *Toys and other children's articles presenting toxicity hazards.* Under the authority of sections 2(f)(1)(A), 2(g), 2(q)(1)(A), and 10(a) of the act, the Commission has declared that the following articles are banned hazardous substances because they are toys or other articles intended for use by children that are hazardous substances, or bear or contain hazardous substances in such manner as to be susceptible of access by a child to whom they are entrusted, based on the fact that they may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children, because of their toxicity:

(1) Children's wearing apparel made from fabric which contains TRIS (2,3-dibromoprophyl) phosphate and which is in interstate commerce on April 8, 1977 or which is introduced into interstate commerce after that date or which has not yet been washed (even if it has been sold before that date); and

(2) Uncut fabric, intended for sale to consumers for use in children's wearing apparel, which contains TRIS (2,3-dibromoprophyl) phosphate and which is in interstate commerce on April 8, 1977 or which is introduced into interstate commerce after that date or which has not yet been washed (even if it has been sold before that date).

Dated: April 7, 1977.

SADYE E. DUNN,
Secretary, Consumer Product Safety Commission.

[FR Doc.77-10616 Filed 4-7-77;12:46 pm]

GPO 913-978

PART 1500—HAZARDOUS SUBSTANCES AND ARTICLES ADMINISTRATION AND ENFORCEMENT REGULATIONS

TRIS and Fabric, Yarn, or Fiber Containing TRIS; Additional Interpretations as Banned Hazardous Substances

AGENCY: Consumer Product Safety Commission.

ACTION: Additional banning interpretations of a statutory provision.

SUMMARY: On April 8, 1977 the Commission banned certain children's wearing apparel containing the chemical flame retardant TRIS and certain uncut fabric containing TRIS which is intended for sale to consumers for use in children's wearing apparel. A federal district court judge ruled on May 2, 1977 that the Commission must also ban certain fabric, yarn, and fiber containing TRIS and TRIS itself which is used in or intended for use in children's wearing apparel. In this document the Commission is complying with that court order.

DATES: The new banning interpretations are effective on May 5, 1977.

FOR FURTHER INFORMATION CONTACT:

Robert Poth, Bureau of Compliance, Consumer Product Safety Commission, Washington, D.C. 20207. (301–492–6400).

SUPPLEMENTARY INFORMATION: On April 8, 1977, the Commission published in the FEDERAL REGISTER 142 FR 18850–54, corrected at 42 FR 20479–80, April 20, 1977, and 42 FR 21274, April 28, 1977) a statutory interpretation that the following are "banned hazardous substances" under section 2(q)(1)(A) of the Federal Hazardous Substances Act (FHSA, 15 U.S.C. 1281(q)(1)(A)):

(1) Children's wearing apparel made from fabric which contains TRIS (2,3-dibromopropyl)phosphate and which is in interstate commerce on April 8, 1977 or which is introduced into interstate commerce after that date or which has not yet been washed (even if it has been sold before that date); and

(2) Uncut fabric, intended for sale to consumers for use in children's wearing apparel, which contains TRIS (2,3-dibromopropyl) phosphate and which is in interstate commerce on April 8, 1977, or which is introduced into interstate commerce after that date or which has not yet been washed (even if it has been sold before that date).

The Commission considered the carcinogenicity and mutagenicity hazards presented by these products, as well as other factors, before issuing its banning order. The bans, issued as amendments to 16 CFR 1500.18, and the underlying data are discussed in full in the April 8 FEDERAL REGISTER publication.

As a result of litigation relating to the Commission's bans of TRIS-treated products, U.S. District Judge George L. Hart, Jr. issued the following order on May 3, 1977:

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

[Civil Action No. 77-682]

AMERICAN APPAREL MANUFACTURERS ASSOCIATION, PLAINTIFF, v. CONSUMER PRODUCT SAFETY COMMISSION, ET AL., DEFENDANTS

Order

This matter having come on for hearing on the motion of American Apparel Manufacturers Association for a preliminary injunction and upon consideration of the points and authorities and affidavits in support and opposition thereto filed by the parties and intervenors herein and of the argument of counsel in open court and the entire record herein;

And it appearing that the Court has jurisdiction for the purposes of this motion over the subject matter in this action and the parties thereto;

And it appearing that the United States Consumer Product Safety Commission ("Commission") acted arbitrarily and capriciously in too narrowly defining the "banned hazardous substances" in its April 8, 1977 ban on the sale of certain TRIS-treated wearing apparel and fabric in such a way as to unfairly place virtually the entire economic burden resulting from the ban upon manufacturers of children's wearing apparel;

And it further appearing that section 2(q)(1)(A) of the Federal Hazardous Substances Act, 15 U.S.C. 1261(q)(1)(A), does not limit the jurisdiction of the Commission to finished products in the form sold at retail; and that the Commission has the authority and duty to redefine "banned hazardous substance" to include TRIS, and fabric, yarn, or fiber containing TRIS, which is used or intended for use in children's wearing apparel, whether the fabric, yarn, or fiber is cut, uncut, or already incorporated in children's wearing apparel; it is by the Court this 3d day of May 1977,

Ordered: that, consistent with the foregoing, the Commission add to its April 8, 1977, order within 10 days from the date of this Order by including two additional categories of banned hazardous substances:

(3) All fabric, yarn or fiber which contains TRIS (2,3-dibromopropyl) phosphate and which is used or intended for use in children's wearing apparel (whether the fabric, yarn, or fiber is cut, uncut, or already incorporated in children's wearing apparel) and which is in interstate commerce on April 8, 1977, or which is introduced into interstate commerce after that date, or which has not yet been washed (even if it has been sold before that date);

(4) All TRIS (2,3-dibromopropyl) phosphate which is used or intended for use in children's wearing apparel and which is in interstate commerce on April 8, 1977, or which is introduced into interstate commerce after that date or which is in such apparel which is unwashed and is in the hands of consumers.

If any provision of the April 8, 1977, order or this addition, or the application of such provision to any person or circumstance, shall be held invalid, no other provision of the April 8, 1977, order, or this addition thereto, shall be effected thereby; and

It is further ordered: That, the Commission enforce section 15 of the Federal Hazardous Substances Act, 15 U.S.C. 1274, in accordance with the above revised definition of "banned hazardous substance" and in accordance with the intent of section 15 that the duty of each party in the distributive chain to repurchase the banned hazardous substance is limited to the making of a refund of the purchase price actually paid to that party by its immediate customer (together with reimbursement of certain expenses incurred in returning the product, as provided in section 15); and

It is further ordered, That unless the Commission acts within 10 days from the date of this Order to revise its order of April 8, 1977, consistent with this Order, further enforcement of the repurchase provisions of the Federal Hazardous Substances Act, 15 U.S.C. 1274, with respect to the April 8, 1977 order of the Commission will be and hereby is enjoined until the Commission complies with the findings of this Court.

GEORGE L. HART, JR.,
United States District Judge.

Accordingly, pursuant to the above Court order and pursuant to provisions of the Federal Hazardous Substances Act (sections 2 (f)(1)(A), (g), 1q)1)(A) and 10(a), 74 Stat. 372, 374, as amended 80 Stat. 1305; 15 U.S.C. 1281 (f)(1)(A), 1g), (q)(1)(A), 1289(a)) and under authority vested in the Consumer Product Safety Commission by the Consumer Product Safety Act (section 30(a), 86 State. 1231; 15 U.S.C. 2079(a)), the Commission amends 16 CFR 1500.18(d) by adding the following:

§ 1500.18 Banned toys and other banned articles intended for use by children.

• • • • •

(c) [Reserved].

(d) *Toys and other children's articles presenting toxicity hazards.* Under the authority of sections 2(f)(1)(A), 2(g), 2(q)(1)1A), and 10(a) of the act, the Commission has declared that the following articles are banned hazardous substances because they are toys or other articles intended for use by children that are hazardous substances, or bear or contain hazardous substances in such manner as to be susceptible of access by a child to whom they are entrusted, based on the fact that they may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children, because of their toxicity:

• • • • •

(3) All fabric, yarn or fiber which contains TRIS (2,3-dibromopropyl) phosphate and which is used or intended for use in children's wearing apparel (whether the fabric, yarn, or fiber is cut, uncut, or already incorporated in children's wearing apparel) and which is in interstate commerce on April 8, 1977, or which is introduced into interstate commerce after that date, or which has not yet been washed (even if it has been sold before that date);

(4) All TRIS (2,3-dibromopropyl) phosphate which is used or intended to be used in children's wearing apparel and which is in interstate commerce on April 8, 1977, or which is introduced into interstate commerce after that date or which is in such apparel which is unwashed and is in the hands of consumers. If any provision of the April 8, 1977, order or this addition, or the application of such provision to any person or circumstance, shall be held invalid, no other provision of the April 8, 1977 order, or this addition thereto, shall be affected thereby.

Dated: May 3, 1977.

SADYE E. DUNN,
Secretary, Consumer Product Safety Commission.

[FR Doc.77-13008 Filed 5-3-77;3:36 pm]

Title 16—Commercial Practices

CHAPTER II—CONSUMER PRODUCT SAFETY COMMISSION

PART 1500—HAZARDOUS SUBSTANCES AND ARTICLES; ADMINSTRATION AND ENFORCEMENT REGULATIONS

TRIS and Fabric, Yarn, or Fiber Containing TRIS; Additional Interpretations as Banned Hazardous Substances

AGENCY: Consumer Product Safety Commission.

ACTION: Additional banning interpretations of a statutory provision.

SUMMARY: On April 8, 1977, the Commission banned certain children's wearing apparel containing the chemical flame retardant TRIS and certain uncut fabric containing TRIS which is intended for sale to consumers for use in children's wearing apparel. On May 5, 1977, pursuant to an order of a Federal district court judge, the Commission also banned certain fabric, yarn, and fiber containing TRIS and TRIS itself which is used in or intended for use in children's wearing apparel. In this document the Commission is reissuing, under its own statutory authority rather than pursuant to the court order, its expanded ban of May 5, 1977.

DATES: The new banning interpretations are effective on June 1, 1977.

FOR FURTHER INFORMATION CONTACT:

Alan Shakin, Office of the General Counsel, Consumer Product Safety Commission, Washington, D.C. 20207 (202–634–7770).

SUPPLEMENTARY INFORMATION: On April 7, 1977, the Commission granted a petition from the Environmental Defense Fund concerning wearing apparel containing the chemical flame retardant Tris 12,3-dibrompropyl phosphate ("TRIS"). The Commission published in the FEDERAL REGISTER on April 8 (42 FR 18350–51) an interpretation that certain TRIS-treated children's wearing apparel and certain TRIS-treated uncut fabric intended for sale to consumers for use in such apparel were banned hazardous substances under section 2(q)(1)(A) of the Federal Hazardous Substances Act (FHSA).

The apparel and fabric that was in interstate commerce on April 8 or introduced after that date was banned. In addition, such TRIS-treated apparel and fabric sold to consumers before April 8 but not yet washed was also banned.

On April 20, 1977, the American Apparel Manufacturing Association (AAMA) filed an action against the Commission in U.S. District Court for the District of Columbia. (The Commission had met with representatives of AAMA on March 31, 1977, to discuss economic and other factors relating to potential Commission action on TRIS). AAMA was seeking an order that would ban TRIS-treated fabric, fiber, and yarn that is already incorporated or intended to be incorporated into children's wearing apparel. A ban defined in this manner would require manufacturers of such TRIS-treated fabric, fiber, and yarn to repurchase the items from their customers under section 15 of the FHSA.

On April 22, 1977, representatives of the Independent Cutters and Sewers of Children's Sleepwear met with the Commission and submitted a petition to reconsider the form of the Commission's April 8 ban. The Commission believes that the ban issued below constitutes a granting of that petition. In addition, the EDF made a similar request in an April 26 letter to the Commission.

U.S. District Judge George L. Hart, on May 3, 1977, entered an order finding that the Commission acted arbitrarily and capriciously in limiting its April 8 band such that the full economic burden of the ban fell only on retailers and garment manufacturers. The court enjoined the Commission from enforcing the FHSA repurchase provisions against products banned on April 8 unless it expanded the scope of that ban within 10 days. Pursuant to Judge Hart's order, the Commission published in the FEDERAL REGISTER of May 5 (42 FR 22878–79) a ban which added to its ban of April 8.

The May 5 ban classified two additional categories of TRIS products as banned hazardous substances: (a) TRIS-treated fabric, yarn, and fiber which is used or intended for use in children's wearing apparel and (b) TRIS used or intended for use in children's wearing apparel. In both cases, those products sold before April 8 and already washed for contained in wearing apparel that has already been washed) were not within the scope of the ban.

The additional categories of TRIS products did not ban any additional product sold to consumers. Rather, the expanded ban required additional manufacturers to repurchase the TRIS-treated wearing apparel and fabric that were banned on April 8.

On May 13 the U.S. Court of Appeals for the District of Columbia stayed Judge Hart's order and the Commission's May 5 ban. On May 19 the Court of Appeals lifted the stay and vacated Judge Hart's order upon the representation of the Commission that it would take prompt and decisive action in the matter. The Commission had indicated to the Court that it would expand the ban pursuant to its own authority rather than pursuant to Judge Hart's May 3 order, as the Commission did on May 5. The ban issued below constitutes the action that the Commission indicated it would take.

On May 23, in an action filed in the U.S. District Court for South Carolina by Springs Mills, a textile manufacturer, Judge Robert F. Chapman entered a preliminary injunction. The injunction restrains the Commission from applying or enforcing its TRIS regulations against Springs Mills, Inc., or against any TRIS-treated fabrics, yarns, or fibers manufactured by Springs Mills.

HAZARD

A. BACKGROUND

In March 1976 the Environmental Defense Fund (EDF), a health-oriented public interest organization, petitioned the Commission to require cautionary labeling for wearing apparel containing TRIS in surface concentrations in excess of 100 parts per million (ppm). This petition (HP 76–10) was based on data that showed that TRIS was capable of inducing mutations in Salmonella typhimurium when tested in both the presence and absence of metabolic activating systems (1, 2, 3).[1] The petition asserted at page 10 that this test has been shown to be a "highly reliable predictor" of carcinogenicity.

The Commission conducted a search of the existing literature in April 1976, and initiated a biological testing program in its own laboratories in June 1976 to evaluate the scientific issues raised in the petition. In addition, the Commission asked the National Cancer Institute (NCI) to expedite its rat and mouse carcinogenicity feeding studies involving TRIS that were already underway (4). The NCI agreed to provide the Commission with preliminary results from these studies as they became available (5).

On February 4, 1977 the Commission obtained the preliminary NCI test data (6). Within two weeks, the Commission's Bureau of Biomedical Science (BBSt provided a statistical analysis of the NCI rat and mouse bioassay study (7).

Based on its analysis of the same NCI preliminary test results, EDF petitioned the Commission on February 8, 1977 (HP 77–8), to ban the sale of wearing apparel containing TRIS (4). The Commission's technical staff met with Dr. Robert Harris, Dr. Joseph Highland, and Mr. Robert Rauch of EDF on February 18 to discuss this petition.

On March 2, the Commission met with Dr. Marvin Schneiderman, an Associate Director of the National Cancer Institute, and on March 8 the Commission met with the same EDF representatives that had met with the staff. All of these meetings were open to the public and transcripts are available (9, 10, 11).

Ms. Joanne Siegel and Dr. Reuben Epstein also petitioned the Commission, on February 1, 1977, to address the risk presented by wearing apparel containing TRIS (12). This petition (FP 77–1) requests the Commission to amend or revoke its flammability standard for children's sleepwear sizes 0–6X 116 CFR Part 1615), issued under the Flammable Fabrics Act, which has encouraged the use by manufacturers of TRIS as a flame retardant (although this standard imposes performance requirements concerning flame resistance, it neither prohibits nor requires the use of TRIS or any other chemical flame retardant).

On March 18, 1977, an updated draft of the TRIS bioassay results was released by NCI for the March 25 meetings of the

[1] The documents cited by parenthetical numbers correspond to the documents listed in the section on "References," below.

Data Evaluation and Risk Assessment Subgroups of the Clearinghouse on Environmental Carcinogens (13). These two subgroups act as statutory advisory groups to the NCI's Division of Cancer Cause and Prevention. At its March 25 meeting, the Data Evaluation Subgroup reviewed and approved the NCI bioassay results for TRIS (14).

Early in April 1977, the Commission completed its final report (15) on its subchronic dermal and oral ingestion studies along with radioactive ^{14}C-TRIS tracer studies and human lifetime risk estimates of cancer in the human population. These will be discussed in more detail in the section below.

a. CARCINOGENICITY

The Commission has carefully reviewed the preliminary data from the National Cancer Institute on the carcinogenicity of TRIS (6). Under the NCI testing program, begun early in 1974, rats and mice were fed TRIS daily at two dose levels. Weanling oilmals of both sexes were placed on diets containing 50 (low dose) or 100 (high dose) ppm TRIS in the case of rats; 500 (low dose) or 1000 (high dose) ppm TRIS in the case of mice; or no TRIS (control animals). After two years the surviving animals were sacrificed and examined for pathological changes.

The test mice that were fed TRIS developed tumors in the liver, the kidney, the lung, and the stomach and the test rats developed tumors in the kidneys (preliminary Table II in (6)). These test data establish TRIS as an animal carcinogen in two species and at multiple sites.

The Commission has no conclusive data that establish that TRIS has caused cancer in humans. Since cancers develop over many years and cannot be easily linked to particular causes, this is not unexpected. The Commission's Office of the Medical Director (OMD) believes that once a substance is established as an animal carcinogen it can never be assured as a safe substance for human exposure (16). In addition, OMD believes that all known human carcinogens have been shown to be carcinogenic in laboratory animals (16, 17).

Dr. Marvin Schneiderman of NCI has told the Commission that he knows of no chemicals that provide a high risk to animals but no risk to humans (pp. 43–44 of (18)). The February 1977 EDF petition asserts that TRIS is as potent or more potent in animals than a number of known human carcinogens (pp. 13–33a of (8)). Research Associate N. Kim Hooper and Professor Bruce N. Ames of the University of California, Berkeley's Department of Biochemistry, have stated in a March 21, 1977, letter to Chairman Byington (18) that TRIS is a more potent carcinogen than the human carcinogen benzidine or B–naphthylamine (p. 2 of (18)).

In a June 2, 1976, report, (19), the National Cancer Advisory Board states: "A major source of data on carcinogenicity comes from bioassays in experimental animals. Experience has indicated that, with one or two possible exceptions, compounds that are carcinogenic in humans are also carcinogenic in one or more experimental animal bioassay systems. In addition, several compounds first detected as carcinogens in experimental animals were later found to cause human cancer. Demonstration that a compound is carcinogenic in animals should, therefore, be considered evidence that it is likely to be carcinogenic in humans, unless there is strong evidence in humans to the contrary." (See also p. 11 of (8).)

c. MUTAGENICITY

The Commission has received several reports on the mutagenic potential of TRIS. Hooper and Ames (pp. 1 and 3 of (18)) focus on bacterial systems utilizing various grades of TRIS and TRIS-treated cloth. They also point out that TRIS is a potent mutagen in Drosophila, causing large numbers of recessive lethal mutations in offspring. Moreover, they assert that TRIS is capable of causing damage to DNA synthesis in human cells in tissue culture.

The general assertion of Hooper and Ames is that TRIS is mutagenic and "likely to cause genetic birth defects in the offspring of children exposed to it" (p. 1 of (18)). They base this conclusion on their belief that TRIS can be absorbed through the scrotum and could effect spermatogenesis.

Dr. M. Privat, in an article entitled, "Tris (2, 3-Dibromopropyl) Phosphate: Mutagenicity of a Widely Used Flame Retardant" (20), has found TRIS to be mutagenic in histidine-requiring strains of Salmonella typhimurium (although he does not believe his results conclusively demonstrate that TRIS is a carcinogen).

It must be noted that the BBS analysis of bone marrow chromosomes obtained from rats which received either a single or multiple daily oral dose of TRIS five days per week for 13 weeks did not demonstrate any chromosome aberrations (15).

d. EXPOSURE

TRIS is incorporated into some wearing apparel in at least two ways, according to information obtained by the Commission's Bureau of Engineering Sciences (21). Certain wearing apparel is manufactured from fabric knitted or woven from fibers that contain TRIS. Other apparel is manufactured from fabric that has been topically treated with TRIS. In both cases, some TRIS that is not tightly bound or contained within the fibers can be removed from the garment by the sucking, or "mouthing," of an infant on the sleeve or other portion of the garment. The TRIS that infants can ingest in this manner is a source of exposure of infants to TRIS. Another source of exposure is absorption through the skin.

The Commission has reviewed various estimates of the amount of TRIS to which a child may be exposed. These estimates come from a March 16, 1977, report prepared by the Bureau of Biomedical Science (22); from a March 9, 1977, report by Robert H. Harris, Ph. D., of EDF, entitled Estimating the Cancer Hazard to Children from Tris-treated Sleepwear (23); and from the March 21 Hooper and Ames letter (18). The general assumptions underlying all of these estimates are (a) that a child mouths the garment and ingests available TRIS; (b) that there is absorption through the skin; and (c) that the child wears numerous garments over a period of time containing various amounts of available TRIS.

(1) *Bureau of Biomedical Science.* BBS has prepared a range of estimates on the amount of TRIS to which a child could be exposed over a 6-year period, both from skin absorption and from mouthing. Their estimates of total TRIS absorbed range from 2.5 to 77.4 mg/kg, depending upon the body area exposed to TRIS-treated garments.

In the Commission's subchronic toxicity and dermal penetration studies, the groups of rats which received daily doses of TRIS by the oral route (25 mg/kg and 250 mg/kg) demonstrated renal nephrosis following a 13 week period. The weekly dermal application of 1 ml/kg of undiluted TRIS to clipped rabbits produced renal nephrosis and testicular atrophy also at the end of a 13 week period. These data correlate well with NCI's finding of renal carcinoma in rats and mice at a 2-year period.

The degree of penetration of TRIS in rabbit and rat of both sexes was determined following dermal application of ^{14}C-TRIS at 0.9 ml/kg and at 0.05 ml/kg. Radiolabeled TRIS from TRIS-treated cloth was also shown to penetrate the skins of rabbits. Penetration was enhanced by the presence of urine on the cloth. The kidney was found to be the organ of highest specific radioactivity in all cases. Most of the absorbed radiolabeled TRIS was excreted in the urine (for more detail see (15)).

(2) *Environmental Defense Fund.* EDF estimates of the total lifetime exposure for a child range between 0.085 mg/kg to 85 mg/kg (p. 15 of (23)) and are based primarily upon dermal absorption for a 10 or 20 kg child exposed to one, ten, or 20 pairs of TRIS treated sleepwear.

(3) *Hooper and Ames.* Based on one year of exposure of a 7 kg. child, Ames and Hooper estimate that the exposure due to dermal absorption would be 70 mg/kg/year and the dose a child receives by sucking is estimated as one percent of that obtained through skin absorption (18).

e. RISK ASSESSMENT

The Commission has considered risk assessments that are based on the estimates of exposure cited in Section D, above. The methods used to prepare the estimates are described in a March 1977 paper entitled, Estimates of Human Lifetime Carcinogenic Risk from Exposure to TRIS, prepared by Drs. Charles Brown, Marvin Schneiderman, and Kenneth Chu of the National Cancer Institute (24). The statistical extrapolations are based on the use of two mathematical models: the single-hit model (linear no threshold) and the log-probit model (Mantel-Bryan). The use of these

mathematical models and the extrapolations from animals to man rest on the following assumptions: (a) the animal dose can be converted to an "equivalent" human exposure level; (b) mouse and man, and rat and man, have equal sensitivities to TRIS; (c) infants and children are no more, or less, sensitive to TRIS than are adults; and (d) the dose given to an animal during its entire life can be converted to an equivalent daily dose during a specific period of time which is less than a lifetime.

(1) *Bureau of Biomedical Science.* BBS has projected cancer incidence rates based on its exposure estimates and on data from the NCI study. These projected rates show the kidney to be the primary target organ. The best estimate of BBS (25) is approximately 300 kidney cancers per million male population. For females the projected rate is about one-fifth that of males.

Based on the single hit model the BBS estimates for lifetime risk of cancer of the kidney is between 80 and 1,800 cases per million male population. For the log probit model the estimates range from 25 to 5,100 cases per million males. All of these estimates are lifetime risk or lifetime incidence estimates.

(2) *Environmental Defense Fund.* EDF also provided its estimates on human exposure to NCI which used the same models, and these data provided estimates of a lifetime incidence of cancer of as high as 6,000 per million male population, based on maximum exposure, the rat kidney and the log probit model.

(3) *Hooper and Ames.* Hooper and Ames estimate that for one year of exposure, 1.7 percent of the children would develop cancer (17,000 cases/million). An exposure throughout childhood would give a higher risk (p. 8 of (18)).

F. EFFECT OF WASHING

There is evidence both from the March 1976 EDF petition (1) and from reports of the Commission's Bureau of Engineering Sciences (21) that the amount of TRIS that can be easily removed from a garment is appreciably reduced by repeated washings. The March 1976 petition states at page 5 that "• • • most of the surface TRIS could be washed out of the fabrics, which implies that laundering in use will reduce exposure to TRIS. For example, two samples of different polyester fabric had 70,000 ppm and 37,500 ppm of surface TRIS before, and 35 ppm and 100 ppm of surface TRIS after washing, respectively. It would appear from these studies that during the first three washings of polyester fabrics, surface TRIS can be reduced by greater than 95 percent, while the total amount in the fabric will be reduced by only about 12 percent." (The fabric containing 70,000 ppm had been specifically treated for test purposes and has not been commercially marketed.)

According to the BBS review of literature data, acetate fabrics contain 85-600 ppm "surface TRIS"[*] (more uniform and lower concentrations that polyester) and polyester fabrics contain 200-37,500 ppm surface TRIS. Although BES stresses the limited reliability of these figures, estimates from the studies show that washing removes up to 85 percent of surface concentration in acetate fabrics and from 21 to 82 percent in polyester fabrics.

G. EFFECT ON FLAMMABILITY STANDARDS

Much of the use of TRIS in wearing apparel is to meet the Commission's flammability standards for children's sleepwear (16 CFR Parts 1615 and 1616). The Commission's Bureau of Epidemiology (BEP) believes, based on an analysis of injury information and on an article on children treated by physicians that children who are burned while wearing flame-resistant sleepwear tend to sustain less extensive burns than children who are burned while wearing non-flame-resistant sleepwear (26). Data indicate that the number of deaths to children ages 1-4 due to clothing ignition decreased following the effective date of the standard for children's sleepwear in sizes 0-6X.

Because the Commission's flammability standards for children's sleepwear are performance standards, the Commission assumes that manufacturers can and will comply with the standard without using TRIS or any other chemical which presents a hazard to the consumer. There are fabrics which meet the standard without using any chemical flame retardants (27).

MARKETING FACTORS

Garments treated with TRIS are made of either 100 percent polyester or acetate and triacetate blends. There is no certain way to distinguish among 100 percent polyester fabrics that are untreated, treated with TRIS, or treated with another flame retardant. The Commission understands, however, that all acetate and triacetate fibers used in children's sleepwear fabrics contain TRIS.

The Commission has found that flame resistant garments currently on the market are: (a) children's sleepwear, sizes 0-14, for which the flame resistant requirement is mandatory, and (b) those which resulted from voluntary programs undertaken by a few major retailers. The Commission believes that there is no significant inventory of flame-resistant garments resulting from voluntary programs at this time (p. 4 of (27)).

The Commission's Bureau of Economic Analysis (BEA), in a March 21, 1977 report (28) has estimated that 18 million garments, over one-third of the spring 1977 production of children's sleepwear, contain TRIS. With inventories taken into account, the portion of TRIS-treated merchandise was estimated in April 1977 to be over 40 percent of all children's sleepwear in the retail pipeline, or about 20 million garments. About 10-20 percent of this had already been sold to consumers. In addition, BEA estimated that about 7 million square yards of TRIS-treated fabric was then in inventory with fabric and garment producers.

BEA believes that a small number of national retail chain outlets and very large discount stores account for more than 55 percent of children's sleepwear sales, while department stores account for 20 percent, and specialty and variety stores account for less than ten percent of annual sales.

ENVIRONMENTAL IMPACT

The Commission has considered the environmental impact of its ban. A preliminary environmental assessment was available when the April 8 ban was published (29). A final assessment is now available (30), and it primarily addresses the questions of a) disposal of TRIS-treated garments, fabrics, fibers, and yarns and b) the use of substitute chemical flame-retardants and substitute end-use products. The Commission has begun work on an environmental impact statement.

Because of the emergency circumstances of the ban of TRIS products, the Commission has been in contact with the Council on Environmental Quality (CEQ) concerning alternative arrangements for complying with the CEQ guidelines on the National Environmental Policy Act. A Commission letter to CEQ on this subject and a response indicating CEQ's concurrence are available (31, 32).

REFERENCES

The parenthetical numbers used in the above portion of the preamble refer to the following documents, studies, and other materials:

(1) March 24, 1976, petition (HP 76-10) from the Environmental Defense Fund.

(2) Letter from Glenn E. Schweitzer, Director, Office of Toxic Substances, EPA to Stanley R. Parent, Executive Director, CPSC, October 29, 1975, and a similar letter to Dr. David Rall, Director, NIEHS, on the same date.

(3) Ames, B., in a letter to Dr. B. L. Van Duuren, New York University Medical Center, January 28, 1976.

(4) November 8, 1976, letter from Chairman S. John Byington to Frank J. Rauscher, Ph. D., Director of the National Cancer Program of NIH.

(5) December 3, 1976, letter from Robert A. Squire, D.V.M., Ph. D., Acting Chief of the Carcinogen Bioassay and Program Resources Branch at NCI, to Chairman Byington.

(6) Preliminary NCI data on TRIS bioassay feeding studies.

[*] The term "surface TRIS" is merely one of convenience. Whether or not the easily removable TRIS is literally on the surface of the fibers is unknown. The more fundamental distinction would appear to be between that amount of TRIS that is loosely bound to fibers and that which is more tightly bound, wherever it may be.

(7) Memo from R. M. Hehir to Don Clay on February 16, 1977, entitled "BES Statistical Analysis of NCI Cancer Bioassay Report on TRIS (2,3-dibromopropyl) phosphate, with attachments.

(8) February 9, 1977, petition (HP 77-8) from the Environmental Defense Fund.

(9) Transcript of February 10, 1977, meeting between Commission staff and EDF representatives.

(10) Transcript of March 2, 1977, Commission meeting with Dr. Schneiderman, NCI.

(11) Transcript of March 8, 1977, Commission meeting with EDF representatives.

(12) February 1, 1977, petition (FP 77-1) from Ms. Joanne Seigel and Dr. Reuben Epstein.

(13) March 16, 1977, NCI draft Bioassay of TRIS (2,3-dibromopropyl) phosphate for possible carcinogenicity.

(14) March 28, 1977, memorandum from R. M. Hehir to Michael Brown and attached meeting log.

(15) Final report—Subchronic and Radioactive ^{14}C Tracer Studies of TRIS (2,3-dibromopropyl) phosphate in Laboratory Rodents, prepared by Bureau of Biomedical Science/CPSC, April 1, 1977.

(16) February 15, 1977, memorandum from Albert P. Esch, Medical Director, on extrapolation of risk from animals to humans.

(17) February 18, 1977, memorandum from Rita A. Orrel, Ph. D., of the Commission's Division of Human Toxicology and Pharmacology in OHD, same subject as 16 above.

(18) March 21, 1977, letter from Hooper and Ames on hazards of carcinogenicity and mutagenicity to humans through dermal absorption and ingestion of TRIS.

(19) June 2, 1976, National Cancer Advisory Board report.

(20) "TRIS (2,3-dibromopropyl) phosphate: Mutagenicity of a Widely Used Flame Retardant," Vol. 195, (pp. 76-78) Jan. 7, 1977, by Drs. Michael J. Prival, Elena C. McCoy, Bezalel Gutter, and Herbert S. Rosenkranz.

(21) March 15, 1977, memorandum from Margaret Nelly, BES entitled "Review of Literature on Availability of TBPP from Treated Fabrics."

(22) March 16, 1977, memo from BES entitled "Chemical Availability of TRIS (2,3-dibromopropyl) phosphate (TBPT) and Dermal and Oral Absorption Models for Three Possible Use Patterns".

(23) March 8, 1977, Harris report entitled "Estimating the Cancer Hazard To Children from Tris-treated Sleepwear."

(24) March 1977 Brown, Schneiderman, Chu paper entitled "Estimates of Human Lifetime Carcinogenic Risk from Exposure to Tris."

(25) March 17, 1977, Bayard to Hehir memo entitled "Preliminary Analysis of Tris Induced Human Lifetime Risk to Cancer."

(26) June 1976 NFP report on sleepwear entitled "Tris and Children's Sleepwear."

(27) February 25, 1977, memorandum of James Sharman, OEX, with attached marketing study.

(28) March 21, 1977, NEA report entitled "Availability of Garments Treated with TBPP."

(29) Preliminary environmental assessment of a TRIS ban.

(30) Final environmental assessment of a TRIS ban.

(31) April 8, 1977, letter to CEQ Acting General Counsel David Tunderman.

(32) April 22, 1977, CEQ response to Commission's letter.

Statutory Findings

Section 2(f)(1)(A) of the Federal Hazardous Substances Act (15 U.S.C. 1261(f)(1)(A)) defines "hazardous substance" as "any substance or mixture of substances which is toxic * * * if such substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children." Section 2(g) of the FHSA (15 U.S.C. 1261(g)) states that "[t]he term 'toxic' shall apply to any substance * * * which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface." Section 2(q)(1)(A) of the FHSA (15 U.S.C. 1261(q)(1)(A)) defines "banned hazardous substance" as "any toy, or other article intended for use by children, which is a hazardous substance, or which bears or contains a hazardous substance in such manner as to be susceptible of access by a child to whom such toy or other article is entrusted."

Section 15 of the FHSA (15 U.S.C. 1274) concerns the repurchase of banned hazardous substances by manufacturers and others in the chain of distribution. The Commission's ban of TRIS products involves more than one type of manufacturer, including manufacturers of the affected chemical, fiber, fabric, yarn and garments. Because such a multiple manufacturer situation exists, the Commission must clarify a number of questions concerning repurchase that have been raised. The Commission expects to issue such a clarification, probably by publication in the Federal Register, as soon as possible.

The Commission has already found that TRIS-treated children's wearing apparel and TRIS-treated uncut fabric intended for sale to consumers for use in such apparel are banned hazardous substances if they were in interstate commerce on April 8, 1977, were or are introduced into interstate commerce after that date, or were sold to consumers before that date but are not yet washed (42 FR 18853). The Commission found that such items are "toxic" within the meaning of section 2(g) of the FHSA and that they may cause substantial illness as a result of their exposure to children within the meaning of section 2(f)(1)(A) of the FHSA.

The Commission's expanded ban, issued below, does not ban any products sold at retail that were not already banned on April 8. Rather, it bans certain components of the products banned on April 8. Therefore, the statutory findings as to the risk presented are identical.

The Commission decided that the only products sold to consumers before April 8 that were banned were those products not yet washed by consumers. There were a number of reasons why the Commission framed its ban in this manner.

Evidence before the Commission indicated that washing removes much of the TRIS in clothing and fabric that might otherwise be available for absorption and ingestion. The Commission believes that most of the clothing and fabric that consumers bought before April 8 has been washed one or more times. The Commission did not find that TRIS-treated clothing and fabric bought before April 8, and already washed by consumers, is necessarily "safe."

It should also be noted that the Commission believes that TRIS-treated clothing, fabric, yarn, and fiber not yet sold by April 8, even if washed during one or more stages of the manufacturing processes, will cause substantial illness. The Commission's test data and other evaluations of the risk of TRIS products were based for the most part on garments already manufactured and ready for retail sale.

There were other important reasons, besides washing by consumers, why the Commission framed its ban in the manner it did. These include the massive marketplace disruption that such a ban would undoubtedly involve; the increased and needless anguish that parents of children who have been exposed to the washed clothing and fabric would feel; and the practical difficulties associated with tracing and repurchasing approximately 120 million items that are years old and often lacking identifying labels.

As already mentioned, sections 2(f)(1)(A) and 2(g) of the FHSA define the terms "hazardous substance" and "toxic." The Commission believes that the TRIS products it has banned, on April 8 and in the order issued below, fall clearly within both of those definitions. Since they are also intended for use by children, they are banned by section 2(q)(1)(A) which defines the term "banned hazardous substance." As the legislative history states, "[t]oys or other articles intended for use by children which bear or contain a hazardous substance are banned by the language of the bill itself * * *" (Senate Report No. 1155, 89th Cong., 2d Sess., page 2).

The Commission has the discretion, under section 3(a) of the FHSA, to conduct a rulemaking proceeding before it declares a substance to be a hazardous substance. This provision is available for use "[w]henever in the judgment of the [Commission] such action will promote the objectives of this Act by avoiding or resolving uncertainty as to its application * * *".

If the Commission had any uncertainty about whether the TRIS products were hazardous substances, it would have conducted a rule-making proceeding according to the procedures prescribed in sections 701 (e), (f), and (g) of the Federal Food, Drug, and Cosmetic Act, as required by section 3(a)(2) of the FHSA.

The Commission found, however, that the evidence supporting the risk of illness presented by the TRIS products is overwhelming. The two-year NCI feeding study shows the potency of TRIS as a carcinogen in animals. The strong link between animal carcinogens and human carcinogens is supported by numerous authorities. The available tests concerning absorption of TRIS through the skin are persuasive and the resulting risk assessments performed by NCI have enormous implications for the health of children who would continue to wear

TRIS-treated clothing. The fact that the cases of cancer will not appear immediately does not minimize the seriousness of the present risk.

Separate from the question of a proceeding under section 3(a) of the FHSA, there is the consideration that the Administrative Procedure Act imposes requirements on agencies for notice of proposed rulemaking, opportunity for public participation, and a delayed effective date (5 U.S.C. 553). However, these requirements are not applicable to interpretive rules or general statements of policy and are therefore not applicable to the interpretation announced in this document. Even if the rules were to be considered general rulemaking, the Commission for good cause finds that notice and public comment and a delayed effective date are contrary to the public interest because the statutory intent and structure of the FHSA is that children's articles that may cause substantial illness based on their toxicity must be banned without any delay.

Although codification in the Code of Federal Regulations is not required in this instance, the Commission believes that a precise articulation of what products are banned hazardous substances is necessary and appropriate. Consumers and the affected industries will be best informed of their repurchase rights and obligations by this method. As was done on April 8, the Commission is therefore listing the banned TRIS products along with other children's products previously banned.

Accordingly, pursuant to provisions of the Federal Hazardous Substances Act (sections 2 (f)(1)(A), (g), (q)(1)(A) and 10(a), 74 Stat. 372, 374, as amended 80 Stat. 1305; 15 U.S.C. 1261 (f)(1)(A), (g), (q)(1)(A), 1269(a)) and under authority vested in the Consumer Product Safety Commission by the Consumer Product Safety Act (section 30(a), 86 Stat. 1231; 15 U.S.C. 2079(a)), the Commission amends 16 CFR 1500.18(d) by adding the following:

§ 1500.18 Banned toys and other banned articles intended for use by children.

• • • • •

(c) [Reserved]

(d) *Toys and other children's articles presenting toxicity hazards.* Under the authority of Section 2(f)(1)(A), 2(g), 2(q)(1)(A), and 10(a) of the act, the Commission has declared that the following articles are banned hazardous substances because they are toys or other articles intended for use by children that are hazardous substances, or bear or contain hazardous substances in such manner as to be susceptible of access by a child to whom they are entrusted, based on the fact that they may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children, because of their toxicity:

• • • • •

(3) All fabric, yarn, or fiber which contains TRIS (2,3-dibromopropyl) phosphate and which is used or intended for use in children's wearing apparel (whether the fabric, yarn, or fiber is cut, uncut, or already incorporated in children's wearing apparel) and which is interstate commerce on April 8, 1977, or which is introduced into interstate commerce after that date, or which has not yet been washed (even if it has been sold before that date);

(4) All TRIS (2, 3-dibromopropyl) phosphate which is used or intended for use in children's wearing apparel and which is in interstate commerce on April 8, 1977, or which is introduced into interstate commerce after that date, or which is in such apparel which is unwashed and is in the hands of consumers.

If any provision of the April 8, 1977, order or this addition, or the application of such provision to any person or circumstance, shall be held invalid, no other provision of the April 8, 1977, order, or this addition thereto, shall be affected thereby.

Dated: May 27, 1977.

RICHARD E. RAPPS,
Secretary, Consumer Product Safety Commission.

[FR Doc.77-15619 Filed 5-31-77;8:45 am]

RECEIVED
JUN 21 1977
U. S. ATTORNEY
COLUMBIA, S. C.

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF SOUTH CAROLINA

ROCK HILL DIVISION

Springs Mills, Inc., Plaintiff, vs. Consumer Product Safety Commission, S. John Byington, R. David Pittle, Barbara Franklin, Lawrence M. Kushner, Thaddeus Garrett, Richard E. Rapps, Defendants and Environmental Defense Fund, Defendant-Intervenor	Civil Action No. 77-891 FINDINGS OF FACT CONCLUSIONS OF LAW AND ORDER

FILED
JUN 23 1977
MILLER C. [illegible], JR., CLERK
COLUMBIA, S. C.

This matter was tried before the Court on June 13, 1977, as to the first cause of action in the complaint brought by plaintiff Springs Mills, Inc. against Consumer Product Safety Commission, the members of the Commission and the Director for Compliance and Enforcement of said Commission. Springs seeks a permanent injunction restraining Consumer Product Safety Commission (CPSC) from enforcing or attempting to enforce its regulations relating to TRIS, a flame retardant used primarily in childrens' sleepwear, technically known as (2,3 Dibromoprotyl) phosphate. CPSC has issued regulations finding TRIS to be a "banned hazardous substance" within the meaning of 15 U.S.C. §1261(q)(1)(A), which is the Federal Hazardous Substances Act, 15 U.S.C. §1261-74. The regulations issued by CPSC were published in the Federal Register

on April 8, April 20, April 26, May 5 and June 1, 1977. (See 42 Fed. Reg. 18850, 2479, 21274, 22878 and 28060.) These regulations declare that all fabrics, yarns and fibers containing TRIS, and all garments made from such fabrics, yarns and fibers intended for use in manufactured childrens' wearing apparel are "banned hazardous substances".

By declaring these articles to be "banned hazardous substances", the provisions of 15 U.S.C. §1274 requiring the repurchase thereof came into effect.

On May 24, 1977, this Court after a hearing in Greenville, South Carolina, issued a preliminary injunction against the CPSC and its Commissioners preventing them from attempting to enforce against Springs any of the TRIS regulations issued by defendants. Subsequent thereto Environmental Defense Fund, Inc. (EDF) moved the Court to intervene as a party defendant in this action. This motion was granted on June 9 with the understanding that EDF would be present at the trial scheduled for June 13 and would make no effort to delay such trial because of its late entry into litigation.

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The complaint sets forth four causes of action, but in the interest of time, and since all parties felt that the first cause of action might be dispositive of the case, the trial held on June 13, 1977 involved only such first cause of action, which alleges that the actions of the Commission in adopting the TRIS regulations are unconstitutional, null and void because they are allegedly in violation of the plaintiff's right to procedural and substantive due process of law as guaranteed by the 5th amendment to the Constitution of the United States.

This issue was tried before the Court without a jury and the evidence received consisted of various affidavits, correspondence, reports, transcripts of Commission meetings and stipulations, but no witnesses testified at the trial.

After consideration of the evidence presented and a study of the legal issues the Court, pursuant to Rule 52 of the Federal Rules of Civil Procedure, makes the following

FINDINGS OF FACT.

1. The plaintiff, Springs Mills, Inc., is a corporation organized and existing under the laws of the State of South Carolina and is engaged in the business of spinning, weaving, knitting, refinishing and marketing a large variety of textile products, which until mid 1976 included fabrics treated with a chemical flame retardant known as TRIS.

2. The defendants are the United States Consumer Products Safety Commission, the Chairman and Commissioners thereof the Executive Director for Compliance and Enforcement of said Commission and Environmental Defense Fund, Inc., which was allowed to intervene as a party defendant in the case.

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3. In 1953 Congress enacted the Flammable Fabrics Act, 15 U.S.C. §1191 et seq. covering the standard for measuring flammability of wearing apparel. Thereafter the Secretary of Commerce was granted authority by the Congress to issue mandatory flammability standards and in 1971 the Secretary issued his apparel flammability standard FF-3-71 (16 C.F.R. §1615) prohibiting the sale in interstate commerce of all childrens' sleepwear sizes 0 to 6X that fail to comply with certain flammability standards. In order to comply with this standard it was necessary that this size childrens' sleepwear be treated with a chemical flame retardant, and TRIS was the only flame retardant available to effectively treat polyester, acetate and triacetate fabrics used for childrens' sleepwear, which would enable the sleepwear to comply with the Secretary's standards. This had the practical effect of the Federal Government ordering that TRIS be used. Now another department of the same Government has not only banned TRIS, but ordered the repurchase of articles containing it.

EDF a petition to require labeling of TRIS treated sleepwear directing that it be washed three times before wearing. CPSC did not publish the contents of this petition, or any proposed regulation suggested thereunder, and took no official action thereon. However, CPSC solicited information from certain selected sources, including EDF itself. In October 1976, EDF complained of the Commission's lack of action on its March 24 petition and CPSC responded in a letter dated December 16, 1976, which stated in part:

> "We agree that section 701(e) of the Federal Food, Drug and Cosmetic Act (21 U.S.C. §371(e)) applies to your petition (See also an applicable regulation at 16 C.F.R. 1500.201(a))."

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Nothing was done by CPSC to notify interested parties of the petition or to set a hearing or otherwise allow interested parties the opportunity to present their views thereon as set forth in 21 U.S.C. §371(e).

5. On February 8, 1977, EDF filed an additional petition with CPSC seeking a ban on the sale of all wearing apparel containing TRIS, and CPSC failed to publish this petition and failed to afford interested persons an opportunity to comment, but continued to receive data from selected sources such as EDF, NCI and certain doctors and professors. All of these contact represent ex parte communications with the Commission at a time when it had petitions pending.

6. On February 4, 1977, officials of CPSC and NCI hel a meeting to review the data and findings of NCI. Notice of this meeting was not given to Springs or anyone else who might be affected by the information obtained from NCI. The minutes of thi meeting show the data supplied by NCI was unverified, uninterprete and uncertain.

7. The Commission thereafter had meetings with EDF personnel, including Robert J. Rauch, counsel of record for EDF in the present case, and received a letter from Rauch, Drs. Harris and Highland, all of EDF, outlining the procedure to be used by CPSC in banning TRIS treated garments, which is the procedure that CPSC has attempted to follow under §1261(q)(1)(A).

8. During this same period members of the Commission received information and opinions from outside sources by telephone

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9. At a meeting of the technical staffs of CPSC and EDF held in Bethesda, Maryland on February 18, 1977, the various tests and results of tests were discussed and indicated that the tests done on mice, rats and rabbits relating to the ingestion and absorption of TRIS were anything but conclusive, that the effects were not necessarily cumulative and Dr. Harris of EDF stated frankly that there was no scientific method for extrapolating from animals to humans in terms of carcinogenicity and near the end of the meeting Mr. Rauch, representing EDF at such meeting, and presently in this court, stated at page 31:

> "One of our concerns here, of course, is the Commission act promptly on this. I think a concern that has developed in my mind as I listened to some of the discussion this afternoon is that certainly we want to get all of the necessary information to make this judgment. But it seems to me some decisions are going to have to be made with certain questions you cannot get perfect answers for, as you all know; there is always some degree of uncertainty.
>
> EDF has now had some petition pending before you for quite some time. This is not a new problem. We now have the NCI data. It seems to us in the interest of protecting public health, if there is any doubt in this case, that the public has got to be given the benefit of that doubt; therefore, we would like to see the Commission, of course, act promptly on this.

10. On March 8, 1977, a meeting of CPSC was held and Mr. Rauch, an attorney for EDF, Dr. Harris and Dr. Highland of EDF appeared and argued for immediate action on the EDF petition. The record does not indicate that there were present any representatives from the chemical industry, the textile industry, the apparel manufacturers industry or any other group or individual that might be affected by a ruling or other Commission action. At page 16 of the transcript of this meeting Mr. Rauch stated:

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> "Of course, it seems to us at this time that your appropriate action will be first, to declare that Tris is a hazardous substance under the Federal Hazardous Substance Act. And then using the authority of Section 2(q)(1)(A) to determine that children's garments containing Tris are banned hazardous substances.[2] (emphasis added)
>
> The statute is very clear. The only action required of you to move forward on this now is to make the determination under the statute that Tris is a hazardous substance. The rest of it falls right into place."

11. Most of the remainder of the March 8 meeting was taken by Dr. Harris and attorney Rauch attempting to convince the five CPSC Commissioners that they should move with dispatch, not worry about any legal challenges, and not wait for "the NCI results These produced a statement by Commissioner Kushner:

> "Once again, there are so many assumptions that are involved here. And it seems to me that the figures there, if we are going to rely on those figures to back up a case, are simply not overwhelming. Not only are they not overwholming, they are not terribly convincing at that level of exposure."

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[2] This is the basic position of Springs in the present action: First, CPSC must determine that TRIS is a hazardous substance, as defined in 15 U.S.C. §1261(f)(1)(A), by following the procedures of the Federal Food, Drug and Cosmetic Act: second, then decide if it should be a "banned hazardous substance" under §1261(q)(1)(A).

12. Later Dr. Harris is quoting a Dr. Mybach and produced the response from Chairman Byington at page 44:

> "Transatlantic telephone call does not replace face to face meetings to talk about major studies."

13. At this meeting EDF threatened suit against CPSC to require it to act upon the EDF petition by March 15, 1977. At page 47 of the transcript Commissioner Byington states:

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> "One of the things I would suggest, and I guess bothers me a bit in your letter, is that in the conclusion of your letter you indicate that if we had not made a decision by the 15th we would be forced to conclude this refusal to act means a denial of the Commission.
>
> You pointed out that should no action be forthcoming by that date, EDF intends to pursue whatever legal remedy is available to it to require the Commission to assume its statutory responsibility.
>
> I would only suggest that if such a suit in those few days might be very counter-productive. And the reason I say it can be very counterproductive is since we are working on a very short time frame, both of us, and both of us I think have tried very forthrightly and openly to keep each other informed as to what we have, where we are going and what we are doing, and if the Commission has not made a decision, and I am not suggesting that they won't by the 15th, but if they haven't, and if the Commission is still trying to get certain pieces of information over the schedule, I have kind of a problem with the suggestion that we are looking at two to three months to move."

14. At the March 8 meeting several Commissioners raised serious questions as to the value of the studies that had been made. These questions were answered by Dr. Harris of EDF giving not only his opinions but quoting from alleged opinions of other doctors who were not present to verify the opinions or to be questioned by the Commissioners.

15. The medical reports presented to CPSC by its own staff physicians are anything but conclusive on the question of dangers from TRIS. These reports refer to problems of "dosage", "an inestimable number of imponderable questions', "exposure", "impossibility of calculation", "no hazard to humans", "impossibility of extrapolation of animal data to humans","that there are a thousand chemicals known to produce cancer in animals and about 30 of these have also been found to be carcinogenic in man".

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16. A meeting of the Commission, closed to the public, was held on April 4, 1977 with two members of its legal staff and four members of its Office of Public Affairs[3] present to discuss whether TRIS should be banned and under what section of the law. The primary choice was between 15 U.S.C. §1261(q)(1)(A) or (B) of the same section. Section (A) applies to:

> "Any toy or other article intended for use by children, which is a hazardous substance, or which bears or contains a hazardous substance in such manner as to be susceptible of access by a child to whom such toy or other article is entrusted;"

and (B) covers:

> "Any hazardous substance intended, or packaged in a form suitable, for use in the household, which the Secretary by regulation classifies as a 'banned hazardous substance' on the basis of a finding that, notwithstanding such cautionary labeling as is or may be required under this chapter or that substance, the degree or nature of the hazard involved in the presence or use of such substance in households is such that the objective of the protection of the public health and safety can be adequately served only by keeping such substance, when so intended or packaged, out of the channels of interstate commerce . . .."

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[3] This ratio of lawyers to public relations people, together with the transcript of such meeting, convince this Court that the Commission was more concerned with its image than with the legal basis of its action.

17. Although no formal vote was taken of the Commission at the April 4 meeting, there appeared in the April 8, 1977 Federal Register the ban on TRIS treated articles which generated this lawsuit. The notice at page 18853 indicates that "Commission proposes to amend 16 CFR 1500.18 by adding a new subsection (d).",[4] and this action is said to be pursuant to the provisions of the Federal Hazardous Substance Act, 15 U.S.C. §1261(f)(1)(A), (g), (q)(1)(A) and §1269(a). This ban provides:

> "(d) Toys and other children's articles presenting toxicity hazards. Under the authority of sections 2(f)(1)(A), 2(g), 2(q)(1)(A), and 10(a) of the Act, the Commission has declared that the following articles are banned hazardous substances because they are toys or other articles intended for use by children that are hazardous substances, or bear or contain hazardous substances in such manner as to be susceptible of access by a child to whom they are entrusted, based on the fact that they may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonable foreseeable handling or use, including reasonably foreseeable ingestion by children, because of their toxicity:
>
> (1) Children's wearing apparel made from fabric which contains TRIS (2,3-Dibromoprophyl) phosphate and which is interstate commerce on April 8, 1977 or which is introduced into interstate commerce after that date or which has not yet been washed, (even if it has been sold before that date;) and
>
> (2) Uncut fabric, intended for sale to consumers for use in children's wearing apparel, which contains TRIS (2,3-Dibromoprophyl) phosphate and which is in interstate commerce on April 8, 1977 or which is introduced into interstate commerce after that date or which has not yet been washed (even if it has been sold before that date)."

[4] Inclusion of the word "proposes" must have been a "Freudian Slip", since this would have been the proper way to give notice and begin a rule making process. This was changed by correction dated April 13, 1977, FR 21274, leaving out "proposes to".

18. At the closed meeting of the Commission on April 4, 1977, it was apparent that the members were still receiving ex parte advice, evidence and information, but were quite concerned with the possibility of having to explain their decision or any actions taken to a United States District Court. The general counsel for the Commission said he had talked with Rauch the morning of the meeting and Rauch was concerned about manufacturers or retailers dumping TRIS products on the market, although he had no evidence that this was happening. Attorney Rauch made the same statement to this Court, but again had nothing to back up this claim. The Commission also discussed a letter received from Professor Bruce N. Ames of the University of California at Berkeley which strongly recommended the TRIS ban. This letter was sent to the Commission following its telephone conversation from Professor Ames to Commissioner Franklin on February 28, 1977 in which Ames expressed his views on carcinogenicity of TRIS and Commissioner Franklin suggested he put his views in a letter. (See plaintiff's exhibit 3-P). Some of the Commissioners felt the letter and its lengthy appendix[5] were impressively worded, but they were unsure of his conclusions. It was decided to refer the letter to one Rosenthal (first name not given) for his opinion. Then followed this dialogue at page 74 of the transcript.

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> "Mr. Clay (member of the office of Public Affairs of CPSC): And I don't know how long it will take.
>
> Commissioner Byington: There is a couple of ways to do it. That he could either have a chance to read this letter and have some of his people check a couple of things out.
>
> Mr. Clay: He has seen the letter.
>
> Commissioner Byington: And talk to any of the Commissioners individually about it or write a memorandum to the Commission on the letter.

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[5] The appendix contains information supporting the conclusions of Ames and under "Acknowledgements" he thanks, among others, Robert Harris (of the Environmental Defense Fund) for help. This is the same Dr. Robert Harris who presented the case for EDF in other appearances before CPSC at which no representatives of parties manufacturing TRIS, children's sleepwear or retailing the same were present.

Commissioner Pittle: That is okay.

Commissioner Byington: A memorandum is a hell of a lot worse. It is going to become a part of the record. And he is going to want to take a lot more time to write a memorandum than he would give you in an off-the-top-of-the-head . . ..

Mr. Clay: He is very sensitive to what he is going to be saying.

Commissioner Byington: Because the memorandum will find itself in front of a judge. A telephone conversation that he is willing to discuss with you the pros and cons of any of the paragraphs in there is a different thing.

But I would suggest that we wait until tomorrow afternoon or Wednesday and let any of the Commissioners just kind of chat with Bob."

19. At the April 4 meeting Commissioners and members of the staff felt that the total recall of TRIS treated children's sleepwear could reach 120,000,000 units and as much as $900,000,000 In 42 Federal Regulations 18852 the Commission stated that it estimated that there were approximately 20,000,000 garments or 7,000,000 yards of fabric in the "pipeline" between the fabric manufacturer, the garment manufacturer, the retailer and the purchaser.

20. On April 20, 1977, the American Apparel Manufacturing Association (AAMA) brought suit against CPSC in the United States District Court for the District of Columbia contending that the Order of the Commission banning TRIS, which put the entire economic burden for repurchase under 15 U.S.C. §1274 upon the apparel manufactures, was improper and should be expanded to include TRIS-treated fabric, fiber and yarn incorporated in or intended to be incorporated into children's wearing apparel. The presiding judge in that case, on his own motion, indicated that some representative of the fabric manufacturers should be before the court and in effect interpled American Textile Manufacturers Institute (ATMI) a non-profit corporation whose

circumstances was compelled to accept. In that action (Civil Action No. 77-682 in the District Court for the District of Columbia) the Judge issued an Order dated May 3, 1977 finding that CPSC had acted arbitrarily and capriciously in too narrowly defining "banned hazardous substances" in its April 8, 1977 ban on the sale of certain TRIS-treated wearing apparel by placing the entire economic burden resulting from the ban upon manufacture of children's wearing apparel, and the Court extended the ban to include all fabric, yarn or fiber which contains TRIS and which is used or intended to be used in children's wearing apparel.

21. As a result of this Order, CPSC on May 5, 1977, published the Order in the Federal Register, page 22878, and cited the Order as the authority to extend the ban and then complied with the Order by amending the original ban to include all fabric, yarn or fiber containing TRIS and used or intended for use in children's wearing apparel.

22. That on or about May 12, 1977, the United States Court of Appeals for the District of Columbia stayed the District Court's Order and the Commission's May 5 ban. Thereafter on May 19 said Court of Appeals lifted the stay and vacated the district court's Order upon representation of the Commission that it would take prompt and decisive action in the matter, the Commission having indicated to the Court that it would expand the ban pursuant to its own authority rather than under the Judge's May 3 Order.

23. On Friday, April 22, 1977, representatives of the Independent Cutters and Sewers of Children's Sleepwear met with the Commission and submitted a petition to reconsider the form of the Commission's April 8 ban to include fabric, yarn and fiber. On April 26 the Commission received a letter of EDF requesting similar extension of the ban. In neither case did the Commission notify Springs or any representative of the manufacturers or producers, who might be adversely affected by

these petitions, that such petitions had been filed or were under consideration by the Commission.

24. On the same day, Friday, April 22, 1977, the Commission held an executive session to consider the petition filed that day, and to also consider what action should be taken in relation to the matter pending before the district court in the District of Columbia. A transcript of this executive session, which has been marked "restricted data" and "confidential" was produced by CPSC upon motion of the plaintiff, for in camera inspection by the Court. The Court finds that the information revealed by this hearing is important to the case and is making the transcript a part of the record as the Court's Exhibit No. 1.

25. It is obvious from reading the actual language of the commissioners that they considered "interpretations" to be handled by press releases. That these "interpretations" would be handled by Commission action upon recommendation by its general counsel in order to clear up confusion that had resulted from its April 8 ban. It is also obvious from this transcript that the Commission was of the opinion that the Judge handling the AAMA case was going to extend the ban to fabric, yarn and fiber and their concern was whether to submit language of a proposed expansion of the ban to the Judge, or to await his Order and allow the Order to speak for itself.

26. On June 1, 1977, after the present action was begun and the temporary restraining order of May 24, 1977 had been filed, the Commission expanded the ban again and this time preceded it with a lengthy history, explanation and certain findings, which are found in Federal Register, Volume 42, No. 105 at page 28060. The ban itself reads the same as that published on May 5, but the statutory findings preceding the ban give the statutory definitions of "hazardous substance", "toxic" and "banned hazardous substance" and go on to explain reasons why

the Commission had worded the ban in the manner set forth.

At 28063 it states:

> "There were other important reasons, besides washing by consumers, why the Commission framed its ban in the manner it did. These include the massive marketplace disruption that such a ban would undoubtedly involve; the increased and needless anguish that the parents of children who have been exposed to the washed clothing and fabric would feel; and the practical difficulties associated with tracing and repurchasing approximately 120 million items that are years old and often lacking identifying labels.
>
> As already mentioned, sections 2(f)(1)(A) and 2(g) of the FHSA defined the terms 'hazardous substance' and 'toxic'. The Commission believes that the TRIS products it has banned, on April 8 and in the order issued below, fall clearly within both of those definitions. Since they are also intended for use by children, they are banned by section 2(q)(1)(A) which defines the term 'banned hazardous substance'. As the legislative history states, '[t]oys or other articles intended for use by children which bear or contain a hazardous substance are banned by the language of the bill itself . . .' (Senate Report No. 1551, 89th Cong., 2nd Sess., pg. 2).
>
> The Commission has the discretion under section 3(a) of the FHSA, to conduct a rulemaking procedure before it declares a substance to be a hazardous substance. This provision is available for use '[w]henever in the judgment of the [Commission] such action will promote the objectives of this Act by avoiding or resolving uncertainty as to its application . . .'
>
> If the Commission had any uncertainty about whether the TRIS products were hazardous substances, it would have conducted a rule-making procedure according to the procedures described in sections 701(e), (f), and (g) of the Federal Food, Drug and Cosmetic Act, as required by 53(a)(2) of the FHSA.
>
> The Commission found, however, that the evidence supporting the risk of illness presented by the TRIS products is overwhelming. The two-year NCI feeding study shows the potency of TRIS as a carcinogen in animals. The strong link between animal carcinogens and human carcinogens is supported by numerous authorities. The available tests concerning absorption of TRIS through the

> skin are persuasive and the resulting risk assessments performed by NCI have enormous implications for the health of children who would continue to wear TRIS-treated clothing. The fact that the cases of cancer will not appear immediately does not minimize the seriousness of the present risk.
>
> Separate from the question of a proceeding under section 3(a) of the FHSA, there is the consideration that the Administrative Procedure Act imposes requirements on agencies for notice of proposed rulemaking, opportunity for public participation, and a delayed effective date (5 U.S.C. 553). However, these requirements are not applicable to interpretive rules or general statements of policy and are therefore not applicable to the interpretation announced in this document. Even if the rules were to be considered general rulemaking, the Commission for good cause finds that notice and public comment and a delayed effective date are contrary to the public interest because the statutory intent and structure of the FHSA is that children's articles that may cause substantial illness based upon their toxicity must be banned without any delay."[6]

27. In the statutory findings accompanying the April 8 ban there was no finding that the evidence supporting the risk of illness presented by TRIS products was overwhelming. In the background information set forth in the April 8 and the June 1 bans there is continued reference to information supplied by Environmental Defense Fund, codefendant in the present case, Hooper and Ames, a research associate and professor of biochemistry at the University of California in Berkeley, to the report of the National Cancer Institute, Bureau of Bio-Medical Science, a divisi of CPSC, and reports from Dr. Harris of EDF. None of which have been tested by cross examination and are ex parte communications.

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[6] CPSC in this June 1st publication was obviously trying to strengthen its case in this Court and revive its ban which had already been corrected twice and expanded once by order of the D.C. Court. This language of June 1st is simply a self-serving declaration set forth in the Federal Register.

published in the Federal Register, 38 Fed. Reg. 27012 (a regulatic codified as 16 C.F.R. §1500.3(c)(2)) which prescribes a test for determining whether a substance is toxic within the meaning of §1261(g), and this regulation has remained in force at all times thereafter and is the only published regulation in the Commission setting forth the test for determining whether a substance will be determined "toxic" by the Commission. This publication was obviously an interpretation since it set forth the number of white rats or rabbits to be used in various experiments, the size or weight of such animals and the effect of the substance upon them in order to be labeled "toxic". This publication also gave definitions for "irritant,"strong sensitizer", "flammable", "extremely flammable", "extremely flammable contents of self-pressurized container", "substantial personal injury or illness", "proximate results" and other terms which needed to be more fully defined. However, these interpretations and definitions did not attempt to define any particular substance, element or article as being toxic, hazardous or a banned hazardous substance under the Act, but just explained certai requirements and definitions.

29. That the TRIS regulation published April 8, 1977 and all amendments and additions thereto are based in part on a finding by the Commission that TRIS is a "toxic" substance under §1261(g) and a "hazardous substance" under §1261(f)(1)(A), but CPSC did not follow the statutes in making these findings.

30. That before adopting and publishing any of the TRIS regulations CPSC did not publish notice of the proposed regulation in the Federal Register, did not afford Springs an opportunity to present its views thereon and did not give any type of notice, that could be considered "public notice" of its actions or intended actions.

31. That on May 9, 1977, Springs Mills tendered to CPSC for filing at its office in Washington, D. C. plaintiff's "objections to statutory interpretation and request for public hearing", and CPSC has refused to accept these objections for filing.

32. That since the publication of the TRIS regulation on April 8, 1977 and the subsequent amendments and additions thereto CPSC has failed to afford Springs a hearing on its objections to the TRIS regulation, has failed to accept for filing the objections of Springs to the regulation and request for public hearing, has failed to publish a notice in the Federal Register specifying those parts of the TRIS regulation stayed by the filing of objections of the plaintiff, has failed to recognize any possible stay of the regulation by the objection and has failed to take any steps to cause a public hearing to be convened for the purpose of receiving evidence on the issues raised by the objections.

33. That on April 13, 1977, Richard E. Rapps, acting associate executive director for compliance and enforcement dispatched a letter to Springs advising it of the ban on all children's wearing apparel made from fabric containing TRIS and that any continued sale of the fabric was prohibited and subject to penalties provided by law and advising that inspection of "randomly selected firms" would be conducted by the Commission to insure compliance with the ban. This letter also threatened injunction and/or criminal prosecution in the event a firm did not initiate appropriate corrective action.

34. That on or about May 17, 1977, the Commission filed an action against F. W. Woolworth Co. in United States Distri Court for the Southern District of New York alleging that Woolworth

had continued to sell TRIS-treated children's wearing apparel in violation of the Commission's April 8 ban. This action resulted in an entry of final judgment, which was in effect a consent order enjoining Woolworth from selling such articles and requiring Woolworth to reimburse CPSC $5,000 to cover the cost of the action. In said action it was alleged that "On April 8, 1977, the Commission published an Order declaring the following children's wearing apparel and related articles and products treated with TRIS are 'banned hazardous substances' . . ." (emphasis added).

35. The final judgment of the Court for the Southern District of New York also refers to the April 8 action of the CPSC as an "order" and later as a "regulation".[7]

36. That the action by CPSC in adopting the TRIS ban and the amendments thereto has caused havoc in the children's sleepwear market and generated confusion, lawsuits and uncertainty among all who retail these products, manufacture such products or manufacture the fabric used in such products. CPSC admits litigation among the various segments of this industry could go on for years as a result of the Commission's action which invokes the repurchase provisions of §1274. That the loss to Springs as a result of the CPSC TRIS ban will total at least $2,000,000.00.

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[7] The U. S. Attorney for the Southern District of New York knew he was enforcing a CPSC regulation, rule or order and not some "interpretation", which is the label CPSC is trying to sell in the District of South Carolina.

CONCLUSIONS OF LAW

A. This action is brought under the laws and under the Constitution of the United States. It seeks declaratory judgment and the Court has jurisdiction of all parties pursuant to 28 U.S.C. §1331, 1337, 1346 and 2201. The venue is properly laid in this district.

B. The basic issue is whether plaintiff has been denied due process of law because of actions taken by Consumer Product Safety Commission in declaring TRIS a "banned hazardous substance" within the meaning of 15 U.S.C. §1261(q)(1)(A) in not conducting a rule-making hearing with proper notice to those affected by the proposed ban and an opportunity for it to appear, present testimony and cross-examine witnesses presented by the Commission and test the weight and sufficiency of the evidence considered by the Commission. This claimed denial of due process could result from either an unconstitutional interpretation placed upon the law by CPSC or from a finding that the statute itself is unconstitutional.

In the brief of CPSC the issue is stated succinctly:

> "The Commission has not engaged in formal rule-making process provided for by 15 U.S.C. §1262(a)(2) or 21 U.S.C. §371 (e), nor has it afforded Springs Mills an opportunity for a hearing.
>
> Only the legal issue of whether the Commission was required to engage in rule-making in accordance with 15 U.S.C. §1262(a)(2) remains for resolution by this Court."

C. The Federal Hazardous Substances Act, 15 U.S.C. §1261-1274 at §1261(f)(1)(A) defines the term "hazardous substance" as follows:

"(1)(A) Any substance or mixture of substances which (i) is toxic, (ii) is corrosive, (iii) is an irritant, (iv) is a strong sensitizer, (v) is flammable or combustible, or (vi) generates pressure through decomposition, heat or other means, if such substance or mixture of substances may cause substantial personal injury or substantial injury during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children."

Various words used in this definition are further described, but only "toxic" is applicable to this case.

§1261(g) provides:

> "The term 'toxic' shall apply to any substance (other than a radioactive substance) which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface."

Section 1261(q)(1) provides:

> "The term 'banned hazardous substance' means (A) any toy, or other article intended for use by children, which is a hazardous substance, or which bears or contains a hazardous substance in such manner as to be susceptible of access by a child to whom such toy or other article is entrusted; or (B) any hazardous substance intended, or packaged in a form suitable, for use in the household, which the Secretary by regulation classifies as a 'banned hazardous substance' on the basis of a finding that, notwithstanding such cautionary labeling as is or may be required under this chapter for that substance, the degree or nature of the hazard involved in the presence or use of such substance in households is such that the objective of the protection of the public health and safety can be adequately served only by keeping such substance, when so intended or packaged, out of the channels of interstate commerce: Provided, That the Secretary, by regulation, (i) shall exempt from clause (A) of this paragraph articles, such as chemical sets, which by reason of their functional purpose require the inclusion of the hazardous substances involved or necessarily present an electrical, mechanical, or thermal hazard, and which bear labeling giving adequate directions and warnings for safe use and are intended for use by children who have attained sufficient maturity, and may reasonably be expected, to read and heed such directions and warnings, and (ii) shall exempt from clause (A), and provide for labeling of, common fireworks (including toy paper caps, cone fountains, cylinder fountains, whistles without report, and sparklers) to the extent that he determine that such articles can be adequately labeled to protect purchasers and users thereof.

(2) Proceedings for the issuance, amendment or repeal of regulations pursuant to clause (B) of paragraph (1) of this subsection shall be governed by the provisions of §371(e)(f) and (g) of Title 21: Provided, That if the Secretary finds that the distribution for household use of the hazardous substance involved presents an imminient hazard to the public health, he may by order published in the Federal Register give notice of such finding, and thereupon such substance when intended or offered for household use, or when so packaged as to be suitable for such use,

> shall be deemed to be a 'banned hazardous substance' pending the completion of proceedings relating to the issuance of such regulations."

Regulations declaring hazardous substances are covered by §1262 of the Act, paragraph (a)(1) provides:

> "Whenever in the judgment of the Secretary such action will promote the objectives of this chapter by avoiding or resolving uncertainty as to its application, the Secretary may by regulation declare to be a hazardous substance, for the purposes of this chapter, any substance or mixture of substances which he finds meets the requirements of subparagraph (1)(A) of section 1261(f) of this title.
>
> (2) Proceedings for the issuance, amendment or repeal of regulations under this subsection and the admissibility of the record of such proceedings in other proceedings, shall in all respects be governed by the provisions of §371(e), (f) and (g) of Title 21, except that -
>
> (A) the Secretary's order after public hearing (acting upon objections filed to an order made prior to hearing) shall be subject to the requirements of section 348(f)(2) of Title 21; and
>
> (B) the scope of judicial review of such order shall be in accordance with the fourth sentence of paragraph (2) and with the provisions of paragraph (3) of section 348(g) of Title 21." (emphasis added)

These references are to procedures set up under the Food, Drug and Cosmetic Act.

Under the rule-making procedures of the Food, Drug and Cosmetic Act, that are incorporated by Congress in the Federal Hazardous Substance Act, all persons adversely affected by the proposed TRIS regulations are entitled to advance notice of rule making (section 371(e)(1)), a delayed effective date of the regulation (section 371(e)(1)), the right to file objections within 30 days (371(e)(2)), the right to automatic stay of the effective date of portions of any regulations to which objections are filed (section 371(e)(2)), the right to a public hearing on such objections and a decision based on a fair evaluation of all the evidence of record at such hearing, (section 348(f) and 371(e)(3)) and to judicial review under 348(g)(2).

[illegible] under §1261(q)(1)(A) and §1262 (a)(1) it has authority to declare an article a "banned hazardous substance" without going through the steps required for the issuance of regulations set forth in the Food, Drug and Cosmetic Act. The Commission, therefore, claims the right to declare without any notice, hearing or opportunity of interested parties to comment that an article is a "banned hazardous substance", if the Commission concludes from testimony and statements not subject to cross examination, from data not subject to public scrutiny or examination, and from ex parte conversations and communications from lawyers, physicians and research personnel interested in obtaining a ban, that such article is or contains a hazardous substance and is susceptible to access by a child. The Commission further asserts that under §1262(a)(1) the Commissi has the discretion as to whether to grant a hearing or just issue an edict. For its own convenience, and to prevent the application of either the Food, Drug and Cosmetic Act or the rule-making provisions of the Administrative Procedure Act, 5 U.S.C. §553 the Commission refers to these orders, which have the effect of law, as "interpretations".

The Commission, which has the duty of requiring adequate labels and warnings to be affixed to articles, should not apply a false label to its own action in an effort to deprive the plaintiff of its right to a hearing and constitutional due process. If CPSC thinks it has authority under either §1261(q)(1)(A) or §1262(a)(1) to bypass the rule-making procedure, why has it expended so much energy trying to convince the parties, the public and this Court that the TRIS ban is merely an interpretation?

The Commission relies upon the legislative history of the Federal Hazardous Substance Act and particularly a letter from the Secretary of Health, Education and Welfare dated August 20, 1959 to the Chairman of the House Committee on Interstate and Foreign Commerce, which is printed in U. S. Congressional

Administrative News 1960-179 at page 2849 under the heading of "Declaratory Regulations as to Coverage". The Secretary of HEW is expressing his concern about the "if clause" contained in §1261(f)(1)(A). The term "hazardous substance" is defined followed by this language:

> ". . . if such substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children."

The letter of the Secretary states:

> "It is apparent that, even with the above-suggested clarifications, the application of the second part (i.e. the so-called "if" clause) of the basic definition of 'hazardous substance' in the bill is so largely dependent on judgmental factors -- e.g., what is 'reasonably foreseeable' -- that it will lead to considerable uncertainty and much costly litigation, with different courts and juries reaching different results, unless some mechanism for authoritatively resolving this uncertainty short of litigation is devised. We realize that, on the one hand, in view of the broad sweep of the bill, and because of the constant development of new useful but hazardous substances suitable for household use, the inclusion of a statutory list of covered substances (an analogy to the list in the Federal Caustic Poison Act)[8] or, the limitation of coverage to substances listed by regulation would not be feasible. And while, on the other hand, we would prefer elimination of the "if" clause altogether from the point of facility of enforcement, we recognize that the inclusion of some such clause can be justified.
>
> It is feasible, however, and we strongly urge, that the committee include in the bill provisions deeming a substance to be hazardous where the Secretary by regulation declares it to be such upon the basis of a finding that it meets the requirements of the bill's basic definition of 'hazardous substance'. The Secretary should be authorized to take such action whenever in his judgment this

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[8] Formerly 15 U.S.C. 401 et seq. now repealed in the body of the statute listed various "dangerous caustic or corrosive substances" covered by said act by both name and chemical formula, all of which were commonly known poisons.

> will promote the objectives of the bill by avoiding or resolving uncertainty. (The failure of the Secretary to take such action, of course, should not absolve anyone from the consequences of noncompliance with the labeling requirements of the bill in the case of a substance which is 'hazardous' under the basic definition.) We would not object to making the issuance, amendment, or repeal of these declaratory regulations subject to procedural safeguards (with ? opportunity for administrative hearing, and for judicial review on the basis of the hearing record) such as those contained in sections 701(e)-(g) of the Federal Food, Drug and Cosmetic Act." (emphasis added)

The continuous reference to "regulation" in the applicable parts of the statute and in the legislative history clearly indicate the congressional intent that the Commission proceed with rule-making procedures, as set forth in Food, Drug and Cosmetic Act, and not attempt to make final decisions having nationwide impact without affording affected parties the basic requirements of due process.

The Commission cannot fit its action banning TRIS within the exemption provided by the Administrative Procedures Act, 5 U.S.C. §553(d)(2) as "interpretative rules and statements of policy." Interpretative rules are statements as to what an administrative officer thinks the statute or regulation means,[1] while "regulations", "substantive rules" or "legislative rules" are those which create law, usually implementary to existing law. National Motor Freight Traffic Assn. v. U. S., 268 F. Supp. 90 (D.C.D.C. 1967). Under Continental Oil Co. v. Burns, 317 F. Supp. 194 (D.C. Del. 1970) and American Bancorp. Inc. v. Board of Governors, 509 F.2d 29 (8th Cir. 1974) a four part criteria has been established to determine whether agency action involves an interpretation or a substantive regulation, as follows:

[9] The language in brackets was omitted from EDF's version of this letter as set forth in its brief.

[10] The proper use of "interpretative rules" is found in 16 C.F.R. where CPSC defines in detail the meaning of such words as: "toxic" "highly toxic," "irritant", "strong sensitizer", etc. None of the definitions mention or refer to a particular product, compound, chemical, article or combination thereof.

(1) the complexity and pervasiveness of the rules issued, (2) the drastic changes effected in existing law by the rules, (3) the degree of retroactivity and its impact and (4) the confusion and controversy engendered by practical difficulties of compliance with the new rules.

The TRIS bans issued by CPSC fit each one of the above criteria. The Commission action banning TRIS is complex, as evidenced by the continuous press releases of CPSC to explain it, and the fact that it has on four occasions amended, corrected or expanded the regulation published April 8. The regulation is pervasive since it is far reaching and influences every party handling TRIS. It represents a drastic change from the existing law, since the United States Government through the Commerce Department originally required TRIS to be used in children's sleepwear to meet anti-inflammatory standards set by the Department and TRIS was the only anti-inflammatory product then available, capable of meeting the requirements of the law. Now CPSC, another agency of the same government, makes a drastic change by not only demanding that TRIS be no longer used in the process, but that the repurchase provisions of 15 U.S.C. §1274 become effective.

The degree of retroactivity and its impact are enormous, since merchants, manufacturers of TRIS treated pajamas and manufacturers of fabric or fiber used therein must buy back products sold years ago.

Confusion and controversy engendered by practical difficulties of compliance with the new rules are evident by the litigation that has resulted, the confusion among the commissioners as evidenced by the various transcripts of their meetings and their admissions that litigation between retailers, manufacturers and others in the children's sleepwear pipeline may go on for years.

That any agency of the United States Government should try to hide such far reaching and drastic measures under the label of an "interpretation" is scandalous. It is particularl shocking when these same commissioners are in a position to pass upon labels, warnings and brands placed upon or accompanying articles in commerce within this country. Their action is the most flagrant misbranding imaginable. The new TRIS ban is not an interpretation but a new rule having the effect of a law with the most far reaching consequences.

By finding TRIS-treated children's sleepwear to be a "banned hazardous substance" the Commission set in motion the provisions of §1274, one of the most drastic procedures known to law.[11] Congress could not have provided such a remedy without intending that it be used only after a full due process hearing.

Defendants' argument that the Commission may declare an article a "banned hazardous substance" under §1261(q)(1)(A) without first deciding that it is a "hazardous substance" under §1261(f)(1)(A) is unpersuasive. The Court is also unpersuaded

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[11] §1274 Repurchase of Banned Hazardous Substances; Procedure; Definitions.

(a) In the case of any article or substance sold by its manufacturer, distributor, or dealer which is a banned hazardous substance (whether or not it was such at the time of its sale), such article or substance shall in accordance with regulations of the Secretary, be repurchased as follows:

(1) The manufacturer of such article or substance shall repurchas it from the person to whom he sold it, and shall-

(A) refund that person for the purchase price paid for such article or substance,

(B) if that person has repurchased such article or substance pursuant to paragraph (2) or (3), reimburse him for any amounts paid in accordance with that paragraph for the return of such article or substance in connection with its repurchas and

(C) if the manufacturer requires the return of such article or substance in connection with his repurchase of it in accordan with this paragraph, reimburse that person for any reasonable and necessary expenses incurred in returning it to the manufacturer.

Subparagraph 2 provides for repurchase by a distributor and subparagraph 3 provides for repurchase by a retailer.

by its argument that §1262(a)(1) gives the Commission the option of going through the rule-making process or of just issuing its mandate that some article is suddenly a "hazardous substance" or a "banned hazardous substance".

This position is not supported by the language of the statute or by the legislative history. This history, mentioned above, shows clearly that Congress intended the Secretary to act "by regulation" which would mean under the rule-making process. Congress also indicated its concern for the powers given CPSC by requiring rule making under the Federal Food, Drug and Cosmetic Act rather than the Administrative Procedure Act in matters relating to hazardous substances. The Administrative Procedure Act allows certain rules to be made on a "notice and comment" basis, but §371(e), (f), and (g) of the Food, Drug, and Cosmetic Act require a notice of a hearing, the right of the objecting party to cross examine witnesses presented by the Commission and to present evidence in opposition thereto, and other evidence which may be relevant or material to the issues, and the Commission is required to issue an Order based solely [12] on the evidence of record at the public hearing. This order "shall be based on a fair evaluation of the entire record of the hearing" and must be accompanied by a "statement setting forth in detail the findings and conclusions upon which the order is based.". Obviously, Congress did not intend for matters under the Federal Hazardous Substance Act to be handled or decided on the basis of ex parte communications with members of the Commission or without effective notice so that objecting parties could appear, present evidence and test the validity of the information presented. As Justice Frankfurter has stated:

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[12] Not from ex parte contacts and communications with the Commissioners.

> ". . . Fairness can rarely be obtained by secret, one-sided determination of facts decisive of rights . . . . [A n]o better instrument has been devised for arriving at the truth than to give a person in jeopardy of serious loss notice of the case against him andopportunity to meet it." Joint Anti-Fascist Refugee Committee v. McGrath, 341 U.S. 123.

This fairness, which is another way of saying due process, is completely lacking in the actions of CPSC banning TRIS.

Defendants argue that a special rule applies when th rights of children are involved and that (q)(1)(A) allows an immediate "banned hazardous substance" finding on toys or other articles intended for use by children without first finding th an article is a "hazardous substance" as defined in §1261(f)(1)(A) The fact that children may be involved does not obviate the nece that CPSC by proper rule-making procedure determine that an arti is a "hazardous substance", before it may go on to find that it is a "banned hazardous substance."

The due process requirements of the Constitution do not fly out of the window when the rights of children come in tr door. Even a person, who admits committing the most grievous crime against a child, is still entitled to due process of law, and the fact that a child may use a toy or an article does not deny due process protection to the rotailer, manufacturer or supplier of a component part of such article. The obvious inter of Congress was that after a proper finding[13] of "hazardous substance", if the toy or article was obviously intended for use children, then the term "banned hazardous substance" could be applied to it and thereby invoke the repurchase provisions of §1274.

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[13] Under the procedures set forth in the Federal Food, Drug, ar Cosmetics Act.

To interpret §1261(q)(1)(A) and §1262(a)(1) as urged by the defendants would require a finding that Congress had enacted a patently unconstitutional law. This construction must be avoided by the Court when possible.

> "It is axiomatic that statutes are to be interpreted to avoid constitutional issues unless their plain and explicit meaning requires that constitutional issue be met and decided. U.S. v. Perez, 488 F.2d 1057, 1059 (11th Cir. 1974). See also International Association of Machinists v. Street, 367 U.S. 740 (1961) at page 749:
>
> Federal statutes ought to be so construed as to avoid serious doubt of their constitutionality. 'When the validity of an Act of Congress is drawn in question, and even if a serious doubt of constitutionality is raised, it is a cardinal principal that this Court will first ascertain whether a construction of the statute is fairly possible by which the question may be avoided'. Crowell v. Benson 285 U.S. 22, 62, 76 L.Ed. 598, 619, 52 S.Ct. 285."

The Federal Hazardous Substances Act, particularly §1261(q)(1)(A) can fairly be interpreted as meeting the due proc requirements of the Constitution by requiring that CPSC use the rule-making procedure provided therein and outlined in 20 U.S.C. §371. All this requires is that there be a proper finding, afte adequate notice and a fair hearing, that an article is a "hazard substance" before proceeding on to the next determination - "ban hazardous substance".

Any other construction would allow the commissioners to deprive hundreds of persons of millions of dollars without a hearing, without notice of a hearing, without an opportunity to present evidence, without the opportunity to cross examine and otherwise test the credibility and validity of evidence presente and such an interpretation would also allow and condone the clos meetings between proponents of such a ban and the commissioners, together with submission of ex parte communications, material an

information to a quasi-judicial body,when it is deliberating an important case; which is exactly what has happened in this matt

The Supreme Court has carefully protected the right to due process. See Fuentes v. Shevin, 407 U.S. 67 (1972). Th Supreme Court found the replevin laws of Florida and Pennsylvar unconstitutional as being violative of the due process clause, since no hearing was afforded to the possessor of personal property prior to the seizure of this property, even though seizure was allowed under state law, was accompanied by a bond to cover any damages resulting therefrom, and seizure was under conditional sales contract whereby the possessor lacked full le title to the goods. The goods seized in Fuentes were a stove, a stereo, a table and a bed. They were not the necessities of life, and as the Court pointed out, the possessor "lacked full title to the chattels; and their claim even to continued possession was a matter in dispute." However, the Court struck down the state statutes as not providing a notice and an opportunity to be heard before losing only temporary possession these household items. Fuentes also held that it was fundament that there be a right to notice and an opportunity to be heard at a meaningful time and in a meaningful manner, and this meant before seizure. At page 81 it is stated:

> "If the right to notice and a hearing is to serve its full purpose, then, it is clear that it must be granted at a time when the deprivation can still be prevented. At a later hearing, an individual's possessions can be returned to him if they were unfairly or mistakenly taken in the first place. Damages may even be awarded to him for the wrongful deprivation. But no later hearing and no damage award can undo the fact that the arbitrary taking that was subject to the right of procedural due process has already occurred. 'This Court has not . . . embraced the general proposition that a wrong may be done if it can be undone." Stanley v. Illinois, 405 U.S. 645, 647, 31 L.Ed. 2d 551, 556, 92 S.Ct. 1208.

items, a small amount of money, a bond to cover any damages tha might result and the possibility that the property would be returned. In the present case the Commission's action affects thousands of retailers, hundreds of manufacturers, millions of articles and many millions of dollars. The tragedy is that unl a replevin action, where the property may be returned, the acti of the CPSC has put the market in children's sleepwear in such a state of confusion and disarray that the CPSC itself has no estimate or idea of when the turmoil may end. To prevent the Florida people from using their replevin process without prior notice and prior hearing, but to allow CPSC without notice and a hearing, to ban TRIS-treated children's sleepwear as a "banned hazardous substance", invoking the repurchase provisions of §127 would be unthinkable.

This is not the first case in which CPSC has attempted to avoid due process by bypassing the rule-making provisions of the Food, Drug and Cosmetic Act. See Pactra Industries, Inc. v. Consumer Product Safety Commission, (9th C.. May 2, 1977). That case resulted from CPSC banning all self-pressurized products intended or suitable for household us containing vinyl chloride. These articles were banned under §1261(q)(1)(B). The Commission followed only the first step of the rule-making process by publishing a proposed regulation ban such items and receiving comments. In its report CPSC mentions linking the deaths of industrial workers from cancer of the liv to vinyl chloride exposure (although but one death had been reported) and citing certain laboratory experiments conducted i a European University. Interested persons were invited to comm

on the proposed regulation. After receiving nine comments, three of which were critical, the Commission promulgated its Or classifying as "banned hazardous substances" all aerosol produc containing vinyl chloride and intended or suitable for household use. Pactra was one of the parties objecting to the ban and was denied a hearing. CPSC found the objections "practically void of reference to factual information which the Commission believed would lead to a contrary conclusion." It decidnd that Pactra had not stated "reasonable grounds" necessitating a hearing and a hearing was denied.

The 9th Circuit Court stated:

> "The procedural prerequisites to rulemaking under section 371(e) serve to impose a discipline on the agency's decision-making process, forcing it to present ordered proof to support its position. These procedures permit affected parties to express in a direct and participatory manner their opposition and criticism of governmental action before it becomes final. The public, and the regulated industries, as well as the agency, develop a better understanding of the problem at hand by following these procedures, and the resulting regulation may be a more refined and precise statement of agency policy. The procedural restrictions imposed on the agency by section 371(e) are admittedly severe, but they are stated with particularity in the rule-making statute, and we can find no reason to dispense with these procedures in this case. If the Commission believes that a substance should not be used where it has been shown to be potentially carcinogenic under intensive exposure conditions, its determination deserves thorough public examination. To implement that determination the agency must therefore follow the procedures Congress has prescribed.
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> The very absence of a formal record in this case makes it difficult for us to evaluate the agency's assertion that no record is needed or that the evidence on which it relies is sufficient to support its determination. At oral argument, the agency stated that its rule is supported by all of the files in its possession. The agency may not so neatly frustrate the formal judicial review intended by Congress when it

enacted the strict procedural requirements of section 371(e). In the instant case the statute specifically predicates judicial review on the existence of a formal record and further requires that that record be established by evidence adduced at a public hearing.

Both the failure to hold public hearings and the failure to produce the formal record mandated by the statute are defects that invalidate the Commission's regulation in this case. Accordingly, the Commission's order promulgating 16 C.F.R. §1500.1710(a)(10) is set aside."

An Order of clarification was filed by the Pactra court on June 13, 1977, which did not change the effect of the decision.

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The Commission's argument that Springs and American Textile Manufacturers Institute are attempting to split a cause of action between the AAMA case in the District of Columbia and the case in this court is without merit. The ATMI was brought into the AAMA case at the insistence of the Judge, on very short notice and the issues are not the same. ATMI and Springs Mills are not in privity with one another, so the action of one does not bind the other. Springs did not authorize the ATMI to act for it in the AAMA case, which involved only the extent of the TRIS ban and not the basic issue of the constitutionality of such ban. The cases cited by the Commission in support of its res judicata argument are not applicable to the present facts.

This Court is particularly concerned by the number and type of ex parte communications received and considered by the Commission during its deliberation of the TRIS matter and strongly urges the commissioners to read the recent case of Home Box Office, Inc. v. Federal Communications Commission, (D.C. Cir. March 25, 1977) in which the Court of Appeals remanded a decision to the FCC and required the appointment of a Special Hearing Examiner to determine the nature and source of all ex parte pleas and other approaches made to the Commission or its employees after the issuance of the first notice of proposed rule making.

If the commissioners of CPSC are to make decisions drastically affecting the lives and businesses of citizens, they should conduct their quasi-judicial proceedings in public, consider only the evidence produced at such public hearings and refrain from all ex parte communications. They may not avoid this ethic requirement by failing or delaying the filing of a petition so as to prevent the public from knowing a matter is under consideration. This was done in the present case, since CPSC gave no notice of the March 1976 petition of EDF, but continued to obtain information, which was used in its final decision, without providing an opportunity to interested parties to partic

It is evident from the methods used by, as well as t legal procedures avoided by, CPSC in the Pactra case and in the present case that the Commission does what it pleases with litt concern for the restrictions or limitations placed upon it by the Congress or the Constitution. These continuing acts are cl examples of the arrogance of bureaucracy and the abuse of power They are confirmation of Justice Frankfurter's warning in McNabb v. U. S., 318 U.S. 332, 347 (1943): "The history of liberty has largely been the history of observance of procedura safeguards."

Since CPSC has failed to follow the procedural safeguards enacted by Congress, has failed to provide a full ru making hearing with respect to any of its TRIS bans, it has dep the plaintiff of due process of law. Therefore, all of such TRIS bans and the amendments thereto are null and void.

Accordingly, its attempts to amend 16 C.F.R. §1500. by either adding a new subsection (d) or by later amending said subsection (d) to include as a "banned hazardous substance" children's wearing apparel made from fabric containing TRIS as

well as all fabric, yarn or fiber containing TRIS used or intended for use in children's wearing apparel, beginning with its publication in the Federal Register of April 8, 1977 and running through its publication in said register of June 1, 1977 must be and the same are hereby set aside.

IT IS FURTHER ORDERED that the Consumer Product Safety Commission be and it is hereby enjoined and restrained from attempting to apply or enforce against any party, any article, fabric, yarn or fiber any of its previously adopted TRIS regulations until such time as the Commission shall comply with the hearing procedures set forth in 21 U.S.C. §371(e), (f) and (g).

AND IT IS SO ORDERED.

ROBERT F. CHAPMAN
UNITED STATES DISTRICT JUDGE

June 22nd 1977
Columbia, South Carolina

[6355-01]

Title 16—Commercial Practices

CHAPTER II—CONSUMER PRODUCT SAFETY COMMISSION

PART 1500—HAZARDOUS SUBSTANCES AND ARTICLES; ADMINISTRATION AND ENFORCEMENT REGULATIONS

Children's Wearing Apparel Containing TRIS; TRIS and Fabric, Yarn or Fiber Containing TRIS; Withdrawal of Interpretations as Banned Hazardous Substances

AGENCY: Consumer Product Safety Commission.

ACTION: Withdrawal of interpretations.

SUMMARY: In this document, the Commission is withdrawing its interpretations published in the FEDERAL REGISTER on April 8, 1977, and June 1, 1977, concerning the chemical flame retardant TRIS and certain products containing TRIS. In a notice published elsewhere in today's FEDERAL REGISTER the Commission has issued a statement of policy that replaces the two interpretations. The Commission has taken this action to clarify its policy because the two interpretations have been misconstrued and have resulted in uncertainty and confusion in the marketplace.

DATES: The withdrawal is effective on December 6, 1977.

FOR FURTHER INFORMATION CONTACT:

Alan Shakin, Office of the General Counsel, Consumer Product Safety Commission, Washington, D.C. 20207, 202-634-7770.

SUPPLEMENTARY INFORMATION: The Commission published in the FEDERAL REGISTER on April 8, 1977 (42 FR 18850), and June 1, 1977 (42 FR 28060), interpretations of the Federal Hazardous Substances Act (FHSA) concerning TRIS-treated children's wearing apparel and related products. These interpretations have resulted in marketplace confusion and uncertainty about the status of the TRIS products. The Commission is therefore withdrawing them and replacing them with a statement of policy that is published in the Notices section of today's FEDERAL REGISTER (FR Doc. 77-34793).

The withdrawal of the Commission's interpretations does not in any way affect the notice given by the Commission on April 8 and June 1, 1977 that the Commission believes that TRIS-treated children's wearing apparel and TRIS and fabric, yarn or fiber containing TRIS intended for use in such apparel are banned hazardous substances within the meaning of the FHSA (15 U.S.C. 1261 *et seq.*). This withdrawal is intended only to clarify the fact that the Commission's prior FEDERAL REGISTER documents were

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available is authorized to deduct from the amount paid the grower 61 per hundred pounds to apply against overhead and receiving costs.

not duly promulgated regulations but were policy statements which provided public notice of the Commission's belief that these TRIS products are banned hazardous substances for the following reasons: TRIS is toxic within the meaning of 15 U.S.C. 1261(g) in that it has the capacity to produce personal injury or illness to man through ingestion or absorption through the body surfaces; it is a hazardous substance within the meaning of 15 U.S.C. 1261(f)(1)(A) in that it is toxic and may cause personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children. Therefore, the Commission believes that TRIS-treated children's wearing apparel and the other TRIS products are banned hazardous substances within the meaning of 15 U.S.C. 1261(q)(1)(A) in that such products are articles intended for use by children which bear or contain a hazardous substance in such a manner as to be susceptible of access by a child.

The background of this matter and the Commission's reasons for withdrawing the April 8 and June 1 interpretations are more fully discussed in the FEDERAL REGISTER document which issues the Commission's statement of policy.

Accordingly, pursuant to provisions of the Federal Hazardous Substances Act (secs. 2(f)(1)(A), (g), (q)(1)(A) and 10(a), 74 Stat. 372, 374, as amended 79 Stat. 1305; 15 U.S.C. 1261(f)(1)(A), (g), (q)(1)(A), 1269(a)) and under authority vested in the Consumer Product Safety Commission by the Consumer Product Safety Act (sec. 30(a), 86 Stat. 1231; 15 U.S.C. 2079(a)), the Commission amends 16 CFR 1500.18 by deleting paragraph (d).

Dated: November 28, 1977.

RICHARD E. RAPPS,
Secretary, Consumer Product Safety Commission.

[FR Doc.77-34792 Filed 12-5-77;8:45 am]

[6355-01]

CONSUMER PRODUCT SAFETY COMMISSION

TRIS, TRIS-TREATED CHILDREN'S WEARING APPAREL AND OTHER PRODUCTS CONTAINING TRIS

Statement of Policy

AGENCY: Consumer Product Safety Commission.

ACTION: Statement of policy.

SUMMARY: In this notice, the Commission is stating its enforcement policy toward the chemical flame retardant TRIS, and certain products containing TRIS, that it believes are banned hazardous substances under the Federal Hazardous Substances Act. In a separate document, published elsewhere in today's FEDERAL REGISTER, the Commission has withdrawn its two previously published interpretations concerning TRIS products because they have been misconstrued. The Commission is publishing this notice to clarify its policy.

DATES: The statement of policy is effective on December 8, 1977.

FOR FURTHER INFORMATION CONTACT:

Alan Shakin, Office of the General Counsel, Consumer Product Safety Commission, Washington, D.C. 20207, 202-634-7770.

SUPPLEMENTARY INFORMATION:

BACKGROUND

On April 8, 1977, the Consumer Product Safety Commission published in the FEDERAL REGISTER (42 FR 18850) a statutory interpretation that certain children's wearing apparel containing the chemical flame retardant Tris (2,3-dibromopropyl) phosphate ("TRIS") is defined as a "banned hazardous substance" under the Federal Hazardous Substances Act (FHSA, 15 U.S.C. 1261 et seq.). The apparel, as well as uncut TRIS-treated fabric intended for sale to consumers for use in such apparel, was included in the statutory definition if it was in interstate commerce on April 8, 1977 or introduced into interstate commerce after that date. In addition, TRIS-treated apparel and fabric sold to consumers before April 8, but not yet washed, was included in the definition.

On June 1, 1977, the Commission published in the FEDERAL REGISTER (42 FR 28060) a statutory interpretation that additional TRIS products were considered banned hazardous substances under the FHSA. These products included TRIS, and fabric, yarn, or fiber containing TRIS, which is used or intended for use in children's wearing apparel and which was in interstate commerce on April 8, 1977, introduced into interstate commerce after that date, or not yet washed (even if sold to consumers before April 8).

These interpretations have been the subject of legal actions filed against the Commission. In one such action filed in Federal court of South Carolina, a textile mill has asserted that the April 8 and June 1 FEDERAL REGISTER publications were substantive regulations rather than statutory interpretations. On June 23, 1977, Judge Robert F. Chapman found them to be regulations, set them aside, and enjoined the Commission from enforcing them (*Spring Mills, Inc.* v. *CPSC* and *EDF*, 434 F. Supp. 416, 435, D.S.C.). The U.S. Court of Appeals for the Fourth Circuit declined on August 11, 1977 to stay the injuction pending appeal, but affirmed that the injunction did not prohibit the Commission from taking individual enforcement actions under the FHSA against sellers and manufacturers of the TRIS products (Order in *Springs Mills, Inc.* v. *CPSC* and *EDF*, Nos. 77-1969 and 1970). The Commission has undertaken a number of individual enforcement actions in various Federal district courts. In the Fourth Circuit, the appeal of Judge Chapman's injunction is pending.

WITHDRAWAL OF INTERPRETATIONS

The April 8 and June 1 FEDERAL REGISTER publications and the *Springs Mills* litigation stemming from them, have contributed to widespread confusion and uncertainty among the consumers and business people affected. The Commission believes that its position concerning the status of the TRIS products named in those publications should be clarified as much as possible. Accordingly, the Commission has withdrawn the April 8 and June 1 publications in a separate document published elsewhere in today's FEDERAL REGISTER. In their place, the Commission is issuing the statement of policy below.

The Commission's position has been that the April 8 and June 1 FEDERAL REGISTER publications were interpretations of the FHSA that were validly issued. The interpretations were intended to state the Commission's enforcement policy and forewarn that individual enforcement actions would be filed in Federal District court whenever the Commission found a violation of the FHSA to be associated with any TRIS products that are banned hazardous substances. As interpretations, however, the April 8 and June 1 documents could not be relied on by the Commission to prove that any TRIS products are banned hazardous substances under the FHSA.

Similarly, the Commission cannot and will not rely on its new statement of policy to prove that any hazards are associated with TRIS products. In any enforcement action the Commission files, it is prepared to prove that the TRIS products are banned hazardous substances and that judicial relief is therefore necessary. In these enforcement actions, then, any affected party will be provided an opportunity to litigate the merits of the Commission's claim and thus will be afforded due process.

STATEMENT OF POLICY

The Commission believes that the TRIS products named in its April 8 and June 1 FEDERAL REGISTER documents are "banned hazardous substances" under the Federal Hazardous Substances Act (FHSA). This belief is based on definitions contained in the FHSA and on the existing technical evidence.

Under section 2(s) of the FHSA, "(t)he term 'toxic' shall apply to any substance • • • which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface." Under section 2(f)(1)(A) of the FHSA, "(t)he term 'hazardous substance' means • • • (a)ny substance or mixture of substances which • • • is toxic • • • if such substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children." Under section 2(q)(1), of the FHSA, "(t)he term 'banned hazardous substance' means • • • any toy, or other article intended for use by children, which is a hazardous substance, or which bears or contains a hazardous substance in such manner as to be susceptible of access by a child to whom such toy or other article is entrusted • • •."

The risk of injury associated with TRIS-treated children's wearing apparel, and with TRIS and fabric, fiber and yarn containing TRIS that is used

or intended for use in such apparel, is discussed in some detail in the April 8 and June 1 FEDERAL REGISTER documents. Briefly stated, the flame retardant chemical TRIS has been found in two-year National Cancer Institute (NCI) feeding studies to cause cancer in animals. TRIS cannot therefore be considered as a safe substance for human exposure. When used in children's wearing apparel, TRIS can enter the bodies of infants and children by absorption through the skin and by ingestion. The risk of cancer caused by such exposure is extremely high, according to estimates by the NCI and by other qualified parties.

The Commission therefore continues to believe that the TRIS products named in the April 8 and June 1 FEDERAL REGISTER documents are "banned hazardous substances" within the FHSA definition of this term (15 U.S.C. 1261(q)(1)(A)). Since the publication of the Commission's April 8 and June 1 FEDERAL REGISTER documents, additional scientific information has strengthened and reinforced the Commission's belief that these TRIS products are banned hazardous substances. The Commission's intent is to file individual enforcement actions to prevent the sale and to require the statutory repurchase of such products, according to the applicable provisions of the FHSA (15 U.S.C. 1263, 1264, 1265, 1267, and 1274).

The Commission hopes that this notice will encourage affected parties to refrain from any sales of TRIS products, or other activities that the Commission believes violate the FHSA, and to repurchase the TRIS products. Any parties who disagree about whether TRIS products are banned hazardous substances will have ample opportunity to challenge the Commission's technical evidence and legal conclusions at a hearing in federal district court.

Dated November 28, 1977.

RICHARD E. RAPPS,
Secretary, Consumer Product Safety Commission.

[FR Doc. 77-34121 Filed 11-5-77; 8:45 am]

[6355-01]

Title 16—Commercial Practices

CHAPTER II—CONSUMER PRODUCT SAFETY COMMISSION

SUBCHAPTER D—FLAMMABLE FABRICS ACT REGULATIONS

PART 1615—STANDARD FOR THE FLAMMABILITY OF CHILDREN'S SLEEPWEAR: SIZES 0 THROUGH 6X (FF 3-71)

PART 1616—STANDARD FOR THE FLAMMABILITY OF CHILDREN'S SLEEPWEAR: SIZES 7 THROUGH 14 (FF 5-74)

Final Rules

AGENCY: Consumer Product Safety Commission.

ACTION: Final rules.

SUMMARY: In this document the Commission issues final rules amending the Standards for the Flammability of Children's Sleepwear: Sizes 0 through 6X (FF 3-71) and 7 through 14 (FF 5-74) and rules and regulations under those standards affected by the amendments. The amendments delete requirements for residual flame time (RFT) in FF 3-71 and revise the method of testing trim in both FF 3-71 and FF 5-74. The Commission issues these amendments to reduce the necessity for the use of chemical flame retardants on fiber and fabric used in children's sleepwear as a result of the recent national concern over the addition of the chemical tris (2,3 dibromopropyl) phosphate (TRIS), a potential carcinogen, to children's sleepwear fabrics and garments. In addition, the Commission issues these amendments because after considering the proposal, the oral and written comments and other relevant matter it believes the provisions deleted and revised are not needed to protect the public adequately against unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage. The Commission is not amending FF 3-71 to delete requirements for garments under size 1.

EFFECTIVE DATE: The amendments shall take effect February 6, 1975.

FOR FURTHER INFORMATION CONTACT:

H. Elizabeth Jones, Directorate of Compliance and Enforcement, Consumer Product Safety Commission, Washington, D.C. 20207, 301-492-6617.

SUPPLEMENTARY INFORMATION:

BACKGROUND

On October 26, 1977, by publication of a notice in the FEDERAL REGISTER (42 FR 56563), the Commission proposed amendments to the Standards for the Flammability of Children's Sleepwear for Sizes 0 through 6X (FF 3-71) (16 CFR Part 1615) and Sizes 7 through 14 (FF 5-74) (16 CFR Part 1616). These standards were issued as a result of deaths and burn injuries to children from fires involving sleepwear. The standards require that children's sleepwear in sizes 0-6X and 7-14 and fabric intended for such sleepwear meet certain flammability test requirements. The proposed amendments would have deleted the requirement for residual flame time testing and criteria in FF 3-71, exempted garments in sizes below size one from FF 3-71, and revised the method of testing trim in both FF 3-71 and FF 5-74.

Although the standards do not require that chemicals be added to garments or fabric to meet the standards, some manufacturers have added chemical flame retardants to some fibers or fabrics to ensure that sleepwear garments produced from these fibers or fabrics consistently comply with the standards. Because of recent national concerns over the addition of the chemical TRIS, a potential carcinogen, and Pyrol FR-2 to children's sleepwear garments and fabrics, the Commission expedited a previously planned but not started review of the standards for the flammability of children's sleepwear. This Commission's review led to the proposed amendments to the sleepwear standards which the Commission believed would reduce the need for adding chemical flame retardants to a number of fabrics and fibers used in children's sleepwear while generally maintaining the level of protection against fire afforded by these standards.

In seeking ways to reduce the need for the use of chemical flame retardants in children's sleepwear, the Commission does not mean to imply that chemical flame retardants as a general class are not safe. However, the issue of whether any chemical is or can be a carcinogen or a mutagen concerns a rapidly changing and developing area of technology. Chemicals that are assumed to be safe one day, may be shown later to be suspect as new and more sophisticated test methodologies are developed. The Commission believes that it is desirable and beneficial to take any action it can to reduce the need to add chemicals to children's sleepwear for purposes of flame retardancy if that action does not unduly reduce the level of safety afforded by the sleepwear standards. Such action could also make available to consumers a wider selection of fabric for children's sleepwear at a lower average cost.

The amendments were not proposed solely to reduce the need for adding chemical flame retardants to material used in children's sleepwear. In determining to propose the amendments, the Commission also considered other factors such as injury data pertinent

to the provisions of the standards that are affected by the amendments, the potential for injury if the standards are amended as proposed, the desirability of increasing consumer choice as to the types of fabric used in children's sleepwear garments, and the possibility of reducing the average cost of children's sleepwear garments. The Commission in balancing all of the factors considered, preliminarily determined that issuance of the proposed amendments would not result in an unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage and that the proposed amendments were reasonable and appropriate.

The Commission proposed an amendment to delete the requirements for residual flame time (RFT) from FF 3-71. That requirement, which does not appear in FF 5-74, addresses the situation where flaming material from a burning garment melts and falls or drips (melt drip) onto another portion of the garment or a different garment or textile item, and causes it to ignite; or falls on the individual wearing the garment, resulting in a burn. A requirement for residual flame time was not included in FF 5-74 on the basis that older children are better able than younger children to protect themselves in case of a garment ignition. The Commission proposed to delete this requirement from FF 3-71 because it expected that the deletion would not substantially affect the safety level now provided by the standard, would decrease the need for adding chemical flame retardants to a number of fibers and fabrics to comply with the standard and would increase consumer choice by making more types of fabrics available. The amendment would primarily affect man-made fibers, such as nylon and polyester, and would allow a number of fabrics produced from these fibers to pass the standard without the addition of chemical flame retardants.

Trim is currently tested under both FF 3-71 and FF 5-74 in a vertical mode, which is the most stringent test position. The purpose of the trim test is to determine the flammability hazard associated with fabric/trim combinations to be used in children's sleepwear.

The proposed amendments to the trim testing requirements of both standards would provide a revised procedure for testing trim that is placed in a horizontal configuration on garments. Such trim would be tested in a horizontal position rather than a vertical position. The Commission proposed the amendments because mannequin and other laboratory tests indicate that when trim is used in a horizontal mode on the garment, testing in a horizontal rather than a vertical configuration is more representative of the burning exhibited by the garment. The Commission, therefore, concluded that trim used in a horizontal position on sleepwear garments should be tested in that position and that the revision of the trim testing requirement should increase consumer choice as to the amount and type of trim available on garments.

The Commission proposed the amendment to exempt sizes below one from FF 3-71 because burn injury data associated with garments in those sizes available at the time of proposal indicated that the safety level now provided by the standard would not be substantially reduced, the exemption would permit the use of more non-chemically treated fabrics, would increase consumer choice as to the types of fabrics available for use in those garments, and could result in reduced average retail prices for children's sleepwear garments in these sizes. The Commission in proposing the amendment also stated that it was considering requiring that noncomplying sleepwear in sizes below one be labeled to state that it does not comply with FF 3-71 and specifically asked for comment on this issue.

In addition, the Commission proposed that the three amendments be effective immediately and sought comment on this issue.

Comments on Proposal

Section 4(d) of the Flammable Fabrics Act (15 U.S.C. 1193(d)) requires that, in addition to providing an opportunity for making written submissions on a proposed amendment to a standard, the Commission shall provide interested persons with an opportunity for the oral presentation of data, views, or arguments. Oral presentations of behalf of 15 persons or organizations, on the proposed amendments, were heard by the Commission on November 16, 1977. In addition, 141 written comments were received by the end of the comment period on November 28, 1977, and more than 100 comments were filed after the end of the comment period. The late comments have been considered to the extent practicable.

The significant issues raised by the oral and written coomments are discussed below.

Residual Flame Time

Comments concerning the proposed amendment to delete the requirement for RFT in FF 3-71 were received from individual members of the National Advisory Committee for the Flammable Fabrics Act, representatives of the textile and apparel industry, representatives of the medical profession, retailers, trade associations and consumers. A large majority of these comments supported the proposed amendment.

When a fabric made of a thermoplastic man-made fiber, such as nylon or polyester, is subjected to a flame, the material frequently ignites and/or melts. This material may fall away as a drop (melt drip) or as a section of fabric and may continue to burn. Residual flame time is defined in FF 3-71 as the time the flaming drip or fabric fragment continues to burn on the base of the test cabinet after the ignition source has been removed from the test specimen. Any individual specimen that exhibits an RFT of more than 10 seconds fails the test criteria in FF 3-71.

Those commenters supporting the amendment to FF 3-71 to delete the requirement for RFT generally did so on the grounds that the amendment would reduce the need for the use of chemical flame retardants on children's sleepwear and would not substantially affect the level of safety now provided by the standard. Those persons supporting the amendment also stated that it would increase consumer choice by making more fabrics available for use in sleepwear garments and would lower on the average manufacturing costs and thereby garment prices.

Those commenters opposing the amendment to FF 3-71 to delete the requirement for RFT did so for a number of reasons. Several of these commenters stated that when FF 3—71 was originally issued by the Department of Commerce in 1971, the provision for RFT was included in order to give the greatest possible protection to small children because they cannot protect themselves. These commenters argued that flaming melt drip is a hazard in that it can cause severe localized burns, and flaming melt drip can burn parts of the body that are not adjacent to the burning sections of the garment. In addition, they stated that flaming melt drip can serve as an ignition source for other fabrics or materials. They further contended that no new data or facts have been developed since FF 3-71 was originally issued that justify eliminating the requirement for RFT and that the elimination of RFT will lower the safety level now provided by the standard. These commenters also argued that elimination of RFT could result in the use of fibers in children's sleepwear garments that have particularly bad flaming melt drip characteristics.

Manufacturers of fibers referred to, by them, as inherently flame resistant argued that there are sufficient quantities of these fibers available to meet the demand for fabrics that comply with the RFT requirements of FF 3-71. They contended that elimination of the RFT requirement is not necessary to reduce the use of chemical flame retardants in children's sleepwear because inherently flame resis-

tant fibers are available in sufficient quantities. Thus, they contended there is no need for a trade-off in safety because there is no necessity for using chemical flame retardants. Further they contended that elimination of the RFT requirement would decrease consumer choice by driving out of this market the more expensive inherently flame resistant fibers.

The Commission recognizes that the provision for RFT was included in FF 3-71 to address the phenomenon of "flaming melt drip" whereby material from a burning garment made of manmade fibers could melt and fall or drip onto another portion of the garment, onto a different garment or textile item causing it to ignite, or on the individual wearing the garment, resulting in a burn. The Commission recognizes that flaming as well as nonflaming melt drip has the potential to cause injury.

Very little injury data is available which focuses on flaming and nonflaming melt-drip. Data in the Flammable Fabrics Accident Case and Testing System (FFACTS) as of July 1975, when the system became inactive, shows 4,172 cases of which 714 involved sleepwear. Of the sleepwear cases, 312 involved children through the age of 12. In 12 of these cases it was reported that the sleepwear garment melted or dripped. In two of these cases it was stated that the melted fabric adhered to the skin of the victims, which contributed to or caused the burn injury. The garment in one of the two cases was chemically flame retarded. In two other cases, it was stated that the garment melted, adhering to the clothing worn underneath, but did not appear to contribute to the victim's injuries. In the eight remaining cases, the relationship of melt-drip to the injury was not specified.

Physicians treating children in burn centers in Boston, Mass. and Galveston, Tex., while acknowledging the potential for melt drip to cause burn injury stated in their comments on the proposal that they did not consider melt drip to be a significant factor in injury severity.

The lack of reported injury cases resulting from melt drip cannot necessarily be attributed to the RFT requirements in FF 3-71 as suggested by several commenters. The requirement does not eliminate flaming melt drip but rather limits the flame to 10 seconds. Thus, the RFT requirement does not eliminate the potential for injury from either non-flaming drips or molten polymer, both of which would result in burns on contact with the skin. Moreover, there is also a lack of reported injuries resulting from melt-drip in garments subject to FF 5-74, which has no requirement for RFT. Elimination of the RFT provision as in FF 3-71 is not expected to increase the number or severity of these injuries.

One industry commenter submitted to the Commission a number of questionnaire sheets filled out by attorneys handling clothing burn cases. The responses on a number of the questionnaires indicated that the garment involved in the litigation melted and dripped and that the melt drip aggravated the injury. In addition a number of the responses on the questionnaires stated that cotton garments melted and dripped thus aggravating the injury even though cotton garments from a technological standpoint cannot melt and drip. None of the responses to the questions were supported by any technical data.

Other data submitted to the Commission in response to the proposed amendments supported the conclusion that injuries caused by melt drip are not particularly severe and, therefore, do not present an unreasonable risk. In experiments conducted on anesthetized shaved rats and pigs, it was shown that the extent of the injury due to both flaming and non-burning melt drip was limited. In the experiments conducted on the shaved rats, the size of the injury never exceeded ½ to ¾ square inches and the severity did not exceed second degree burns. In the experiments with the pig skin, the area and severity of the burn were similarly limited.

These studies indicate that when a melt drip injury occurs, it is usually a localized second degree burn. Such burns, while causing painful localized trauma at the time of the burn, are not likely to cause long lasting physical and psychological damage.

An importer of inherently flame resistant fiber submitted a film to the Commission, purportedly demonstrating the hazard posed by melt drip. This film was designed to demonstrate the resistance of fabrics and garments produced from the inherently flame resistant fiber to both large and small ignition sources. The film accomplishes the purpose. Part of the film demonstrated the effect of a large sustained flaming ignition source on selected fabrics, including one sample of polyester. The polyester fabric shrank from the flame, melted and dripped. This is to be expected with the large, sustained ignition source used. The phenomenon depicted in the film however, has little relationship to the sleepwear fires being addressed by the standards, where the ignition source is usually a small flame such as that from a match or lighter, and of short duration.

In determining whether it is reasonable to delete the RFT provision in FF 3-71 addressing flaming melt drip, the Commission considers factors in addition to the reduction of hazard. It also considers such factors as manufacturing costs, retail prices, garment performance, consumer choice, and the supply of fabric that does not require the addition of a chemical flame retardant.

The Commission believes, on the basis of information provided in the comments and other available information, that amending FF 3-71 to delete the RFT requirement would result in an increase in the amount of untreated polyester and nylon fabric that could be used in garments subject to that standard. When the children's sleepwear standard was first promulgated, some polyester and nylon fabrics were found to occasionally fail the RFT requirement. This problem was overcome by treatment of these fabrics with chemical flame retardants. Elimination of the RFT requirement will permit many of these polyester and nylon fabrics to comply with the standard, without chemical flame retardant treatment.

Suppliers of inherently flame resistant fibers and yarn indicated that there are adequate quantities of inherently flame resistant material available to supply the children's sleepwear market with fabric that complies with FF 3-71. They therefore argue that no garments need be produced that have chemical flame retardants added. It is the Commission's view, however, that while inherently flame resistant fabric may indeed be available in adequate quantities to supply the children's sleepwear market, elimination of the RFT provision will allow the use of additional nonchemical flame retardant treated fabrics in children's sleepwear in those sizes subject to FF 3-71. It is the Commission's view, at this time, that any action it can take that would further reduce the necessity for adding flame retardant chemicals to children's sleepwear while, at the same time, making the widest possible selection of fabrics available without substantially affecting the level of safety afforded by the sleepwear standards, is desirable and beneficial. In this connection, the Commission notes that even fabric referred to in the trade as "inherently flame resistant" may have chemicals added for the purpose of flame retardancy at some stage of production of the fiber.

In considering whether to amend FF 3-71 to delete requirements for RFT, the Commission has also considered the potential effect of this action on the cost of sleepwear garments. Data before the Commission indicates that elimination of the RFT provision will allow garment manufacturers to use lower priced (untreated) fabric in their manufacturing process. This could result in lower average retail prices for children's sleepwear than would be the case without the amendment. While cost reduction alone is not, in the Commission's view, an adequate

reason to eliminate the RFT requirement in the standard, it is one of the factors considered by the Commission.

Several suppliers of inherently flame resistant fibers have expressed the opinion that if the RFT requirement is deleted, inherently flame resistant fibers will not be competitive with untreated polyester fibers because they will cost more and, therefore, will no longer be used in children's sleepwear. It appears to the Commission, on the basis of data submitted in the comments and other available information, that the share of the children's sleepwear market a fiber obtains and holds does not depend on the price of the fiber alone. Inherently flame resistant fibers have found their way into the children's sleepwear market during the last several years, even though their prices have been in the upper end of the prevailing price range for this market. Thus, anticipated price changes as a result of the elimination of RFT from FF 3-71 do not appear to be sufficient cause to exclude any fiber from the sleepwear market.

On the basis of the limited injury data available which can be directly attributed to melt drip, the relative low severity of such injuries, the likelihood of increasing the selection while reducing average retail prices of fabrics and garments that will be available to consumers if the requirements for RFT are deleted, and the likely availability of additional types of fabrics that can meet the requirements of FF 3-71 without the addition of chemical flame retardants, the Commission determines that the RFT requirement in FF 3-71 is not needed for the standard to adequately protect the public against unreasonable risk of the occurrence of fire leading to death, injury or significant property damage. Accordingly, the Commission amends FF 3-71 to delete the requirement for residual flame time as set forth below. The Commission will monitor the results of this amendment to determine its effect on sleepwear burn injuries. If burn injury or other information is found indicating a reduction in the safety level of the standard as a result of elimination of the RFT requirement, the Commission will reevaluate this amendment and after evaluating the factors discussed above consider further amendment of FF 3-71 regarding RFT.

Section 1615.4(a) of the FF 3-71 concerning the test chamber provides that a piece of asbestos paper be used to catch any melt drip and that this paper be changed after each specimen which drips has been tested. In view of the Commission's decision to delete the requirement for RFT which addresses melt drip, this procedure is no longer necessary and therefore has been eliminated from the Standard.

Deletion of Coverage for Sleepwear in Sizes Below Size One.

Comments concerning the proposal to amend FF 3-71 to exempt coverage of sleepwear in sizes below size one were received from individual members of the National Advisory Committee for the Flammable Fabrics Act, representatives of the textile and apparel industry, representatives of the medical profession, retailers, trade associations and consumers.

The Commission, on the basis of the oral and written comments, data compiled by the Commission staff concerning burn injuries involving children under 12 months of age, and other relevant material, voted 2-1 against issuing this proposed amendment.

The Consumer Product Safety Act provides that the Commission shall consist of 5 Commissioners and that 3 Commissioners constitute a quorum for transaction of business. There are currently 2 vacancies on the Commission. The internal voting procedure of the Commission presently requires that the Commission may not take action on a matter if there is a dissenting vote, although the Commission may act if two Commissioners vote to do so and one Commissioner abstains. Because the Commission voted 2 to 1 on the question of issuing the amendment exempting sleepwear garments in sizes less than one, no action can be taken to issue or withdraw the amendment at this time. This amendment may be further considered when additional Commissioners join the Commission.

Trim Testing

Comments concerning the proposed amendment to revise the method for testing trim in FF 3-71 and FF 5-74 were received from individual members of the National Advisory Committee for the Flammable Fabrics Act, representatives of the textile industry, representatives of the medical profession, retailers, trade associations and consumers. A large majority of these comments supported the proposed amendment.

The proposed amendment would allow manufacturers who are producing sleepwear garments with the garment trim in a horizontal configuration to test that trim for flammability in a horizontal mode on the test specimen, rather than in the more severe vertical configuration on the test specimen.

Those persons supporting the amendment to FF 3-71 and FF 5-74 to modify the method of testing trim did so generally on the grounds that the amendments would reduce the need for the use of chemical flame retardants in trim used on sleepwear and would not substantially affect the level of safety now provided by the standards. They also stated that the standards as modified would continue to address hazards presented by burning trim as it occurs in real life situations, and would increase consumer choice in garment design and fabric availability.

Those persons who opposed the proposed amendment did so generally on the basis that the amendment would decrease the level of safety now provided to consumers. Several commenters stated that the change was not necessary because inherently flame resistant fibers were available for trim that would comply with the standards when tested in a vertical test mode.

It is the view of the Commission that testing trim in a horizontal configuration rather than in a vertical configuration is more representative of the burning characteristics of trim used on sleepwear garments in a horizontal mode. The Commission on the basis of laboratory tests, conducted by Clemson University on behalf of a garment manufacturer believes that the level of safety afforded by the standards will not be affected by this amendment. In these tests nightgowns were constructed from fabric commonly used to make children's sleepwear. These nightgowns were trimmed with lace produced from nylon, polyester and cotton, and self fabric ruffle.

The garments were then burned to determine the effect of the trim on the flammability of the garments. Based on these tests, the flammability hazard for trim used in a horizontal configuration was judged to be small, much less than that of trim in a vertical configuration. Therefore, testing of trim in a horizontal configuration on the test specimen, where the trim is used horizontally on the sleepwear garment and in a vertical configuration on the test specimen when the trim is to be used vertically on the sleepwear garment appears to provide a better assessment of the flammability hazard involved than does the current procedure in the standard which requires all trim to be tested in a vertical configuration. Further, testing in this manner is expected to have a minimal effect on the level of safety provided by the standards.

While inherently flame resistant fibers may be available for use in trim, the amendment will result in an increase in the amount and type of trim available for use on sleepwear garments. It should also reduce the need for chemical flame retardant treatment of trim. This issue is discussed in more detail under the heading "Residual Flame Time" above.

In view of the foregoing, the Commission concludes that FF 3-71 and FF 5-74 should be amended by revising the trim test procedures to allow testing of trim in a horizontal configu-

ration on a test specimen where the trim is to be used horizontally on the sleepwear garments. The Commission also concludes that a vertical test method for trim used on sleepwear garments in a horizontal position is not necessary to adequately protect the public against unreasonable risk of the occurrence of fire leading to death or injury.

As in the case of the RFT and sizes below one nmendments, the results of the trim test modification will be monitored to determine the effect of the amendment on sleepwear injuries. If burn injuries or other information are found indicating a reduction in the safety level of the standards as a result of the test modification, the Commission will reevaluate this amendment and after analyzing the factors discussed above, consider further amendment of FF 3-71 and FF 5-7 regarding trim testing.

Effective Date

Comments concerning when the proposed amendments should be effective if issued by the Commission were received from individual members of the National Advisory Committee for the Flammable Fabrics Act, representatives of the textile industry, representatives of the medical profession, retailers, and trade associations. In all but a few of the comments, it was recommended that the amendments be effective immediately after promulgation of the amendment. One commenter suggested that the amendments be effective three months after they are issued in order to allow industry to adapt to the amendments and to allow existing inventories of fabrics to be depleted. Another commenter suggested that the amendments be effective one year after promulgation in order to permit the industry to adapt to the amendments.

As discussed above, the Commission has determined that the provisions of the sleepwear standards affected by the amendments are not needed to adequately protect the public against an unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage. This determination is based in part on the expectation that the amendments are likely to result in the availability of additional types of fabrics for use in sleepwear garments that can meet the requirements of the standards without the addition of chemical flame retardants, and a possible decrease in the average cost of children's sleepwear, while maintaining the level of safety now provided by the standard.

In view of the foregoing, the Commission finds that it is in the public interest that the amendments be made effective upon their publication in the FEDERAL REGISTER. Therefore, on or after that date any sleepwear garment, no matter when manufactured or introduced into commerce, that complies with the standard as amended may be sold. Moreover, since the amendments relieve restrictions, or in the case of sizes below one, grant an exemption, the Commission finds, in accordance with 5 U.S.C. 553(d), that it is not necessary to delay the effective date of the amendments in order for the textile industry to adapt to them.

Environmental Considerations

In proposing the amendments to FF 3-71 and FF 5-74 the Commission concluded that the proposed amendments are expected to reduce the use of chemical flame retardants, and that this reduction should in general have beneficial impacts on the environments. The Commission received no comments on this issue and reaffirms the conclusion made in the proposal.

Other Comments

The Commission received a number of comments involving issues not directly related to the proposed amendments. These comments involve matters such as flammability standards in general and revisions to the sampling plan included in the standard. The Commission will consider these comments in the context of its fire-burn program and will take any action on the issues raised it considers appropriate.

Conclusion and Issuance

The Commission has considered the published proposal, the oral and written responses to the proposal and other relevant material. Based on its analysis as discussed above, the Commission amends the Standards for the Flammability of Children's Sleepwear, FF 3-71 and FF 5-74, to delete the requirement in FF 3-71 for residual flame time and to revise the method of testing trim in both FF 3-71 and FF 5-74.

Therefore, pursuant to provisions of the Flammable Fabrics Act as amended (Pub. L. 90-189, sec 4(a), 4(b), 81 Stat. 569; U.S.C. 1193(a)(b), 1201, and under authority vested in the Commission by the Consumer Product Safety Act (Pub. L. 92-573, sec. 30(b), 86 Stat. 1231; 15 U.S.C. 2079(b), 16 CFR 1615 and 1616 are amended as follows:

1. Section 1615.1 is amended as shown below:

Sections 1615.1 (e) is amended and (g) is reserved to read as follows:

§ 1615.1 Definitions.

* * * * * *

(e) "Test Criteria" means the maximum char length which a sample or specimen may exhibit in order to pass an individual test.

* * * * * *

(g) [Reserved].

§ 1615.3 [Amended]

2. Section 1615.3(a) is amended and (b) (3) is deleted as shown below:

(a) *Summary of Test Method.* Five conditioned specimens, 8.9 x 25.4 cm. (3.5 x 10 in.), are suspended one at a time vertically in holders in a prescribed cabinet and subjected to a standard flame along their bottom edge for a specified time under controlled conditions. The char length is measured.

(b) * * *

(3) [Deleted].

§ 1615.4 [Amended]

3. Section 1615.4(a) is amended as follows:

(a) *Apparatus—(1) Test Chamber.* The test chamber shall be a steel cabinet with inside dimensions of 32.9 cm. (12 15/16 in.) wide, 32.9 cm. (12 15/16 in.) deep, and 76.2 cm. (30 in.) high. It shall have a frame which permits the suspension of the specimen holder over the center of the base of the cabinet at such a height that the bottom of the specimen holder is 1.7 cm. (¾ in.) above the highest point of the barrel of the gas burner specified in paragraph (c) of this section and perpendicular to the front of the cabinet. The front of the cabinet shall be a close fitting door with a glass insert to permit observation of the entire test. The cabinet floor may be covered with a piece of asbestos paper, whose length and width are approximately 2.5 cm. (1 in.) less than the cabinet floor dimensions. The cabinet to be used in this test method is illustrated in Figure 1 and detailed in Engineering Drawings, Nos. 1 to 7.

4. Section 1615.4(b) (2) is amended as follows:

(b) * * *

(1) * * *

(2) Different colors or different print patterns of the same fabric may be included in a single Fabric or Garment Production Unit, provided such colors or print patterns demonstrate char lengths that are not significantly different from each other as determined by previous testing of at least three samples from each color or print pattern to be included in the Unit.

5. Section 1615.4(c) (1) and (3) are amended as follows:

(c) * * *

(1) *Normal Sampling.* Select one Sample from the beginning of the first Fabric Piece (Piece) in the Unit and one Sample from the end of the last Piece in the Unit, or select a sample from each end of the Piece if the Unit is made up of only one Piece. Test the

two selected Samples. If both Samples meet all the Test Criteria of § 1615.3(b), accept the unit. If either or both of the Samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1615.3(b)(1), reject the Unit. If two or more of the individual specimens, from the 16 selected specimens fail, the 25.4 cm. (16 in.) char length, .3(b)(2), reject the Unit. If only one individual specimen, from the 16 selected specimens, fails the 25.4 cm. (16 in.) char length, § 1515.3(b)(2), select five additional specimens from the same end of the Piece in which the failure occurred, all five to be taken in the fabric direction in which the specimen failure occurred. If this additional Sample passes all the test criteria, accept the Unit. If this additional Sample fails any part of the test criteria, reject the Unit.

(2) • • •

(3) *Tightened Sampling.* The level of sampling required for acceptance shall be increased when a Unit is rejected under the Normal Sampling plan. The Tightened Sampling shall be the same as Normal Sampling except that one additional Sample shall be selected and cut from a middle Piece in the Unit. If the Unit is made up of less than two pieces, the Unit shall be divided into at least two Pieces. The division shall be such that the Pieces produced by the division shall not be smaller than 100 linear yards or greater than 2,500 linear yards. If the unit is made up of two Pieces, the additional Sample shall be selected from the interior end of one of the Pieces. Test the three selected Samples. If all three selected Samples meet all the test criteria of § 1615.3(b), accept the unit. If one or more of the three selected Samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1615.3(b)(1), reject the Unit. If two or more of the individual specimens from the 15 selected specimens fail the 25.4 cm. (16 in.) char length, § 1615.3(b)(2), reject the unit. If only one individual specimen, of the 15 selected Specimens fails the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), select five additional specimens from the same end of the same piece in which the failure occurred, all five to be taken in the fabric direction in which the Specimen failure occurred. If this additional Sample passes all the test criteria, accept the Unit. If this additional Sample fails any part of the test criteria, reject the Unit. Tightened Sampling may be discontinued and Normal Sampling resumed after five consecutive Units have all been accepted using Tightened Sampling. If Tightened Sampling remains in effect for 15 consecutive units, production of the specific fabric in Tightened Sampling must be discontinued until that part of the process or component which is causing failure has been identified and the quality of the end product has been improved.

• • • • • •

6. Section 1615.4(c)(4)(iv) is amended as shown below:

(c) • • •

(4) • • •

(iv) Select and cut a Sample from each end of each adjoining Piece beginning adjacent to the Piece which failed. Test the two Samples from the Piece. If both Samples meet all the test criteria of § 1615.3(b), the Piece is acceptable. If one or both of the two selected Samples fail the 17.8 cm. (7.0 in.) average char length criterion, § 1615.3(b)(1), the Piece is unacceptable. If two or more of the individual Specimens, from the 10 selected specimens, fail the 25.4 cm. (10 in.) char length § 1615.3(b)(2), the Piece is unacceptable. If only one individual specimen, from the 16 selected specimens, fails the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), select five additional specimens from the same end of the Piece in which the failure occurred, all five to be taken in the fabric direction in which the specimen failure occurred. If this additional Sample passes all the test criteria, the Piece is acceptable. If this additional Sample fails any part of the test criteria, the Piece is unacceptable.

• • • • • •

7. Section 1615.4(c)(4)(vi) is amended as shown below:

(c) • • •

(4) • • •

(vi) Alternatively, individual Pieces from a rejected Unit containing three or more Pieces may be tested and accepted or rejected on a Piece-by-Piece basis according to the following plan, after removing the Piece or Pieces, the failure of which resulted in Unit rejection. Select four Samples (two from each end) from the Piece. Test the four selected Samples. If all four Samples meet all the Test Criteria of § 1615.3(b), accept the Piece. If one or more of the Samples fail the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), reject the Piece. If two or more of the individual Specimens from the 20 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1515.3(b)(1), reject the Piece. If only one individual specimen, from the 26 selected specimens, fails the 25.4 cm. (16 in.) char length, § 1615.3(b)(2), select two additional Samples from the same end of the Piece in which the failure occurred. If these additional two Samples meet all the Test Criteria of § 1615.3(b), accept the Piece. If one or both of the two additional Samples fail any part of the Test Criteria, reject the Piece.

• • • • • •

8. Section 1615.4(d)(2)(i) is amended as shown below:

(d) • • •

(2) • • •

(i) *Seams.* Make three Samples (15 specimens) using the longest seam type and three Samples using each other seam type 18 inches or longer that is to be included in the garment. Prior to testing, assign each specimen to one of the three Samples. Test each set of three Samples and accept or reject each seam design in accordance with the following plan:

(A) If all three Samples meet all the test criteria of § 1615.3(b), accept the seam design. If one or more of the three Samples fail the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), reject the seam design. If three or more of the individual Specimens from the 15 selected specimens fail the 25.4 cm. (10 in.) char length, § 1515.3(b)(2), reject the seam design. If only one of the individual specimens from the 15 selected specimens fails the 25.4 cm. (16 in.) char length, § 1615.3(b)(2), accept the seam design.

(B) If two of the individual specimens from the 15 selected specimens, fail the 25.4 cm. (16 in.) char length, § 1615.3(b)(2), select three more Samples (15 specimens) and retest. If all three additional Samples meet all the test criteria of § 1615.3(b) accept the seam design. If one or more of the three additional Samples fail the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), reject the seam design. If two or more of the individual specimens from the 15 selected specimens, fail the 25.4 cm. (16 in.) char length, § 1615.3(b)(2) reject the seam design. If only one of the individual specimens from the 15 selected specimens, fails the 25.4 cm. (16 in.) char length § 1615.3(b)(2) accept the seam design.

• • • • • •

9. Section 1615.4(d)(2)(ii) (A) and (B) are revised as shown below:

(d) • • •

(2) — • • •

(ii) *Trim (A)(1)* Make three samples (15 specimens) from each type of trim to be included in the garment. For trim used only in a horizontal configuration on the garment, specimens shall be prepared by sewing or attaching the trim horizontally to the bottom edge of an appropriate section of untrimmed fabric. Sleeve and neckline trim may not be tested in this manner. Where more than one row of trim is used on the garment, specimens shall be prepared with the same configuration (same number of rows and spacing between rows up to the limit of the specimen size) as the garment.

(2) For trim used in other than a horizontal configuration, specimens shall be prepared by sewing or attach-

ing the trim in the center of the vertical axis of an appropriate section of untrimmed fabric, beginning the sewing or attachment at the lower edge of each specimen.

(3) For either configuration, the sewing or attachment shall be made in the manner in which the trim is attached in the garment.

(B)(1) Sewing or otherwise attaching the trim shall be done with thread or fastening material of the same composition and size to be used for this purpose in the garment and using the same stitching or seamtype. Trim used in the horizontal configuration shall be sewn or fastened the entire width (smaller dimension) of the specimen. Trim used in other than the horizontal configuration shall be sewn or fastened the entire length (longer dimension) of the specimen.

(2) Prior to testing, assign each specimen to one of the three samples. Test the sets of three samples and accept or reject the type of trim and design on the same basis as seam design. A type of trim and design accepted when tested in a vertical configuration may be used in a horizontal configuration without further testing.

10. Section 1615.4(d)(3)(i)(A) is amended as shown below:

(d) • • •

(3) • • •

(i)(A) From each Unit select at random sufficient garments and cut three Samples (15 specimens) from the longest seam type. No more than five specimens may be cut from a single garment. Prior to testing, assign each specimen to one of the three Samples. All specimens cut from a single garment must be included in the same Sample. Test the three selected Samples. If all three Samples meet all the test criteria of § 1615.2(b), accept the Unit. If one or more of the three Samples fail the 17.3 cm. (7 in.) average char length criterion, § 1615.3(b)(1), reject the Unit. If four or more of the individual specimens, from the 15 selected specimens, fail the 25.4 cm (10 in.) char length, § 1615.3(b)(2), reject the Unit. If three or less of the individual specimens, from the 15 selected specimens, fail the 25.4 cm. (10 in.) char length, § 1615.3(b)(2), accept the Unit.

• • • • • •

11. Section 1615.4(d)(3)(i)(B)(3) is amended as shown below:

(d) • • •

(3) Test the Three Samples. If all three Samples pass the 17.8 cm. (7 in.) average char length criterion, § 1615.3(b)(1), and if three or less individual specimens fail by charring the entire specimen length, accept the Unit. If the Unit is not accepted in the above test, three Samples (15 specimens) of the longest seam type shall be made using fabric and thread from production inventory and sewn on production machines by production operators. The individual fabric sections prior to sewing must be no larger than 30.3 x 63.3 cm. (8 in. x 25 in.) and must be selected from more than one area of the base fabric. Test the three prepared Samples. Accept or reject the Unit as described previously in this subsection.

12. Section 1615.4(g)(2)(i) is amended as shown below:

(g) • • •

(2) Specimen Burning and Evaluation. (i) One at a time, the mounted specimens shall be removed from the desiccator and suspended in the cabinet for testing. The cabinet door shall be closed and the burner flame impinged on the bottom edge of the specimen for 3.0±0.2 seconds. Flame impingement is accomplished by moving the burner under the specimen for this length of time, and then removing it.

12. Section 1615.4(g)(3) is amended as shown below:

(g) • • •

(3) *Report.* Report the value of char length, in centimeters (inches), for each specimen, as well as the average char length for each set of five specimens.

Subpart B—Rules and Regulations

Section 1615.31 is amended as shown below:

13. Section 1615.31(e)(1)(iii) is amended as shown below:

(e) • • •

(1) • • •

(iii) Test results and details of all tests performed, both prototype and production, including char lengths of each specimen tested, average char length of the samples required to be tested, details of the sampling procedure employed, name and signature of persons conducting tests, date of tests, and all other records necessary to demonstrate compliance with the test procedures and sampling plan specified by the standard or authorized alternate sampling plan.

14. Section 1616.4(e)(2)(ii) (A) and (B) are revised as shown below:

§ 1616.4 Sampling and Acceptance Procedures.

• • • • • •

(e) • • •

(2) • • •

(ii) Trim (A) Make three samples (15 specimens) from each type of trim to be included in the garment. For trim used only in a horizontal configuration on the garment, specimens shall be prepared by sewing or attaching the trim horizontally to the bottom edge of an appropriate section of untrimmed fabric. Sleeve and neckline trim may not be tested in this manner. Where more than one row of trim is used on the garment, specimens shall be prepared with the same configuration (same number of rows and spacing between rows up to the limit of the specimen size) as the garment. For trim used in other than a horizontal configuration, specimens shall be prepared by sewing or attaching the trim to the center of the vertical axis of an appropriate section of untrimmed fabric, beginning the sewing or attachment at the lower edge of each specimen. For either configuration, the sewing or attachment shall be made in the manner in which the trim is attached in the garment.

(B) Sewing or otherwise attaching the trim shall be done with thread or fastening material of the same composition and size to be used for this purpose in the garment and using the same stitching or seamtype. Trim used in the horizontal configuration shall be sewn or fastened the entire width (smaller dimension) of the specimen. Trim used in other than the horizontal configuration shall be sewn or fastened the entire length (longer dimension) of the specimen. Prior to testing, assign each specimen to one of the three samples. Test the sets of three samples and accept or reject the type of trim and design on the same basis as seam design. A type of trim and design accepted when tested in a vertical configuration, may be used in a horizontal configuration without further testing.

• • • • • •

(Sec. 4(a), 4(b) (15 U.S.C. 1193(a), 1193(b)), 81 Stat. 569; sec. 30(d), (15 U.S.C. 2079(b)), 86 Stat. 1231.)

Effective date: February 6, 1978.

Dated: February 2, 1978.

SADYE E. DUNN,
Acting Secretary, Consumer Product Safety Commission.

[FR Doc. 78-2339 Filed 2-3-78; 8:45 am]

Mr. BYINGTON. Yes, sir.
Mr. DANIELSON. That is today's hindsight standard.
All right.
Thank you very much for your help.
You have been very frank and I appreciate it.
Mr. Kindness?
Mr. KINDNESS. Thank you, Mr. Chairman.
Mr. DANIELSON. I have taken far too long.
Mr. KINDNESS. Mr. Chairman, I think it's very helpful to get into those aspects of this complicated case. In fact, the question I have, at this point, focuses on the legal tangle that needs to be considered by this subcommittee. If the fourth circuit determines that Judge Chapman was correct in his determination in the district court in South Carolina, that the original ban was adopted not in accordance with the Administrative Procedure Act and due process, then what happens as between the garment manufacturers and the retailers particularly, where there have been repurchase payments made?

Could the garment manufacturers then turn around and recover from the retailers, to whom they have made the payments, the amount of those payments, because the ban was not legally in effect?

Mr. BYINGTON. I think that the overly simplified off-the-cuff answer is that decision would probably be controlled by the Uniform Commercial Code.

Mr. KINDNESS. Isn't it important for this subcommittee to consider in the contents of this legislation, if there is to be such legislation reported, some of the guidelines for recovery as between the various parties in the distribution chain? Isn't that necessary here so that equity will be served, since we are talking about an extraordinary remedy to begin with?

Mr. BYINGTON. Yes, Mr. Kindness. Personally, I agree with where Chairman Danielson's assessment of where somebody had reason to believe that a hazard was involved I think that that time is sometime in 1976, depending on how you weight the evidence.

But the earliest time that I think it would be fair to say that the industry had reason to believe would be sometime in 1976. They certainly had reason to believe once the NCI study data became available, but there were fewer than 60 days from that time to our action of April.

The point that I tried to make earlier is that regardless of how you look at the situation, and regardless of what happens in the court, there is going to be one segment in the marketplace, primarily the cutter and sewers that is going to get left with the largest piece of the recovery. That is also the one segment of the marketplace that has the least economic capacity to sustain it.

Mr. KINDNESS. So the considerations that ought to be made in this legislation would include the point in time at which there reasonably arrived a concern about carcinogenic characteristics of Tris and the transactions that took place after that point in time?

Mr. BYINGTON. I think you are faced with a decision of irreparable harm regardless of where the court comes out or what is going to happen in the marketplace. If the court rules that the mills are excluded, for whatever reason, there is no place up the chain for

the cutters and sewers to go for recovery. The retailers have been effectively taken out by section 15 of the Federal Hazardous Substances Act, which requires us to move up to the so-called manufacturer. If the court determines that the manufacturer is the person who manufactured the goods for sale and retail—that is, the cutter and sewer—the retailer is effectively taken out by statute, and the cutter and sewer is left holding the whole thing.

If the court goes further and says, as you indicated, that we have violated the Administrative Procedures Act, et cetera, and rules that there is no prohibition on Tris the same parties are going to be left holding the bag. It is not likely that the mills are going to change their position of the last year or two and accept the goods in return, and the retailers certainly will not buy the garments back for sale at retail in today's environment.

So whether or not the cutters and sewers have any recourse in the Uniform Commercial Code we discussed, if the prior sale could be made to stick and so on, we are still looking at extensive, time consuming, costly litigation. The question is where and how it will ever be resolved. This is why I personally view this as a classic case of equity requiring indemnification. Almost without regard to the ultimate decision of those lawsuits which will take years, if these people are going to see any kind of recovery at all, it is going to have to be under this kind of legislation.

Mr. KINDNESS. In other words, and I would agree, I believe you are indicating that it is your position that this legislation ought to put all of the transactions and all of the parties into one factfinding adjudication. With offsets for transactions, the repurchases and repayments that have been made, and get it all over at one time?

Mr. BYINGTON. Yes, sir, if it is given. I particularly like, and join with my fellow commissioners in liking some of the parameters put on in S. 1503. This bill spells out more specifically what kind of costs are recoverable and what kinds are not, and so on. I do think that in this situation it would be appropriate to put the thing in front of the Court of Claims and let them take a look and make a reasonable decision as to who should get what.

Mr. KINDNESS. About your position on the matter of exports, is it known to you whether there is any pattern that is typical with respect to these export sales of Tris-treated garments? Were these sales at normal prices or well below normal prices?

Mr. BYINGTON. We don't know of any pattern as to who is or who is not exporting or where the exports might be going.

With regard to price, the price in the export would be somewhere between 10 to 30 or 40 percent below normal sale price.

Mr. KINDNESS. There have been newspaper accounts indicating that the sale prices have been even lower than that.

Mr. BYINGTON. Excuse me, what I meant to say was not 10 percent below the price, but 10 percent or so of the actual cost to the manufacturer.

Mr. KINDNESS. The sellers of such goods in the export markets are referred to by some as a category that ought to be excluded from indemnification or potential indemnification. Whereas, I think it is far more logical, following on the testimony you presented here this morning, to think of it only in terms of those sales or amounts of money recovered from those sales being a proper offset

from any recovery, unless there was some illegality of the making of such sale.

Is that a correct characterization of what you think?

Mr. BYINGTON. Yes, sir. If I may, I'd like to add another factor, hopefully without making it overly complicated. Before May 5, I don't believe there was any rule, regulation, law, or policy of the Consumer Product Safety Commission that prohibited export, and therefore I can't see any reason why anything other than offset cost should be considered. However, the Commission changed its policy on May 5, 1978, and the court may want to take that into consideration for any exports after that date.

But here I point out, as I tried to earlier, that change of policy was a 3-to-2 vote. I was one of the two that don't believe the Commission has the authority even now under our statute to prohibit that export.

But certainly for those sales before May 5, I believe, export should have no impact other than as a potential offset.

Mr. KINDNESS. Thank you.

Thank you, Mr. Chairman.

Mr. DANIELSON. Thank you, Mr. Kindness.

Just a couple of things: One, the repurchase. This is a formula provided under the Hazardous Substances Act, isn't it?

Mr. BYINGTON. Yes, sir.

Mr. DANIELSON. So the parameters of repurchase are defined there, and there is nothing you can do about it. Certain persons who fall within the provisions of the law can demand repurchase but beyond that there is no remedy.

Mr. BYINGTON. Yes. I think that the Hazardous Substances Act, has been one of the banes of this agency, in the way it was set up and in the way it was used, particularly in chronic hazards. You are correct; section 15 leaves no discretion to the Commission in terms of——

Mr. DANIELSON. I don't want to take time on that right now, not that it isn't valuable information. I invite you to send me a letter setting forth that information, because it appears from yesterday's testimony and today's testimony that here is an area in the law that needs retailoring.

Mr. BYINGTON. I totally agree.

Mr. DANIELSON. If you would share your opinions with us, maybe we can help.

Mr. BYINGTON. I would be pleased to.

Mr. DANIELSON. You have a ceiling that is unrealistic; you can go a little forward in this direction, and you have a floor the other way, and this puts the people literally in the middle. Is that correct?

Mr. BYINGTON. I accept your description fully.

Mr. DANIELSON. You used a term in your formal statement, and once or twice since then, "statutory interpretation of April 8, 1977." When did that terminology come into being?

Mr. BYINGTON. I would like to have general counsel discuss that with us.

Mr. DANIELSON. Fine.

Mr. GARRISH. Mr. Danielson, that was included in the original interpretation. It was labeled as that at the time it was published

in the Federal Register. It was the Commission's intent that it be an interpretation at that time and all times subsequent to then.

Mr. DANIELSON. What would be the difference in force and effect of a statutory interpretation and whatever else it is that your commission is able to issue?

Mr. GARRISH. The principal difference is that under an interpretation it is the Commission's view as to what the law is and the Commission is under continuing obligation if there is disagreement by the party in the marketplace to prove its case and to move in an enforcement action against someone it believes is violating the law.

At the time it would move against such a person, the Commission would be required to prove every aspect and make all of its proof to demonstrate that the product is a banned hazardous substance under the act.

Mr. DANIELSON. What you stated is a formal position. You have the burden of proof in any enforcement effort that would follow?

Mr. GARRISH. That is correct.

Mr. DANIELSON. What is the other alternative? What is the other thing that the Commission can issue?

Mr. GARRISH. The other alternative—there were several before the Commission. The Commission could have proceeded under a 701(e) proceeding under the Food, Drug, and Cosmetic Act, a long and involved procedure.

Mr. DANIELSON. Let me ask you, can you issue something? I don't know your name for it, the word of art, a ban on the use of these products?

Mr. GARRISH. We could under the Consumer Product Safety Act, but not under any other act without a hearing.

Mr. DANIELSON. What do you call the order you could issue, the ban; what would you call that?

Mr. GARRISH. It would have to be a regulation.

Mr. DANIELSON. All right, regulation. By regulation you could have banned the use of Tris in interstate commerce, possibly in foreign commerce?

Mr. GARRISH. That could not be done by order of the Commission. It would have to be done under some procedure set forth, either under the Consumer Product Safety Act, the Federal Hazardous Substances Act, or the Administrative Procedures Act.

Mr. DANIELSON. I understand part of your litigation involves whether the essential procedures were followed.

Mr. BYINGTON. That is correct.

Mr. DANIELSON. I won't go into that. My last point is the Ames test. As I understand it, this was a test performed upon laboratory animals, rats, I think. Not rats?

Mr. BYINGTON. The Ames test was in vitro rather than in vivo, meaning test tube, rather than living beings.

Mr. DANIELSON. Was it comparable to an ingestion test? Someone yesterday told us about a test of the Ames test that related to the ingestion of the substance.

Mr. BYINGTON. You could conduct a month-long hearing on the scientific debate that relates to the difference between in vitro and in vivo testing. There is argument, for example, about how many and what type of in vitro tests are sufficient to provide a basis for regulation. Such tests, of course, differ from testing living animals

where it goes through the regular system. This is a huge dilemma that faces the agency presently.

Mr. DANIELSON. That has not been resolved?

Mr. BYINGTON. There is a great deal of disagreement in the scientific community about the relationship between the two types of tests.

Mr. DANIELSON. Then I am right; it has not been resolved.

Is the scientific community satisfied they know exactly what to do?

Mr. BYINGTON. No, sir.

Mr. DANIELSON. That is what I am trying to get out of you. It is not resolved, then.

Maybe I misunderstood yesterday's testimony, but my understanding was the Ames test did not approximate the circumstances under which a human being would be exposed to the problems of Tris by wearing sleepwear.

Mr. BYINGTON. That is correct.

Mr. DANIELSON. Conceivably a baby might chew on his or her garment and get a little bit of the superficial Tris in the system that way, but fundamentally it has to be skin absorption, whereas the Ames test is a far more direct application of the substance to whatever organism——

Mr. BYINGTON. Salmonella.

Mr. DANIELSON. OK. I would have trouble in relating an Ames test to what you would need in this case. Take, for example, we all wear clothing, now and then we have colored clothing that is dyed, stained, and colored, and we wear it next to our skin and apparently, hopefully, it doesn't cause any harm, yet if I were to drink a little bit of that dye, to ingest it, it would at least give me a bad case of indigestion.

I think a test possibly would have to relate in some degree to the application of the substance. Is that issue present in this case among the people involved?

Mr. BYINGTON. Yes, it is. That is one of the basic areas that the Interagency Regulatory Liaison Group is dealing with. EPA, OSHA, and ourselves are dealing with this subject. I think it is fair to say there is general agreement in the scientific and regulatory community that when a substance does fail one or more of those short-term tests, that it is a yellow light. It does mean we should be doing more testing and particularly should be doing some animal testing.

Mr. DANIELSON. I certainly agree with that. But it shouldn't be conclusive until you start approximating the circumstances under which the usage will take place.

Mr. BYINGTON. It is generally agreed in the regulatory community that a single failure in a short-term in vitro test is not a sufficient basis for a regulatory action.

Mr. DANIELSON. Gentlemen, we will now again have to recess because of a rollcall. I personally am about done with Mr. Byington. I don't know about you, Mr. Kindness.

You are welcome to stay, but we will excuse you and get you back to testing something.

Mr. BYINGTON. Thank you very much.

Mr. DANIELSON. We will be back as soon as possible.

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[Brief recess to vote.]

Mr. MAZZOLI [presiding]. The subcommittee will come to order, please. We would be happy to have Mr. David Moulton, accompanied by Mr. Mark Green, of Congress Watch; if you would take the stand.

Mr. MOULTON. Mr. Green could not be here this morning, Mr. Chairman.

Mr. MAZZOLI. Without objection, your statement will be made a part of the record, and you know at any time we go into session at 10 o'clock that it is a series of ups and downs. If there is a way you can summarize your statement and direct your attention to its important parts——

Mr. MOULTON. I will do my best.

TESTIMONY OF DAVID H. MOULTON, PUBLIC CITIZEN CONGRESS WATCH

Mr. MOULTON. Mr. Chairman, and members of the subcommittee, thank you for this opportunity to express the views of public citizens on these bills relating to the payment of losses incurred from the ban of Tris. I am David Moulton, staff attorney with Public Citizen Congress Watch.

Public Citizen has traditionally opposed legislation that provides a broad right of indemnification to businesses for losses incurred as a result of regulatory action. This opposition rests primarily on our belief that indemnification bills will almost always encourage irresponsibility on the part of businesses; discourage effective regulatory action on the part of government; and cost the taxpayer dearly. Indemnification remedies for losses incurred through public health regulation create the exact opposite of a desirable incentive system. No matter how meritorious a particular claim may be, indemnification invites other companies to take chances with our health and safety. As soon as Government starts down the road of underwriting the losses of those who take risks with the public's health, a corporate queue will form at the door of Congress. Each case will be "unique," "one of a kind," but considered "fair" in light of previous "one of a kind" bailouts. Precedents will breed precedents, and the taxpayer will be asked to foot the bill.

I think it is fair to ask whether it is fair to penalize a business because it guessed wrong about how safe government expects it to be. We believe at least in the area of public health and safety this must be so.

Mr. MAZZOLI. Let me ask you this—I wasn't here for the testimony, and I may be going over ploughed ground—but is your use of the term "guess incorrectly," a correct statement? I heard you say when a business guessed wrong whether or not they should be indemnified. If they guessed wrong in Tris, was it a "guess"?

Mr. MOULTON. I believe, Mr. Chairman, what we have here is a very complicated set of facts developing over a period of 6 or 7 years involving an entire chain of distribution for an industry that has many, many links in that chain, and that there are going to be inevitably relative degrees of fault or innocence and a varying degree of how much people take chances with the risk of danger to public health of children.

Mr. MAZZOLI. You have used a lot of words here, and I appreciate that, but it seems that your use of that term "guess" indicated that they were, in a sense, taking a gamble and should not be rewarded for reaping a recompense for having taken a gamble. My little understanding of the matter is that the Government ordered flame-retardant pajamas for kids and at that point Tris came into being, and later part of the Government found it to be carcinogenic.

Is that not basically the pattern, and, if so, did the companies in truth "guess"?

Mr. MOULTON. What my formal statement criticizes is grossly oversimplifying this process by simply saying the companies were forced to use Tris and later when the ban came along, they were stuck holding the bag.

Mr. MAZZOLI. They were not forced to use Tris?

Mr. MOULTON. I have several questions in my testimony addressed to that particular problem.

Mr. MAZZOLI. Thank you very much.

Mr. Kindness?

Mr. KINDNESS. Mr. Chairman, while we are at this pause, could you explain what you mean by that statement, then, the "guess"?

Mr. MOULTON. I am talking broadly now, Mr. Kindness. I am talking about a situation where it just doesn't come up just in the Tris case but across-the-board.

Mr. KINDNESS. Is it your position that the statement doesn't necessarily apply to the Tris case, but you are speaking of a generic problem.

Mr. MOULTON. I am talking about what good public policy would be in the area of public health regulations.

Mr. KINDNESS. It doesn't necessarily apply in the matter before us?

Mr. MOULTON. I think you will see if I continue through my testimony that I do get more specific about the Tris situation.

Mr. KINDNESS. All right.

Mr. MOULTON. But I did want to point out that under the strict liability provisions of the Food and Drug Act, that agencies of business have been held criminally liable even absent any intent to commit any offense, and the Supreme Court and Congress felt this was appropriate in the area of public health because:

> Balancing relative hardships, Congress has preferred to place it on those who have had at least the opportunity of informing themselves of the existence of conditions imposed for the protection of consumers before sharing in illicit commerce, rather than to throw the hazard on the innocent public who are wholly helpless.

Public Citizen opposes the proposals before you both because they entail all the evils of indemnification, and because they are overboard and leapfrog all alternative, less costly remedies. Even S. 1503, which is somewhat narrower than H.R. 7158, could force the taxpayer to indemnify even those who took the maximum risk with the health of innocent children. S. 1503 slipped through the Senate without debate and without a rollcall vote. Instead of addressing that problem, the Senate report simply chides the Department of Justice for contradicting its previous support for cyclamate indemnification bills in 1972.

We urge the House to take a more considered approach and to explore the full ramifications of this precedent-setting legislation. All intermediate remedies should be exhausted before committing the Treasury to an unnecessary bailout. My remaining testimony is designed to raise questions that may be helpful to this subcommittee's full consideration of these issues.

The popular version of what has occurred apparently goes this way: First, the Government passed a flammability standard for children's sleepwear that could only be satisfied through the use of Tris.

Second, a previously unknown method for testing for carcinogenicity, the Ames test, was developed and used on Tris, enabling researchers for the first time to determine that Tris could cause cancer.

Third, the Government banned the use of Tris in children's sleepwear immediately after discovering the danger of Tris, thus suddenly crippling an industry which had been relying on Tris only at the insistence of the Government.

Fourth, the terms of the ban, and a subsequent injunction against its enforcement, have resulted in the bulk of the losses falling on small apparel manufacturers who have had to repurchase from distributors and retailers but are prohibited from passing their losses up the line to fabric manufacturers and chemical companies.

Fifth, there are no adequate common law remedies.

Sixth, there are no adequate legislative remedies short of outright indemnification.

Taken as a whole, this version of events evokes some sympathy. However, it is a gross oversimplification. Unfortunately, since it is a widely accepted version, it has had the effect of curtailing inquiry and preventing recognition of important distinctions at each stage of this sequence of events. Before acting on any legislation in this area, Public Citizen urges this subcommittee to consider the following version of events which may collide with conventional wisdom, but which is, we believe, more accurate. It raises a host of unanswered questions, some of which we have identified. Unfortunately, this legislative forum will not, I believe, be able to get answers to some of the more crucial ones without adopting an adjudicatory approach.

First, in 1971, the Department of Commerce issued regulations under the Flammable Fabrics Act requiring children's sleepwear to be flame-resistant. This was a performance standard that mandated neither the use of Tris, nor any other particular chemical. Tris, however, became the so-called treatment of choice by the industry. In addition to being effective, Tris was apparently favored because it was relatively inexpensive and left the treated garment with a texture that would be most acceptable in the marketplace. Testifying before a Senate panel on this subject on behalf of the American Apparel Manufacturers Association, Mr. David Shirey noted—and he essentially repeated this statement yesterday—that:

> We soon found * * * that those fabrics which contained Tris met with the greatest levels of market response—both in terms of the hand or feel of the garment * * * and in terms of the price. We are in a very market-sensitive type of industry—highly competitive industry. The minute a fabric, or a particular type of fabric,

begins to meet with consumer acceptance, we rapidly gravitate to that fabric in order to try to provide them what they are expressing in the marketplace their desire to purchase.

This would suggest that at least part of the reason that Tris became so widespread was that it permitted compliance with the law at the lowest price.

My question is whether, in fact, as the industry asserts, they would have entirely folded in 1971 if this wonder chemical Tris had not existed or whether, in fact, there were not alternative chemicals or inherently flame-resistant fabrics around that could have satisfied the flame standard, and then the question becomes if there were those alternatives, was it a proper tradeoff when you balance saleability of the product versus safety, for them to have chosen Tris versus another chemical, or flame-retardant material that might have been a more conservative approach on the safety side, even though it might have hurt them somewhat in the marketplace.

Mr. SHATTUCK. What is your answer on that?

Mr. MOULTON. I am not in a position to answer that.

Mr. SHATTUCK. What has your investigation shown?

Mr. MOULTON. My investigation has shown that indeed there were a range of chemicals and that also we had testimony yesterday that there were inherently flame-resistant materials, a form of wool, for example, that were alternatives that were rejected.

Mr. MAZZOLI. A form of wool for pajamas for kids?

Mr. MOULTON. Yes.

Mr. MAZZOLI. I don't know. Are P.J.s made out of wool now?

Mr. MOULTON. In the wintertime.

Mr. MAZZOLI. Is it wool or cotton flannel?

Mr. MOULTON. I believe that one of the alternatives mentioned yesterday was a wool flannel.

Mr. MAZZOLI. I thought pajamas were mostly cotton or something of that nature.

Mr. MOULTON. I raise these questions because I think they are important and in order to determine whether Tris—we had the assertion yesterday that Tris was the only chemical available, and yet we had other people on the panel who said, in fact, there were alternatives, but immediately were rejected because they were not appropriate, and they were going to hurt sales, in essence, or that they created a material that was too stiff to be attractive in the marketplace.

Mr. COFFEY. Do you feel their choice of Tris at the time was reckless?

Mr. MOULTON. Again——

Mr. COFFEY. Was it unreasonable?

Mr. MOULTON. It possibly was unreasonable, and I would have to know a lot more than I do now to make that determination. I am suggesting that in order to come up with reasonable legislation, that the committee is going to have to get this kind of detailed information. You have contradictory testimony up here, even among the industry, about what was available and what was not, although they all agree, and I would think you would expect this agreement under the circumstances, that Tris was the only one that they could have used and still stayed in business.

I am raising that question as a crucial question to this whole process.

And whether it was, in fact, reasonable or reckless, to have used Tris, I can't make that judgment without knowing, for example, what the chemical companies who developed Tris knew or should have known about its carcinogenicity or toxicity. Tris, as I mention later in my testimony, had been in the marketplace since 1958 and, in fact, was discovered in 1951, and so we are talking about a very long period of time during which an industry had the time to do the kind of carcinogenicity test available back then.

Mr. COFFEY. The duty to test, then, is with the manufacturers as opposed to the Government agency charged with that responsibility?

Mr. MOULTON. I think that is a crucial point, absolutely true.

Mr. MAZZOLI. You would say that the responsibility lies on the weaver of this material, not on the chemical company that made it, to do the testing?

Mr. MOULTON. No, the chemical company that made the Tris, you would have to say, had the primary responsibility for determining its safety.

Mr. MAZZOLI. If it did not, and the industry used Tris because nobody had raised any cain about it—nobody was harping about its carcinogenicity—and there was no evidence, then where is the industry? Should they have leased the chemical labs and tested Tris on their own?

Mr. MOULTON. No, they, I believe, would have the responsibility to get every reasonable assurance from people throughout the chain, people above them, that what they are marketing and selling is safe.

Mr. MAZZOLI. Are you sure they did not do that?

Mr. MOULTON. No.

Mr. MAZZOLI. That is up to us to find out.

Mr. MOULTON. I think you must find out what individual companies did more or less in relation to that responsibility.

Mr. HARRIS. Mr. Chairman?

Mr. MAZZOLI. Yes, Mr. Harris.

Mr. HARRIS. I think we have had testimony, at least some from the industry, on that point. I think the fact of the matter is that there had been substantial testing with regard to chemicals of this type, including Tris. But basically, as to toxicity and other things, at that time since the chemicals that were not going to be used for ingestion, the thought of testing those for carcinogenicity, or whatever we call it, just was not held appropriate or considered at that time.

I think that the manufacturers of Tris would probably verify this and maybe we should have the record verify it, that the testing they did and the reports required on this just did not include tests with regard to carcinogens.

Mr. MAZZOLI. Thank you. That was a good contribution.

Why don't you continue, Mr. Moulton?

Mr. MOULTON. I would second the suggestion that we have chemical companies testify on this particular subject. I don't believe that—the manufacturers, themselves, say they hadn't heard of Tris until 1976. I find that particular assertion unbelievable in

light of the publicity that surrounded the flammability standard in 1971, but, in any case, certainly the chemical companies are the ones that had the greatest responsibility in this case, and they are getting away scot-free.

Mr. HARRIS. Mr. Chairman, I am sorry, but I think this does put a finger on it. This was the line of testifying and questioning that was engaged in yesterday, I guess it was. If I may, we have the apparel people, the folks that sew and cut, saying, "Look, we ordered the fabric, and we don't put Tris or anything else in." We have testimony that sometimes the chemical was put in at the fabric level, sometimes I believe at the thread level. The testimony I think indicated probably not at the fiber level, but other testimony indicated maybe even sometimes at the fiber level.

So, "Where do you get your chemical?"

"Actually we buy it from an intermediary."

They don't actually manufacture it, but get the chemical and mix it up, or what-have-you. So there is still another step.

It seems to me if someone is putting an unsafe chemical on the market, that we ought to find out why they put an unsafe chemical on the market and how well they had tested and notified with regard to the chemical.

Mr. MAZZOLI. Thank you.

Thank you very much, the gentleman from Virginia.

The gentleman can continue.

Mr. MOULTON. The second stage in the sequence of events was the testing by the National Cancer Institute, which started in 1974, and by October 1975, was able to provide the Consumer Product Safety Commission with preliminary evidence of the mutagenicity of Tris. While this was apparently the first Government-sponsored testing of Tris' cancer-causing properties, the extent and quality of industry testing prior to this time is still not adequately known. Tris was first patented in 1951, and commercial marketing began in 1958, and they had a great deal of time to have done the kinds of long-term cancer studies that were available back then. I am talking about the chemical companies now, and those fabric manufacturers that also did their own scientific testing and applied Tris to their fabric.

It is very important, I think, to make it clear that although the Ames test was not developed in 1974, other more time-consuming methods for studying the carcinogenic properties of Tris had been available to these companies during that period of time.

I raise in the second section of questions the types of things we just discussed, so I will skip that.

Third, in March of 1976, the Environmental Defense Fund petitioned CPSC to require labeling regarding the potential hazards of Tris-treated sleepwear, based on information made available to CPSC in October 1975. On February 8, 1977, EDF submitted another petition, based on additional information about Tris, requesting CPSC to ban Tris-treated children's sleepwear. CPSC acted on April 8, 1977, issuing a ban and triggering the repurchase provisions of the Federal Hazardous Substances Act. Assuming for the moment, and I am not taking this position, but assume that no reasonable businessman involved in this controversy could possibly have detected the dangers of Tris without Government help, public-

ity surrounding the initial EDF petition in early 1976 should certainly have tipped off the industry to the existence of potentially adverse data and to the possibility that more would be forthcoming. In fact, one of the largest manufacturers of children's sleepwear has testified before the Senate and before this committee yesterday that it "promptly stopped using Tris" at this date—talking March of 1976. Whether such action was taken solely for business reasons or out of a sincere regard for the safety of children, there occurred a natural contraction of the market for Tris-treated fabric as information became publicized. As a result, the losses of the most alert and/or conscientious companies were partially or wholly mitigated. It is likely, however, that other companies exercised a more callous judgment and decided that the potential risk to children did not yet outweigh the price and marketability advantages of continuing to use Tris. So my questions at this point are, when were the earliest warning signals available to the companies or to fabric manufacturers or garment manufacturers, and how many stopped using Tris on their own, and when and how many continued to use Tris right up to the ban, and why, and——

Mr. MAZZOLI. Let me ask you this out of curiosity. If you say a company can be held to be callous because it produced material up to the time of the ban, would not the Government then have the responsibility of making the ban earlier if there was immediate hazard? Why should the company not go up to the ban? If it went beyond the ban, I would say obviously they are flaunting the law.

Mr. MOULTON. One of the reasons we feel indemnification proceedings are so dangerous is what they do is tell industry——

Mr. MAZZOLI. Would you tell that to Mayor Koch, please, about indemnification? Did Congress Watch take a position on the indemnification of New York?

Mr. MOULTON. We have just a few lobbyists and cannot cover everything going on.

Mr. MAZZOLI. Did your organization take a position on New York?

Mr. MOULTON. We have not taken a position.

But what I am getting at is the situation where, when the Government sets a standard, the industry believes that if it complies with what Government believes is a minimum standard of safety, that that is a perfect defense if later it is determined that that particular standard of safety was not accurate.

Mr. MAZZOLI. Again, what you are saying is you think if there is such a thing as indemnification for a prudent company, it should exist at least up until the time that the announcement of the ban took place, even though there is a question from the time of the announcement to the ban, itself, for a prudent company. Is that what you are saying?

Mr. MOULTON. I am not sure I understand the question.

Mr. MAZZOLI. Why shouldn't for even a careful company, a circumspect company, this indemnification, if permissible and appropriate, take place right up to the time of the ban? Why should there be worry about that, if we establish that this is a careful company?

Mr. MOULTON. What I am suggesting, Mr. Chairman——

Mr. MAZZOLI. Why should we worry about anything anticipated ahead of the ban?

Mr. MOULTON. I think we should worry for this reason. I believe it allows us to see that, in fact, different companies make different decisions about how close they should——

Mr. MAZZOLI. You mean to tell me they can't follow the law? Isn't the law the ban? Isn't that when the guillotine falls? Isn't that the time we determine the good guys and the bad guys?

Mr. MOULTON. This is crucial to this issue, whether or not in fact when the Government steps in and regulates that all common law liability or court liability prances out the window, and I believe that there should be, there must be, a continuing obligation on the companies to pursue the kind of testing that would determine whether they are acting reasonably despite the fact they are complying with the Government standards.

Otherwise, you are saying that Government resources are going to be the standard that industries all over the country must comply with, and that industry does not have to go beyond that, that a minimum standard becomes a maximum standard, and there is no tort liability any more.

Mr. MAZZOLI. I appreciate that.

Mr. HARRIS. Mr. Chairman, because I think you want to put your finger on the central point here, at what point should the Government become the indemnifier with respect to the situations of this kind?

The door I have been testing here, it seems to me the only time we can really in this area step in and say we use taxpayers' money for indemnification is where there is a clear act of Government that has caused the situation, either through neglect or improper type of Government action. At least in my mind, it is at this point you can enter a court of claims-type situation or equity-type situation and say government caused this situation and therefore Government has to indemnify.

I believe through the other door, the answer of the witness probably is correct. It may be that the industry was not negligent, or it may be that the industry was negligent, but the test certainly can't be that they followed minimum Government standards and therefore were not negligible.

Obviously there are other factors involved. Industry does have a responsibility to make sure the product has been tested properly before they start sending it out to millions of consumers. They can't just say that is the Government's job. It is industry's job, too.

It seems to me that this is a very typical judicial determination to be made——this is what the courts are here to decide. Did the industry use proper care in the manufacture and marketing of a product? Or did they, in fact, put something on the market because it would obtain acceptance despite other qualities that they knew, or had reason to know, could be dangerous to the health and safety of the consumer?

I just don't see how Government indemnification can get into that area. I think that is a court decision to be made. It seems to me the only way Government indemnification can get in is where the Government action caused the situation and therefore, in equity, we should find a way to recompense the people.

Mr. MAZZOLI. I am not sure under what law the Product Safety Commission acted, but I would be willing to bet that in that law there is something which authorizes the agency of Government to immediately ban if there is an immediate hazard to health which is immediately proven, more or less like OSHA. I can close a guy down or give him time to fix it up. It depends on with what accuracy you can determine the hazard.

If I understand the situation correctly, the Government stepped in once it was sure Tris was carcinogenic and said it is banned as of 30 days, or 60 days, or 120 days hence; I don't know why, personally, the companies have to say we had better quit making it now. The next-door company, on its own, exercising its discretion as it saw fit, may have ended as of the day the press release was made. The other companies may well have been well within their right, totally prudent, totally concerned about their responsibilities to the public, as you say, to the innocent children, which I think is sort of a buzz word, if they went to the time of the ban, saying if the Government knew that there was an immediate health hazard, they would have banned it yesterday, not 120 days.

You might proceed because that is a matter we really have to deal with.

Mr. MOULTON. All right, fourth, the terms of the initial ban applied the repurchase provision in such a way that the burden of the repurchases would fall on the manufacturer of the sleepwear. After suit was brought in the District of Columbia, CPSC agreed to broaden the repurchase obligations to all parties in the distribution chain, including the manufacturers of fabric and fiber to which Tris was added, and the Tris manufacturers, themselves. However, a second suit, brought by the fabric manufacturers in South Carolina, has resulted in an injunction against the enforcement of the ban. The practical effect of this injunction has been to impose on the garment manufacturers the entire loss of repurchasing sleepwear. The Department of Justice and the CPSC have appealed this ruling to U.S. Court of Appeals for the Fourth Circuit and oral argument has been completed, contrary to the printed version, and the parties are awaiting opinion.

When hearings on the effects of the Tris ban were held by the Senate last July, some asserted that it would cost the producers of children's apparel approximately $200 million, which would mean bankruptcy for many of the approximately 100 apparel manufacturing companies, and unemployment for many of the industry's approximately 27,000 employees. The potential loss figure has since been revised downward dramatically by the industry to $50 million. To our knowledge, few, if any, jobs have been lost, and few, if any, companies have gone bankrupt, due to the banning of Tris.

This is undoubtedly partly due to the willingness of some retailers to grant the manufacturers a reprieve on their obligation to repurchase, at least temporarily. It may also be due to other adjustments, like dumping Tris-treated garments abroad, or, as mentioned earlier, mitigating losses at the earliest warning signal. I would ask that we determine how many companies have gone bankrupt. Mr. Cohen mentioned several yesterday in his testimony before the committee. Further inquiry on my part, at least, has raised the question of whether they went bankrupt because of the

Tris ban or whether they were on the verge of bankruptcy, and it was the straw that broke the camel's back.

Mr. HARRIS. Mr. Chairman, on that point I noticed in your oral statement it was different than the printed statement. You said "no" in the printed statement, and "few, if any," in the oral comments. I hate to be a nitpicker.

Mr. MOULTON. I said to my knowledge no company has gone bankrupt today. Yesterday I heard Mr. Cohen mention several companies, and I pursued that and found according to the staff members they don't know whether they went bankrupt primarily because of the ban on Tris or whether they were in shaky financial condition.

Mr. COFFEY. This staff member does, because I researched it for Cohen. There were two businesses that directly went bankrupt because of the ban. He specified only those two that actually had. Mr. Cohen also referred to a third which had gone out of the children's sleepwear business; and a fourth that just simply closed its doors. He did not refer to it as a bankrupt. There were two he mentioned specifically in connection with bankruptcy yesterday.

Mr. MOULTON. I think that is a very important question because it is easy enough to say that *X*-number of companies have gone bankrupt since the ban on Tris.

Mr. MAZZOLI. Why is that a fundamental question, the bankruptcy? I don't think it is. If there is an indemnity, you indemnify a person for loss. If they went bankrupt, that maybe points out the righteousness of the indemnification, but it doesn't mean whether or not we have to proceed in this fashion.

Mr. MOULTON. I think it is important to know how quickly you must proceed in this, because if we had time, for example, the companies could pursue their private litigation, and the litigation in South Carolina might have worked itself through so we would know whether repurchase decisions were going to go up the line, but it is the company's contention there is no time. That is why I raised that as a question. I think it will vary with the circumstances of individual companies.

Mr. MAZZOLI. I was told never to buy anything that was sold door-to-door because the price is going to change tomorrow morning, or this is the last one that we will ever make, because that is exactly the time you turn it down; so I don't think this committee should be ramrodded or stampeded in anything on the basis of two or three companies that may have gone bankrupt. I am sorry for them, but I think we have to take a much longer view than that.

Mr. MOULTON. Again, to get some sense of the urgency of this legislation it is important to know how many jobs have actually been lost, and what is the present estimate of potential loss. As I mentioned, it has been coming down as we find out more information. I think it is also important on this question of export; I think it was established this morning that in fact they only get 5 to 10 percent, not much more, of the value of the garment when they dump this material abroad at sort of stress prices, so at least on a moral plain, it seems to me to be unacceptable that they would export material that had been determined to be dangerous to American children to foreign children in order to mitigate the losses in such a small fashion.

Mr. MAZZOLI. I mean I think all members of the committee are moral people, but I think that we have to talk about the facts and figures and data, and I would appreciate that.

Mr. MOULTON. Fifth, at least one company has stopped waiting for the resolution of litigation surrounding the ban and repurchase order, and has chosen to sue up the distribution chain on theories of strict liability, warranty, negligence and misrepresentation. Defendants include Velsicol, which made the Tris, and Celanese, which applied the Tris to the fiber. If this suit is successful, it could go a long way toward facilitating similar actions by others in the distribution chain, thus accomplishing what the regulatory action has so far failed to accomplish—spreading the loss out among all those who previously profited from the use of Tris. I suggest it would be a fruitful line of inquiry to find out to what extent the facts of that case might be applicable to other companies and whether joint action could be taken to speed things up. But it is apparent that many companies have not pursued private remedies at this point in the expectation of being indemnified, and I think that is sort of indicative of the kind of signals you get when you pursue indemnification bills. It does interfere with the normal marketplace.

Sixth, there are alternative legislation remedies to indemnification. Clearly the cleanest most cost-efficient method of resolving the current situation is in the hands of the fourth circuit. If the appeal against the injunction is successful, every participant in the distribution chain should be able to recover a significant portion of its losses through the orderly implementation of the repurchase order. Beyond that remedy, and in the meantime, other companies could follow the lead of Werthan Industries in bringing suit up the distribution chain to recover for their entire losses. But even if legislative remedies were the only ones available, indemnification is clearly the least desirable alternative. Short-term low-interest loans might be appropriate to enable companies to stay afloat while litigation proceeds. Long-term low-interest loans might be appropriate later, once the results of litigation are known. Such financing could be arranged through the SBA or a similar government body. I know the Small Business Committee on the House side has pursued the issue of to what extent companies can get small business loans, and several of the companies feel that onerous or impossible obligations would be put on them to get the loans. I believe that is a legislative area which again might be a fruitful tack to pursue before leaping, as I mentioned before, to broad indemnification.

A partial solution I have suggested concerns the Congress referencing this bill to the Court of Claims, and then having some kind of report come back which would permit the Court of Claims to pursue what companies knew or should have known in the adjudicatory setting might also be appropriate.

We hope that the discussion above will serve to encourage the kind of detailed inquiry which must be the condition for even considering indemnification. Unfortunately, as mentioned earlier, legislative hearings are simply an inadequate forum to ferret out information such as what a chemical company like Velsicol knew or should have known about the toxicological properties of Tris in

1968, or 1971, or 1976. Only an adversary setting, with the right of cross-examination is likely to enable us to determine who, if anyone, can be held responsible for contributing to this problem.

It is unacceptable, however, to assume that every actor in this scenario is equally innocent and thus equally deserving of aid. Do the sponsors of H.R. 7158 really intend that the taxpayer should reimburse Velsicol, Inc. for losses incurred in manufacturing and marketing a cancer-causing chemical without inquiring into Velsicol's efforts to protect the public health? Shouldn't a logical addition to these bills be a provision allowing the taxpayer to share in future profit of indemnified companies? In return for Government aid, is the industry prepared to being setting aside in a segregated fund a percentage of future profits to indemnify cancer victims 20 years or more from today?

At the very least, there should be a provision permitting the Government to subrogate to all the rights of indemnified companies, so that the possibility of future recovery through a lawsuit will accrue to the taxpayer, not to an indemnified company. This was urged by Mr. Merow, of the Department of Justice, yesterday, and we second it.

In conclusion, we would like to reiterate that this subcommittee should start with a healthy presumption against the wisdom of blanket indemnification remedies. The ability of Government to police private industry is limited. If indemnities become a part of Government regulation, all incentive for business to police itself will be lost. This will occur both because business will count on being reimbursed for losses incurred through regulatory action against unsafe products, and because business will count on weak or nonexistent regulatory action by Government bodies forced to calculate the cost of indemnities before banning dangerous products. This would result in an enormous waste of Government resources and jeopardize the public health and welfare even further.

The Senate has raised the spectre of Federal indemnities to companies that have marketed cancer. We urge you to reject indemnities as bad public policy, and to pursue the questions raised above and by the developing record.

Thank you, Mr. Chairman. I welcome any other questions you have at this time.

Mr. MAZZOLI. Thank you very much. You have been a good witness and suffered through the interruptions patiently and with skill.

The gentleman from Virginia is recognized.

Mr. HARRIS. Thank you, Mr. Chairman. Let me zero in, if I may, as to Government liability here. Specifically, I don't think this was Government's brightest moment as far as regulation was concerned, as I traced the history of this.

Where do you feel, or do you feel, that Government regulators fell down or acted inappropriately in this whole process?

Mr. MOULTON. I don't believe they did, Mr. Harris.

Mr. HARRIS. Fine, thank you. That is a response.

No 1. You have the Department of Commerce actually, the initial actor in this case. They imposed standards with regard to infants' sleepwear initially up to size 6X, as I recall, and put such

standards in which—we at least have in testimony—were pressing the state-of-the-art as far as flammability was concerned.

They were, in fact, saying to industry, we don't know exactly how you do it, but you have to find out how to do it and do it.

Industry testifies that really Tris was the only way to do it. And that they were, in fact, forced to use Tris. You do not buy that argument?

Mr. MOULTON. No, I don't believe that their own testimony indicates they were forced to use Tris. As I mentioned before, they are willing to admit that they were to them unacceptable alternatives, and it didn't have to do with the fact they couldn't achieve the flammability standard in any other fashion; it had to do with marketability and consumer acceptance and price.

Mr. HARRIS. I don't think that point could be handled cavalierly. I have heard in the testimony that just because the little sleepers were going to be stiff as a board, that didn't make a difference, because it was just cutting down on the marketability. I don't think the consumers want to buy sleepers for their kids stiff as a board. It probably is something more than marketability. It is probably other standards coming into play that may be equally as important, or at least as important.

We have not been able to determine from the testimony here, any alternative to Tris that could provide an infant's sleepwear that was really the type of thing you would want to buy for your kid. We haven't been able to determine that such a fabric could have been manufactured.

Is there any testimony or any evidence that you see that there was an appropriate type of infant's sleepwear that could have been manufactured to meet these flammability standards?

Mr. MOULTON. Well, the article that I footnoted in my testimony, I do have available, and what that helps to establish is the length of time that flame-retardant chemicals have been studied, both by the Government and privately. It goes back to the 1940's, and they mention at least four chemicals that were pursued as alternatives to establish flame retardancy. The extent to which any of those were fully developed, I simply would reiterate, I think you need scientific testimony on this subject, and desperately, because it is very important.

But I would be glad to make that article available, and it is not tilted to one side or the other. It is a technical discussion, and it is useful.

Mr. HARRIS. I think I have seen the article. The problem is, of course, that we can in hindsight say you could have used this chemical or that one. We had testimony that maybe 30 percent of weight could have been achieved by one chemical that may have given it a decent quality, but here again we could probably hold the manufacturer negligent if he started putting out sleepwear that was found to have that sort of chemical capacity.

Mr. MOULTON. I think there is another point that is important here. You have the situation where the industry is saying they were forced to comply with the Government standard. Well, the Government standard was applied because of a very acute problem at that time, recognizing the danger of flammability to sleepwear for children.

You see throughout this process a situation where the industry said we won't do anything more than the Government tells us, and so that forces the Government to tell them. So then they comply up to what the Government tells them and then they sit back again and don't test themselves: "We will wait until the Government tells us," and then the Government tells them later on about what kind of cancer-causing properties there are. You don't have the kind of situation that you would hope would exist in all businesses, where they are pursuing on their own points of safety well beyond what the Government establishes as a minimum. And I think that the inflammability standard established in 1971 is an example again of the Government stepping in to force an industry to do something they were not doing on their own, and, again, I think detailed inquiry may establish that kind of situation could have been averted by an industry that was doing everything it could to come up with flame retardancy even in the sixties.

Mr. HARRIS. The second point and last point, Mr. Chairman, is this: Do you feel that the Government acted properly when it actually put in the recall order and put the companies at a position where they were going to suffer severe economic loss because of the recall order?

Mr. MOULTON. As I understand the situation, they initially instituted an order that defined a manufacturer in such a way that everything came back to the garment manufacturer and could not go any further up the line.

When they corrected that, they were then sued by others up the line, the fabric manufacturers in South Carolina, and that has resulted in the injunction against the ban so the practical effect of that two-step definition of what the repurchase order required, and the suit by the fabric manufacturers, has placed all of the burden on the garment manufacturers.

Now, it does not really answer your question whether there was Government fault in taking that two-step process.

Mr. HARRIS. You would say that the first step, the basic principle of the recall, was a responsible Government action at that time?

Mr. MOULTON. I am not prepared to say that. It seems to me it should have been clear from the beginning that a repurchase order all the way up the line was the way this should have been handled and if, in fact, CPSC knew that what they were doing was to have everything fall in the middle and to permit the fabric manufacturers and chemical companies further up the line not to be held responsible for any repurchase.

Mr. HARRIS. But you think recall was necessary, however far up the line it went? Do you feel like at that time it was a responsible Government action to try to institute recall?

Mr. MOULTON. I do, yes.

Mr. HARRIS. Thank you, Mr. Chairman.

Mr. MAZZOLI. Thank you, Mr. Harris.

There is one thing you earlier were talking about, there is something more than marketability as a factor of whether you use Tris or some of the other chemicals.

I remember when our children were tiny babies that one of the great problems they had was skin problems, dermatology. We kept

those kids constantly going to the pediatrician or whatever with skin problems.

Mr. HARRIS. We went through the same thing, Mr. Chairman.

Mr. MAZZOLI. And my recall is if you have a stiff garment or something that has abrasive quality to it, it's going to make those mothers not buy that product. It was not so much whether or not the mothers were going to buy the stiff garment, they were probably resisting stiffness most because it was esthetically not correct, but because they know a stiff garment and babies just don't mix.

Mr. Coffey?

Mr. COFFEY. Thank you, Mr. Chairman.

At what time do you feel there was sufficient scientific data available to justify a ban? At what point?

Mr. MOULTON. I am not a scientist, Mr. Coffey. I am not going to step into the shoes of the regulators here to tell you one way or another whether it was justified in 1974, 1975, or 1977. I just don't believe I am qualified to give you that kind of a judgment.

Mr. COFFEY. But you would not say the Commission dallied or delayed?

Do you feel the Commission could have acted earlier based on the data available?

Mr. MOULTON. I believe the way it worked they had some preliminary data in 1975, again this is based on the Ames test. And I think Mr. Byington was correct when he said most regulatory agencies are not prepared to act at that point, that they need the final outcome of the long-term tests.

I believe I am not going to quarrel with that judgment. So, to the extent I think they got the final outcome of the test in approximately 1 month before the ban, that would seem to be sufficient to me.

Mr. COFFEY. Thank you.

Mr. MAZZOLI. Thank you very much.

Counsel has a question.

Mr. SHATTUCK. I have no further questions, but I would like to observe there will be a representative of Werthan Industries testifying today, plaintiff in the action you referred to, and we also hope to have testimony from a labor representative who can give us some insight into the number of jobs it may affect.

Mr. MOULTON. Very good.

Mr. LAUER. I just have one question.

I don't understand what you said on the last page of your statement when you state that there should be a provision permitting the Government to subrogate the rights of indemnified companies so the possibility of future recovery through lawsuit would occur to the taxpayer, not to an indemnified company.

Can you explain what you had in mind?

Mr. MOULTON. As Mr. Merow mentioned yesterday, if, in fact, a company is indemnified and yet they have still not solved the question of product liability or negligence or deception through a suit, that that company could bring on its own, that at the very least the Government then should be able to acquire those rights from the indemnified company because the indemnified company will have no incentive at that point to spend money on the suit. If,

in fact, as a practical matter, it is possible for the Government to pursue that kind of remedy, then it should be done.

Mr. LAUER. Do you see that as a practical remedy for Government?

Mr. MOULTON. If there are outstanding rights on the part of the companies, that raises the possibility that the taxpayers' money that has been paid to indemnify companies could be recovered through a lawsuit, and that should be done.

Mr. LAUER. Thank you.

Mr. MAZZOLI. Thank you very much, and I thank you very much, Mr. Moulton.

You have been very helpful.

I would like to invite to come forward Mr. Stephen E. Schnitzer, Executive Vice President, Pajama Corporation of America, New York, N.Y., and Mr. Manny Kay, President, Top Form Mills, New York, and Mr. Ira Kay, who will appear as a panel.

Welcome, gentlemen.

Your statements will be made a part of the record.

[The statements follow:]

STATEMENT OF STEPHEN SCHNITZER, EXECUTIVE VICE PRESIDENT, PAJAMA CORPORATION OF AMERICA, INC.

Recounting of hardships since the April, 1977 ban on Tris.

Procedural legal difficulties caused by the CPSC. Also problems caused by the mills in their refusal to repurchase the garments or material.

Failure of the SBA to be very accommodating or flexible.

Continuing economic adversity for small pajama manufacturers.

Distinguishing between this and other regulatory injuries to industries caused by government.

Support for S.1503 as only fair solution to the whole problem.

Mr. Chairman, Members of the Subcommittee, my name is Stephen Schnitzer, Executive Vice-President of the Pajama Corporation of America, Inc., a small New York corporation with a plant in Tennessee.

I want to take this opportunity to profoundly thank the Subcommittee, and you, Mr. Chairman, for providing us with this opportunity to testify on this still critical legislation.

It has been a little over 14 months since this catastrophe happened to us—the small pajama manufacturing companies—and, in fairness, it hit us harder and more severely than any other segment of this entire industry. In fact, we are still reeling from the impact of the original Consumer Product Safety Commission ban on Tris.

We are hanging on by our fingertips having barely withstood the actions of the Commission, the continuing squeeze from the large retailers, dehumanizing humiliations from the Small Business Administration and outcries from misinformed consumer groups. Now we have only the Congress and this Subcommittee to look to for answers to the continuing questions of whether fairness and justice exist in our regulated twentieth century American society.

Let me review quickly for you the events that have occurred in the last year from the perspective of a small pajama manufacturer.

At first, we accepted the ban itself and only sought redress in the Courts by attempting successfully to compel the Commission to spread the economic impact of repurchase more equitably throughout the chain of distribution and production to the mills and ultimately the chemical companies themselves.

It was clear to us that the Commission had not thought through the impact of a repurchase order that was made to end with us; for after all we are the small neck of the hourglass caught between the large textile mills and the large retailers and we are the least able to survive in a viable fashion when government causes such massive commercial dislocation.

We had to undertake a substantial effort in Federal District Court in Washington and, ultimately, in the Court of Appeals for the District of Columbia to overcome the Commission's lack of understanding and its continued reluctance to deal effec-

tively with the bad situation it initially created. The Commission's false starts created confusion and cost us much in time and money.

No one realizes either that we have had to rent enormous warehouses to continue to store our recalled goods since the Commission has never to this day advised us on disposition. In addition we have had interest costs and insurance costs to maintain these storage facilities. And no matter the outcome of this whole issue, I would still ask someone in a position of ultimate authority to tell me how to dispose of these goods.

Just as we thought that we had overcome this first hurdle by being able, under court order, to recoup only about one-third of our piece goods costs from the mills, a Federal judge in South Carolina, Robert Chapman, on June 23rd of last year struck down the Tris ban and with it the one economic foothold we had gained. The Commission subsequently spoke of a new ban but they have never done anything.

And what of Judge Chapman's ruling last June? Well, ironically, that ruling did not change anything for us with respect to the retailers who continued, even with greater intensity, to return goods because they knew they could take advantage of our weakened position in our commercial relationship with them and because they claimed, too, that the goods were simply not merchantable. The hourglass was at work again. No mother would buy chemically-treated pajamas—the government had poisoned the marketplace and there was no way to undo that damage.

It was interesting to note after the Chapman decision that all the media perceived it as a victory for us, but, in fact, it was a crushing defeat. The mills were off the hook for the moment; we could not afford to return any piece goods to them because there was no ban and no one was willing to enforce such returns.

Then the Court of Appeals for the Fourth Circuit denied the government's motion for a stay of Judge Chapman's order pending its appeal and in so doing the Circuit Court pointed the way for the Commission to statutorily enforce all aspects of the recall.

Initially, last summer the Commission pursued those unyielding retailers who had not cleared their shelves of Tris-treated sleepwear. At the same time we began to make demands, based on our statutory rights under the Federal Hazardous Substance Act, upon the mills to take back at least our uncut inventory; their response was to cite Judge Chapman's decision and charge us interest on the money they claimed we owed them for goods which they would not accept back.

Based on this circumstance, the Government ultimately sued seven of the mills to force them to take back the goods from the pajama manufacturers. While our individual demands on the big mills form the basis for the government's suit we have not intervened because we, as small manufacturers, could not afford that litigation and therefore we are here today exercising our constitutional right to petition the Congress to seek this fairest of all possible solutions which is the passage of this legislation.

While we were engaged in these lengthy battles, we turned to the Small Business Administration for what we thought would be immediate financial relief; but, even there, despite high level meetings and prodding by us, the poor results have taken far too long to achieve and have been far too humiliating in terms of the lack of understanding of our industry and the demands made on us personally. SBA is a bureaucracy that lacks internal communications; it is hardbound by stifling rules and regulations administered by inflexible bureaucrats who do not really understand business. We have even been threatened by the mills that an SBA loan would hurt our credit line. And, in addition to all this, we must repay whatever loans we might receive from SBA at 6⅝ percent interest. We did not want to go to the SBA in the first instance, but government action has forced us to pursue this course, We feel strongly that other more fair avenues of economic redress should be open to us.

And where are we today? Some of us have gone under; others are barely afloat and all of us, I can say without reservation, are in a worse economic position today than we were on April 8, 1977. Personally, my small company's plans for expansion have been set back over 48 months; our debt-to-equity ratio is poor and the worth of my own investment of time and energy is at rock-bottom; and we have been moved by our bank to a more burdensome method of financing which has increased our interest cost and given them at the same time a greater amount of collateral. In summary, because of Tris we are all overleveraged, undercapitalized and retarded in growth.

The adverse economic consequences for the cutters and sewers as a result of the ban have been devastating. Almost all of the apparel manufacturers are small family-owned businesses with minimal cash reserves. These businesses require extensive credit from the financial community to carry them between the date they purchase the fabric or fiber until the time the retailers pay for those goods. As

much as six months can elapse between the time the garment manufacturer ships the goods and the date that the retailer transmits payment. During that period the garment manufacturer relies upon his borrowing capacity and his incoming accounts receivable from the previous season. We have now been placed in an extended position with respect to our financing and avaiable credit.

We feel very strongly that the Tris situation is different from other government recalls. After all, we in the industry were following a government-mandated directive when we were all forced to produce, within 1 year's time, a flame retardant pajama that would meet the government's specifications and also be a commerically viable product. You must understand that the garment had to feel right, too, before a mother would purchase it and put it on her child. Nevertheless, we met our government's mandate. But, what has happened now is that the government has changed its own rules in the middle of the game and we find that our only recourse is here with S.1503.

This situation is different from cranberries, cyclamates, saccharine and toys. In those instances, private enterprise was simply using its own ingenuity in developing products that were found to be ultimately hurtful or harmful. Here, though, private enterprise was following its government's orders when government declared the product to be harmful. We believe that these two types of situations are distinguishable enough and compelling enough for the Congress to act to make us whole.

We are as the small business children's sleepwear manufacturers particularly the one segment of the industry to suffer the most, to be least able to absorb the economic losses and, in many ways, to be the least culpable. Yet, we are the one segment of the whole industry to receive garments back even as we sit here though we are told by the big mills that no ban is in effect and, therefore, we must hold onto these goods ourselves.

In many respects, our appearance here today is our last hope anywhere in government to make ourselves whole and to overcome the incredible chaos that government has created in our business. We believe our story is compelling since it typifies the thoughtlessness and unfairness of our Federal bureaucracy. While I am not a lawyer and not conversant with the law, I understand that fairness is as basic an American concept as justice and I would implore this Committee to apply both fairness and justice in its actions on our behalf. We ask for nothing more.

STATEMENT BY MANNY KAY, PRESIDENT, TOP FORM MILLS, INC.

Historical scientific reasons for the use of Tris—"forced technology".

Precedents for indemnification by Congress—five examples.

Continuing pattern of Government errors with respect to initial setting of flammability standards.

Errors in promulgating the ban on Tris itself and such subsequent errors as inequitable economic distribution of the recall, excess profits to the retailer, and failure to mandate disposal of the goods.

Support of S. 1503.

Mr. Chairman, my name is Manny Kay, and I am President of Top Form Mills, Inc., of New York. Our firm is a manufacturer of children's sleepwear and other apparel.

I sincerely appreciate this opportunity to appear before the Committee to seek a solution to a serious problem which has adversely affected many small manufacturers of children's sleepwear. My purpose here is not to reiterate what has been said about the reasons for the Tris ban. We have no quarrel with the April 1977 ban by the CPSC of children's sleepwear containing Tris. According to the state of the scientific data, it was the judgment of an agency of the United States government that Tris was a carcinogen, and that it possesses a severe potential hazard to the children of our country.

However, the manner in which the ban was instituted, combined with the events which followed, perpetuated a long series of mistakes and errors on the part of our Government. The impact of these have fallen entirely on the small business segment of the children's sleepwear industry.

The debacle of the Tris ban and its aftereffects did not begin on the date that this substance was banned by the CPSC, rather it began back in 1970 and 1971 when the children's flammability standards for sleepwear were first proposed by the Department of Commerce and were ultimately mandated by law.

Before the sleepwear standards were put into effect, cotton was used in 90 percent of children's sleepwear. After the sleepwear standards took effect, other fibers accounted for 90 percent of children's sleepwear. The Department of Commerce gave

the industry two years to meet the standards because it recognized that there were almost no fabrics in existence which would meet the requirements of the regulation. The industry strongly objected, but was overruled by the Department of Commerce, which decided that it would be technologically practical for the majority of the companies in the industry to comply with the standards within 24 months. Some companies, in fact, would be able to comply within 12 months.

The industry was wrong; we met the requirements with the time frame set by the standard. Nevertheless, the standard "forced" technology in that the technology did not then exist to comply; but the government requested the large mills, particularly manufacturers of fibers and fabrics, to develop a fabric that would be flame retardant. A crash program was undertaken by these mills to meet the needs of the government and of society.

Mr. Chairman, the manufacturers of children's sleepwear have requested the Federal government to provide for the payment of losses incurred as a consequence of the ban. Such assistance by the Federal government is not unique in the history of our country. For example, one billion dollars has been expended for railroad revitalization and much assistance has been given to our aircraft industry to ensure its continued viability. These instances indicate a recognition by Congress that Certain areas of business must be helped in order to ensure their survival.

In addition, specific precedents exist for indemnification:

1. The 88th Congress enacted a bill which gave the Court of Claims the power to consider farmers' claims for losses which resulted from the Food and Drug Administration's admitted error in seizing a contaminated spinach shipment. The spinach shipment was shown not to be contaminated and the farmers recovered approximately $300,000 (Priv. L. 88-346).

2. It is well known that the Department of Agriculture is authorized to pay claims arising when the government or the Department orders the destruction of animals, plants, or other materials for the purpose of controlling and eradicating communicable diseases in livestock or poultry (21 U.S.C. 114a, 134a).

3. The Administrator of the Environmental Protection Agency is directed to indemnify manufacturers of pesticides for inventory losses suffered because of the Administrator's suspension or cancellation of the registration of the pesticide, unless the manufacturer knew the pesticide did not meet registration requirements and continued to produce it without notifying the Administrator (7 U.S.C. 136m).

4. Private parties who clean up an unlawful discharge of oil or a hazardous substance into or upon navigable waters can sue the government in the Court of Claims to recover the costs of the cleanup if they can show that the discharge was caused solely by an act of God, and act of war, negligence on the part of the U.S. Government, or an act of omission by a third party (33 U.S.C. 1321(i)).

5. Finally, a case that was widely reported in the press involved the owners of sheep and other livestock in parts of Nevada and Utah. Evidently, top secret biological and/or chemical agents were accidentally released in those areas and contaminated certain flocks of animals. I do not think that there is much doubt that the cattlemen and sheep ranchers involved were quietly, fully, and secretly compensated by the U.S. Government.

All of the above are clear precedents for indemnification of private parties by the U.S. Government. The common elements of the preceding five examples are errors, omissions, or accidents caused by the Government which did damage to private individuals or companies.

The entire sequence of events from the moment the flammability standards were enacted through the date of the Tris ban and continuing to the present day contains the same recurring pattern of errors.

The government made errors in the issuance of the original regulations.

First, earlier this year, the CPSC eliminated the Residual Flame Time ("RFT") requirements of the FF3-71 Standard. In justifying the elimination of the RFT, the CPSC said that its objectives were to reduce the necessity for the use of flame retardant chemicals in children's sleepwear. In 1971 the Department of Commerce knew without question that chemicals whose properties were not entirely known at the time would be necessary to comply with the standard. The best and most effective of these chemicals was Tris.

Second, the CPSC decided that there would be no significant reduction in the safety for children of all ages if the RFT standard was deleted. The Commission cites burn studies which showed that in only 2 out of 714 burn cases does melt drip appear to contribute to the burn injury. In other words, newer data has thrown doubt on the burn injury figures used to justify the original standards.

The CPSC made several mistakes in the ban itself.

First, they decided that the manufacturer of the garment should bear the entire burden of the ban and repurchase all Tris-treated garments. The Federal courts forced the CPSC to reconsider its method of allocating the economic injury and the CPSC complied by allocating such injury to the fabric producers, the fiber producers, and the chemical manufacturers, in addition to the garment manufacturers.

The CPSC committed further error in not allocating some responsibility for Tris-treated merchandise to retailers, many of whom have made a profit on the ban. Not only have retailers been permitted to ship back all unwashed garments in their inventory to the manufacturers and then require the manufacturers to pay for those garments plus transportation costs, but the retailers have also chosen to ship back every old garment in their inventory which had been reduced in price for clearance and not sold. The profit was derived from the difference between the markdown price and the original higher price paid to the manufacturer, which is quite obvious.

The CPSC made a further error in failing to direct us how to physically dispose of the contaminated merchandise. Even if the Tris ban was removed and the government decleared Tris to be entirely safe, there is no market in this country for Tris-treated merchancise, or, for that matter, any chemically treated children's sleepwear. The government has created fear in the minds of retailers and consumers that all chemicals involved in children's sleepwear are unsafe.

Who is to destroy Tris-treated merchandise? When there is a contaminated food product on the market, the Food and Drug Administration recalls and/or seizes the merchandise and physically destroys it. When the U.S. Customs Service intercepts millions of dollars of cocaine or heroin on its way through U.S. ports of entry, it seizes and destroys such materials. The CPSC has done nothing.

How is Tris-treated merchanidse to be destroyed? It does not burn very easily since it is flame retardant, and when it burns who knows what noxious gases might pollute the atmosphere. Should we bury it in landfill beside the radioactive waste of breeder reactors and let the Tris eventually seep into the surrounding soil and pollute the environment in that fashion? Should we use it as landfill? Should we dump it in the ocean? Should we shoot it to the moon? The CPSC is continuing to commit errors in not directing us with respect to disposal of these goods.

The CPSC has declared that washed Tris-treated garments are safe. It would be interesting to know how it came to this conclusion in the face of allegations by environmental groups that such is not the case.

We clearly see that the U.S. Government made many errors in this whole process. Furthermore, it continues to perpetuate the mistakes of the past, and, as a result, the manufacturers or children's sleepwear and other parties involved in sleepwear production continue to suffer. The entire episode smacks of inequity, a severe lack of common sense, and an injustice particularly to the garment manufacturers. I urgently request that the committee give favorable consideration to this legislation.

TESTIMONY OF STEPHEN E. SCHNITZER, EXECUTIVE VICE PRESIDENT, PAJAMA CORPORATIONS OF AMERICA, AND MANNY KAY, PRESIDENT, TOP FORM MILLS

Mr. SCHNITZER. Mr. Chairman and members of the subcommittee, my name is Stephen Schnitzer, executive vice president of the Pajama Corporation of America, Inc., a small New York corporation with a plant in Tennessee.

I want to take this opportunity to profoundly thank the subcommittee and you, Mr. Chairman, for providing us with this opportunity to testify on this still critical legislation.

It has been a little over 14 months since this catastrophe happened to us, the small pajama manufacturing companies and, in fairness, it hit us harder and more severely than any other segment of this entire industry. In fact, we are still reeling from the impact of the original Consumer Product Safety Commission ban on Tris.

We are hanging on by our fingertips having barely withstood the actions of the Commission, the continuing squeeze from the large retailers, dehumanizing humiliations from the Small Business Administration and outcries from misinformed consumer groups.

Now we have only the Congress and this subcommittee to look to for answers to the continuing questions of whether fairness and justice exist in our regulated 20th century American society.

Let me review quickly for you the events that have occurred in the last year from the perspective of a small pajama manufacturer.

At first, we accepted the ban itself and only sought redress in the courts by attempting successfully to compel the Commission to spread the economic impact of repurchase more equitably throughout the chain of distribution and production to the mills and ultimately the chemical companies themselves.

It was clear to us that the Commsision had not thought through the impact of a repurchase order that was made to end with us; for after all we are the small neck of the hour-glass caught between the large textile mills and the large retailers and we are the least able to survive in a viable fashion when Government causes such massive commercial dislocation.

We had to undertake a substantial effort in Federal District Court in Washington and, ultimately, in the Court of Appeals for the District of Columbia to overcome the Commission's lack of understanding and its continued reluctance to deal effectively with the bad situation it initially created. The Commission's false starts created confusion and cost us much in time and money.

No one realizes either that we have had to rent enormous warehouses to continue to store our recalled goods since the Commission has never to this day advised us on disposition. In addition we have had interest costs and insurance costs to maintain these storage facilities. And no matter what the outcome of this whole issue, I would still ask someone in a position of ultimate authority to tell me how to dispose of these goods.

What do we do with them?

Mr. MAZZOLI. Can you wash Tris out? I was not here for some of the earlier testimony. Is it removable, just curiosity.

Mr. SCHNITZER. I am not a chemist. According to what the Commission said, according to the ban, it banned all Tris, whether it's washed or unwashed.

Mr. MAZZOLI. I was just asking a question; thank you very much.

Mr. SCHNITZER. Just as we thought that we had overcome this first hurdle by being able, under court order, to recoup only about one-third of our piece goods costs from the mills, a Federal judge in South Carolina, Robert Chapman, on June 23 of last year struck down the Tris ban and with it the one economic foothold we had gained. The Commission subsequently spoke of a new ban but they have never done anything.

And what of Judge Chapman's ruling last June? Well, ironically, that ruling did not change anything for us with respect to the retailers who continued, even with greater intensity, to return goods because they knew they could take advantage of our weakened position in our commercial relationship with them and because they claimed, too, that the goods were simply not merchantable.

The hourglass was at work again. No mother would buy chemically-treated pajamas, the Government had poisoned the marketplace and there was no way to undo that damage.

It was interesting to note after the Chapman decision that all the media perceived it as a victory for us but, in fact, it was a crushing defeat. The mills were off the hook for the moment; we could not afford to return any piece goods to them because there was no ban and no one was willing to enforce such returns.

Then the court of appeals for the fourth circuit denied the Government's motion for a stay of Judge Chapman's order pending its appeal and in so doing the circuit court pointed the way for the Commission to statutorily enforce all aspects of the recall.

Initially, last summer the Commission pursued those unyielding retailers who had not cleared their shelves of Tris-treated sleepwear. At the same time we begin to make demands, based on our statutory rights under the Federal Hazardous Substance Act, upon the mills to take back at least our uncut inventory; their response was to cite Judge Chapman's decision and charge us interest on the money they claimed we owed them for goods which they would not accept back.

Based on this circumstance, the Government ultimately sued seven of the mills to force them to take back the goods from the pajama manufacturers. While our individual demands on the big mills form the basis for the Government's suit we have not intervened because we, as small manufacturers, could not afford that litigation and therefore we are here today exercising our constitutional right to petition the Congress to seek this fairest of all possible solutions, which is the passage of this legislation.

While we are engaged in these lengthy battles, we turned to the Small Business Administration for what we thought would be immediate financial relief, but, even there, despite high-level meetings and prodding by us, the poor results have taken far too long to achieve and have been far too humiliating in terms of the lack of understanding of our industry and the demands made on us personally.

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We did not want to go to the SBA in the first instance, but Government action has forced us to pursue this course. We feel strongly that other more fair avenues of economic redress should be open to us.

And where are we today? Some of us have gone under; others are barely afloat and all of us, I can say without reservation, are in a worse economic position today than we were on April 8, 1977. Personally, my small company's plans for expansion have been set back over 48 months; our debt-to-equity ratio is poor and the worth of my own investment of time and energy is at rockbottom.

We have been moved by our bank to a more burdensome method of financing which has increased our interest cost and given them at the same time a greater amount of collateral. In summary, because of Tris we are all overleveraged, undercapitalized, and retarded in growth.

The adverse economic consequences for the cutters and sewers as a result of the ban have been devastating. Almost all of the apparel manufacturers are small, family-owned businesses with minimal cash reserves. These businesses require extensive credit from the financial community to carry them between the date they purchase the fabric or fiber until the time the retailers pay for those goods.

As much as 6 months can elapse between the time the garment manufacturer ships the goods and the date that the retailer transmits payment. During that period the garment manufacturer relies upon his borrowing capacity and his incoming accounts receivable from the previous season. We have now been placed in an extended position with respect to our financing and available credit.

We feel very strongly that the Tris situation is different from other Government recalls. After all, we in the industry were following a Government-mandated directive when we were all forced to produce, within 1 year's time, a flame-retardant pajama that would meet the Government's specifications and also be a commercially viable product.

You must understand that the garment had to feel right, too, before a mother would purchase it and put it on her child. Nevertheless, we met our Government's mandate. But, what has happened now is that the Government has changed its own rules in the middle of the game and we find that our only recourse is here with S. 1503.

This situation is different from cranberries, cyclamates, saccharine, and toys. In those instances, private enterprise was simply using its own ingenuity in developing products that were found to be ultimately hurtful or harmful.

Here, though, private enterprise was following its Government's orders when Government declared the product to be harmful. We believe that those two types of situations are distinguishable enough and compelling enough for the Congress to act to make us whole.

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In many respects, our appearance here today is our last hope anywhere in Government to make ourselves whole and to overcome the incredible chaos that Government has created in our business.

We believe our story is compelling since it typifies the thoughtlessness and unfairness of our Federal bureaucracy.

While I am not a lawyer and not conversant with the law, I understand that fairness is as basic an American concept as justice, and I would implore this committee to apply both fairness and justice in its actions on our behalf.

We ask for nothing more.

Thank you.

Mr. MAZZOLI. Thank you very much.

Mr. Kay?

Let me ask you, sir, for the purposes of time, if your statement is different than your comments?

Mr. MANNY KAY. Somewhat different, yes.

Mr. MAZZOLI. Perhaps you can emphasize the different points.

Mr. MANNY KAY. I would have to go through to pick out the actual points. I don't think it will take me that long.

Mr. MAZZOLI. Thank you.

Mr. MANNY KAY. Mr. Chairman, my name is Manny Kay.

I am president of Top Form Mills, Inc., of New York. Our firm is a manufacturer of children's sleepwear and other apparel.

I sincerely appreciate this opportunity to appear before the committee to seek a solution to a serious problem which has adversely affected many small manufacturers of children's sleepwear. My purpose here is not to reiterate what has been said about the reasons for the Tris ban.

We have no quarrel with the April 1977 ban by the CPSC of children's sleepwear containing Tris. According to the state of the scientific data, it was the judgment of an agency of the U.S. Government that Tris is a carcinogen, and that it possesses a severe potential hazard to the children of our country.

However, the manner in which the ban was instituted, combined with the events which followed, perpetuated a long series of mistakes and errors on the part of our Government. The impact of these have fallen entirely on the small business segment of the children's sleepwear industry.

The debacle of the Tris ban and its aftereffects did not begin on the date that this substance was banned by the CPSC, rather it began back in 1970 and 1971 when the children's flammability standards for sleepwear were first proposed by the Department of Commerce and were ultimately mandated by law.

Before the sleepwear standards were put into effect, cotton was used in 90 percent of children's sleepwear. After the sleepwear standards took effect, other fibers accounted for 90 percent of children's sleepwear.

The Department of Commerce gave the industry 2 years to meet the standards because it recognized that there were almost no fabrics in existence which would meet the requirements of the regulation.

The industry strongly objected, but was overruled by the Department of Commerce, which decided that it would be technologically practical for the majority of the companies in the industry to comply with the standards within 24 months. Some companies, in fact, would be able to comply within 12 months.

The industry was wrong; we met the requirements within the time frame set by the standard. Nevertheless, the standard "forced" technology in that the technology did not then exist to comply, but the Government requested the large mills, particularly manufacturers of fibers and fabrics, to develop a fabric that would be flame retardant. A crash program was undertaken by these mills to meet the needs of the Government and of society.

Mr. Chairman, the manufacturers of children's sleepwear have requested the Federal Government to provide for the payment of losses incurred as a consequence of the ban. Such assistance by the Federal Government is not unique in the history of our country.

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5. Finally, a case that was widely reported in the press involved the owners of sheep and other livestock in parts of Nevada and Utah. Evidently, top secret biological and/or chemical agents were accidentally released in those areas and contaminated certain flocks of animals. I do not think that there is much doubt that the cattlemen and sheep ranchers involved were quietly, fully, and secretly compensated by the U.S. Government.

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without question that chemicals whose properties were not entirely known at the time would be necessary to comply with the standard. The best and most effective of these chemicals was Tris.

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First, they decided that the manufacturer of the garment should bear the entire burden of the ban and repurchase all Tris-treated garments. The Federal courts forced the CPSC to reconsider its method of allocating the economic injury and the CPSC complied by allocating such injury to the fabric producers, the fiber producers, and the chemical manufacturers, in addition to the garment manufacturers.

The CPSC committed further error in not allocating some responsibility for Tris-treated merchandise to retailers, many of whom have made a profit on the ban. Not only have retailers been permitted to ship back all unwashed garments in their inventory to the manufacturers and then require the manufacturers to pay for those garments plus transportation costs, but the retailers have also chosen to ship back every old garment in their inventory which had been reduced in price for clearance and not sold.

The profit was derived from the difference between the markdown price and the original higher price paid to the manufacturer, which is quite obvious.

The CPSC made a further error in failing to direct us how to physically dispose of the contaminated merchandise. Even if the Tris ban were removed and the Government declared Tris to be entirely safe, there is no market in this country for Tris-treated merchandise or, for that matter, any chemically treated children's sleepwear. The Government has created fear in the minds of retailers and consumers that all chemicals involved in children's sleepwear are unsafe.

Who is to destroy Tris-treated merchandise? When there is a contaminated food product on the market, the Food and Drug Administration recalls and/or seizes the merchandise and physically destroys it. When the U.S. Customs Service intercepts millions of dollars of cocaine or heroin on its way through U.S. ports of entry, it seizes and destroys such materials. The CPSC has done nothing.

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in the face of allegations by environmental groups that such is not the case.

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The entire episode smacks of inequity, a severe lack of commonsense, and an injustice particularly to the garment manufacturers.

I urgently request that the committee give favorable consideration to this legislation.

Thank you, Mr. Chairman.

Mr. MAZZOLI. Thank you very much, gentlemen.

I would like to ask Mr. Schnitzer a question.

First of all, what type of material do you use today to make your children's sleepwear?

Mr. SCHNITZER. We use fabrics that are made of 100 percent polyester primarily for children's sleepwear.

Mr. MAZZOLI. Is that true with the industry as a whole?

Mr. SCHNITZER. I would think so. There are some other blends of fabrics that can be used, modacrylics have been used in the knit area. Some nylons are used, but basically I think the staple product is polyester today.

Mr. MAZZOLI. These have been cleared by some regulation as to flammability?

Mr. SCHNITZER. The mills, even from the first instance, we have always purchased the fabric to meet a standard from the mill. And because——

Mr. MAZZOLI. The mill represents to you that it meets a standard, because I understand bales or rolls of material are sent to you, and you do the cutting and sewing, and the garment is sent to X, Y, and Z retailer.

Mr. SCHNITZER. We purchase the fabric from the mill, and since the ban has taken place or actually before the ban when the issue over Tris became one we were aware of, the mills started to work on No. 1, different chemicals, and then No. 2, on fabrics that had no chemicals, and the real reason that the work was done to develop fabrics without chemicals was because the retail community said, look, we have had enough.

Mr. MAZZOLI. As Mr. Kay was saying.

Mr. SCHNITZER. Yes, enough of this whole thing, and we don't want any fabrics unless they are chemically free. The major retailers in the country asked that and then the entire retail community followed suit.

Mr. MAZZOLI. If I understand correctly, a mill then from whom you buy your material has represented to you that this material meets whatever flammability standard?

Mr. SCHNITZER. Meets U.S. standards.

Mr. MAZZOLI. You are relying on them today as you relied upon them 5 or 6 years ago?

Mr. SCHNITZER. Yes.

Mr. MAZZOLI. When they sold you Tris?

Mr. SCHNITZER. Yes, today we might be a little more inquisitive in hindsight but, basically, we still are requiring them to meet the standard.

Mr. MAZZOLI. Basically, you are saying to the manufacturers you pretty much have to rely on somebody else's representation because you cut and sew, is that basically it?

You don't test; you have no chemist on your staff?

Mr. SCHNITZER. We have no chemists on our staff.

Mr. MAZZOLI. Let me ask you on page 6 of your statement you distinguish your case from cranberries, cyclamates, saccharine and toys by saying in those cases private enterprise was using its ingenuity in developing a product later found to be harmful.

In your case, private industry was following the Government's order. Wasn't private industry using its own ingenuity in meeting a Government standard by coming up with Tris? Therefore, why should this kind of ingenuity be distinguished from the other kind of ingenuity, one rewarded and the other one not?

Mr. SCHNITZER. There simply the chemical industry is the one that developed Tris or had Tris developed. The segment of industry that we purchased our raw material from made a decision, an economic decision or one based on a regulatory decision that they could use Tris to meet this standard.

At the time when we purchased this we had no idea that there was any or we didn't know about the word Tris. We knew that we were again buying that fabric to meet a standard that the Government had told us we had to meet in terms of selling the product to the retailers.

Mr. MAZZOLI. Mr. Kay?

Mr. MANNY KAY. May I try to supplement that remark?

Mr. MAZZOLI. You talked yourself of distinguishing certain cases.

Mr. MANNY KAY. I believe what Mr. Schnitzer intended was the fact the cyclamate and other industries he mentioned were brought out for public use for personal profits of companies who were ingenious enough to develop something that could replace something for the sake of their own profits.

They made those profits, but later, whatever their penalties were when it was found to be unsafe, that is completely contrary to Tris. We didn't put Tris into our products or use Tris knowingly or unknowingly to make profits, additional profits, new products. We just complied with the law that said you must have flame retardants.

Mr. MAZZOLI. Mr. Kay, while you have the microphone, let me ask you this, if I understand the sequence of events, there was an April 1977 ban issued by the Consumer Products Safety Commission as to Tris.

Now, when did you hear, you, yourself, Manny Kay, hear of the April 1977 ban?

Mr. MANNY KAY. April 7.

Mr. MAZZOLI. How was it communicated to you?

Mr. MANNY KAY. If I recall correctly, a telephone message from our legal people.

Mr. MAZZOLI. Who had been monitoring the action and watching it in some fashion?

Mr. MANNY KAY. Yes.

Mr. MAZZOLI. What did you get, or what was the substance of what your attorney told you?

Mr. MANNY KAY. If I can recall correctly——

Mr. MAZZOLI. I mean what you derived. Does it mean you could do certain things and not other things?

Mr. MANNY KAY. Actually, we reacted to that a month prior to that. When the original—I think it was in March—comments were made, it looks as though this Ames test will prove this to be carcinogen, and that the final results are being awaited by the CPSC. At that time, we stopped production.

Our customers would not accept merchandise which they had a contract, and we came to a complete standstill.

Mr. MAZZOLI. In other words, your retailers were being advised by their own attorneys, whatever, that Tris was in a questionable position and might well be banned, so they were not buying it from you for at least a month or so, and you were not making it?

Mr. MANNY KAY. We stopped right in the middle of it. We had the order.

Mr. MAZZOLI. Your fabrics stayed in the corner, or up on the wall; that is it?

Mr. MANNY KAY. That is correct.

Mr. MAZZOLI. Is that basically your situation?

Mr. SCHNITZER. It is even a little more dramatic than that. We were very concerned about Tris because we do such a large amount of business in fabrics that had been treated with Tris, and when the first information started to come out in 1976, we started talking to the mills that we purchase fabric from, saying, what are you going to do about this thing? We should get out of it. It is bad. Let's make a change.

The mills said they were working on changes, that they had other chemicals they felt could do the job, but there were a lot of problems involved in running these chemicals in production, and that they were trying to get them worked out.

One mill in particular told us they were going to not ship Tris unless specifically requested to do so by a customer.

In our particular case, we thought we were clear of any Tris in our inventory, for the most part, except some carryover fabric from the prior season. When the ban came, and we did the checking with the mills, we found we had a substantial amount of Tris fabric shipped to us—there was no ban, so it could be done legally—but we thought we were receiving non-Tris fabric.

Mr. MAZZOLI. Even for a professional like yourself, it is a hard thing to distinguish if a fabric has been treated with Tris?

Mr. SCHNITZER. There is no way.

Mr. MAZZOLI. You have to look at a carton that the material comes in or some sort of tag, or what?

Mr. SCHNITZER. On the purchase order and on the invoice the word Tris or chemical never shows up.

Mr. MAZZOLI. So really basically your industry relies on representation made to it by others?

Mr. SCHNITZER. Yes, sir.

Mr. MAZZOLI. Let me ask both of you gentlemen, would you say your experience with respect to the small garment manufacturers of children's sleepwear is basically about the same, that is, from

1976, 1975, that there was concern and contact between the manufacturers and the fabric people and attorneys, and so forth? Is that basically the case?

Mr. SCHNITZER. In our case, the contact was not with either manufacturers or attorneys until really, say, 3 months prior to when we thought the ban would take place, other than for just discussion purposes. We had a lot of contact with the retailers and people we bought fabric from.

Mr. MANNY KAY. Pretty much the same thing.

Mr. MAZZOLI. Would it be fair to say, without trying to put words in anybody's mouth, that unlike what has been somewhat characterized, you guys didn't spin and cut, and sew and produce up until the very last 12 o'clock, high noon, in order to get the garments out there?

Mr. MANNY KAY. No.

Mr. SCHNITZER. No.

Mr. MAZZOLI. So that you were being somewhat, if you would use the term, prudent, or careful or watchful or mindful of what was happening?

Mr. MANNY KAY. By all means.

Mr. MAZZOLI. The gentleman from Virginia.

Mr. HARRIS. Thank you, Mr. Chairman.

Mr. Schnitzer, I note on page 6 of your statement that you make the statement that following a government mandated directive, we were all forced to produce within 6 months' time flame-retardant pajamas. Your oral testimony was 1 year's time.

Mr. SCHNITZER. That was a correction from yesterday.

Mr. HARRIS. I thought there was a 2-year time.

Mr. SCHNITZER. The actual legislation that directed us to make the garments flame-retardant, there was a 1-year time. The Department of Commerce had been working on the issue for 2 years, you know, saying it was really a 2-year time. But from the time a directive was actually made, saying that you will comply, there was a 1-year time frame.

Now, I would like to comment further on that, that in reality there really isn't a 1-year time frame. It is a 1-year time frame to ship the product, but in terms of the manufacturing process, based on the seasonality of the sleepwear business, where approximately 70 percent of it is done in the fall season of the year, you are basically building inventory in your business on a year-round basis to ship for that fall season, so effectively, the mills were really mandated to develop a fabric that would meet that standard to ship to the cutters and sewers within a shorter time frame than what the actual legal documents say, because we would have to get fabric, for instance, in January to start shipping a fall product in June. We would start building that inventory.

Mr. HARRIS. I guess I am still confused with the difference between 1 and 2 years. You are saying that the directive was issued in a way you only had 1 year.

Mr. MANNY KAY. Actually it was 2 years, but the regulation said if you didn't comply within 1 year, that during the second year you would have to so label the merchandise that it was not flame retardant. That was actually 2 years.

Mr. HARRIS. Thank you. That perfects my knowledge. I didn't realize that was the case. One-year time with your leadtime, and I am somewhat familiar with the industry; it would be a hardship to meet that. You were pressed.

Your statement implies that the government somehow mandated Tris. You have no way of knowing, do you, that government mandated Tris. They certainly didn't mandate Tris. They mandated standards.

Mr. SCHNITZER. Yes.

Mr. HARRIS. And you have no way of knowing that those standards could not have been met in any way, do you?

Mr. SCHNITZER. No.

Mr. HARRIS. The essential question here, I know you have been here at the testimony, that has to be resolved is what is the responsibility for the suppliers?

I know your type of business well enough to realize that you have to depend on suppliers; you are ordering, again, certain standards. You have to make a presumption that the suppliers have met those standards in a satisfactory manner.

So don't you think that the supplier has a responsibility to determine whether they are meeting those standards in a responsible manner?

Mr. SCHNITZER. Which standard are you referring to? The flame-retardant standard?

Mr. HARRIS. Basically, start out with the Government saying after a great number of years of having a statute on the books that said we should be careful about fabrics and their inflammable characteristics, to finally issue standards, because apparently they felt the industry was not coming along well enough as far as coming up with a safe product.

Those standards are issued, and so you know you have to meet those standards. So I presume you go to the supplier and say you need fabrics that meet those standards.

I guess, in addition, you don't feel that you have to say, well, make sure you don't meet those standards in a way that causes rashes and cancer, and things like that.

I presume you go to the supplier with the understanding, or at least the implied warranty, that he is going to meet those standards in a way that is acceptable as far as health and safety standards are concerned?

Mr. SCHNITZER. Initially there were certain fabrics that were developed for flame retardancy. Somebody talked about one that had 30 percent chemical in it, and it was as stiff as a board.

For 3 years in our area we used a fabric made out of 100-percent cotton flannel that was treated with a different chemical, not Tris. I think it is pyrovatex, and this chemical caused the fabric to weaken; it would weaken so much that we received, I would say, a ten times greater return of product to us because the seams would break after the first washing, because the chemical had weakened the cotton fabric so much and there was no way the mill could develop a way to treat the fabric in order to prevent this from happening.

This is something we lived with until we had to eliminate all topically treated fabrics.

Mr. HARRIS. Basically my question is, do you feel that when the supplier told you that it was supplying you fabric that met the safety standards that they had a responsibility to also achieve that in a way that was not harmful to the health and safety?

Mr. SCHNITZER. I think they had a responsibility, yes, to insure that we were receiving a product that was safe to distribute. I feel that is their responsibility.

Mr. HARRIS. In your review of the situation, do you feel—and any of you can answer this—that the suppliers exercised the necessary responsibility, or if they perhaps fell down on the job of making sure that what they were sending you was safe?

Mr. MANNY KAY. They exercised the responsibility on toxicity, as we understand from some prior testimony, and we also learned that their was no way of testing for any carcinogen problem until the Ames test came into effect, and that took many, many years before that was proven to be somewhat or potentially accurate.

So that even though a mill might have dreamed of something being potentially cancerous, it would have taken far more years than the Government had permitted any of us to ship children's pajamas to comply with the flame-retardancy act.

Mr. HARRIS. That seems to say that you feel perhaps the suppliers were as responsible as they could be to test out as far as health hazards were concerned, on the product they were supplying you?

Mr. MANNY KAY. I couldn't answer that either way, because that is their business, and I don't know what test they make on health standards.

Mr. HARRIS. But this is your business, too. If you are going to rely on your supplier and say that is not my job to determine that the fabric is safe, that is the supplier's job.

Mr. MANNY KAY. We, as a small manufacturer, rely on two people, the mill people and the giants that we do business with. They tell us what the hell to do.

Mr. HARRIS. I understand your situation. I don't think you want to give the committee the impression that the small manufacturer is the only one in this business. You may have some competition that is vertically integrated that are pretty big guys, don't you?

Mr. SCHNITZER. There are some that are quite large, yes.

Mr. HARRIS. This is where you run into problems. It is one thing for us to listen and be terribly sympathetic with the relatively small manufacturer, but then we also have to consider the manufacturer who may not only sew and cut, but may also spin or weave—I don't know whether you weavé in your industry any more or not.

Mr. SCHNITZER. We do both.

Mr. HARRIS. And knit. Also, may even do some spinning. That manufacturer, I don't know who he relies upon; he is doing pretty much of it himself and there are even some that are directly involved in introducing and were directly involved in introducing Tris in their product.

I don't suppose anybody at the table was directly involved in introducing Tris in the product.

Mr. SCHNITZER. I don't think so.

Mr. HARRIS. There are some in the apparel manufacturing industry that were directly involved in introducing Tris in the product, were there not?

Mr. MANNY KAY. Not that I am aware of. Not a cut and sewer. We would have nothing to do with the fabric.

Mr. HARRIS. My point is there is some cutting and sewers that go pretty far back as far as production is concerned, maybe as far back as the thread; isn't that correct?

Mr. MANNY KAY. They may be verticals.

Mr. HARRIS. Yes, sir. You know about them; they are pretty tough competition, aren't they?

Mr. MANNY KAY. Anybody vertical usually is.

Mr. HARRIS. I had testimony yesterday from one person in your industry that said that he didn't know what Tris was until the order came out; he had never heard of it before. Were you in that situation?

Mr. MANNY KAY. We had heard the name Tris. Our large customers told us more about it than our suppliers.

Mr. HARRIS. Were you under the impression that Tris had been certified by the Government as safe, or do you feel that the Government had at sometime certified this chemical?

Mr. MANNY KAY. Not to our knowledge; no.

Mr. HARRIS. Thank you, Mr. Chairman.

Mr. MAZZOLI. Thank you very much, Mr. Harris.

Mr. Coffey?

Mr. COFFEY. No, thank you.

Mr. MAZZOLI. Before we leave, on a lighter note, I am sure you have been told a thousand times you look like Buddy Hackett.

Thank you very much for your testimony.

The panel would be very happy to hear from Ms. Evelyn Dubrow, vice president, International Ladies Garment Workers Union, a congressional observer, I guess, you would say. It is nice to have you.

TESTIMONY OF EVELYN DUBROW, VICE PRESIDENT, INTERNATIONAL LADIES GARMENT WORKERS UNION, WASHINGTON, D.C.

Ms. DUBROW. Just a lobbyist.

Thank you, Mr. Chairman, and members of the committee. I do not have a prepared statement. I would like to be able to submit one in the record.

Mr. MAZZOLI. Without objection, it will be made a part of the record.

[The prepared statement of Ms. Dubrow Follows:]

STATEMENT OF EVELYN DUBROW, VICE PRESIDENT AND LEGISLATIVE DIRECTOR, INTERNATIONAL LADIES' GARMENT WORKERS' UNION

The International Ladies' Garment Workers' Union is pleased to join its employers engaged in the manufacture of children's and infants' sleepwear in support of H.R. 7158 dealing with the ban on the use of the chemical Tris in apparel. This measure would permit the U.S. Court of Claims to establish the dollar value and judge the losses sustained by the manufacturers and producers of goods outlawed by the Consumer Product Safety Commission because such goods contained Tris.

To pass such legislation, already enacted by the Senate of the United States in S. 1503, would be simple justice for thousands of workers employed in 100 plants across the country producing children's sleepwear. These workers and these employ-

ers, through no fault of their own, became victims of an inequitable decision by the Consumer Product Safety Commission that producers of children's sleepwear made of Tris-treated fabric were to be financially responsible for the recall of all such sleepwear. In addition, there was a cease and desist order dealing with the continued manufacture of Tris-treated apparel.

Let me make it clear for the record that the ILGWU did not oppose the imposition of the Tris ban. On the contrary, not only did the Union support the CPSC decision to outlaw the use of the Tris-treated fabric, but it opposed the idea that such garments should be shipped abroad to countries where the consumer safety laws are not as stringent as ours. It is our firm belief that what might be hazardous to American children obviously could be hazardous to children elsewhere.

However, in obeying the CPSC order to not only discontinue the use of Tris-treated fabric and to recall such garments as were distributed to retailers, a very unfair burden was placed on children's sleepwear manufacturers. There is no way in the world that these employers could be aware that the fabric contained a chemical that could be considered carcinogenic. These materials were sent to them and used by them in good faith. When the order came down, it meant that thousands of yards of Tris-treated fabric would have to be abandoned, a very costly item to the manufacturer. More than that, the tremendous amount of money involved in recalling or repurchasing the sleepwear items already distributed became very prohibitive.

To shore up the argument that this decision put the greatest burden on those least responsible for the use of Tris in children's sleepwear is the unanimous support for the legislation before this Subcommittee today by all of the members of the present consumer Product Safety Commission contained in a letter to the Chairman of the House Judiciary Committee, Peter Rodino, dated April 27, 1978. The letter stated that the manufacturers of children's sleepwear "have been economically harmed through no fault of their own." The Background on the prohibition of the use of Tris is an interesting one and clearly indicates that the failure to recognize the dangers of Tris did not lie with the manufacturers of children's sleepwear.

In 1953, Congress passed, and the President signed, the Flammable Fabrics Act to remove very combustible fabrics from the market.

In 1967, the Act was amended to allow the Secretary of commerce to issue additional standards.

In 1971 and again in 1974, flammability standards were amended to where flame retardent chemicals could be added to the fabric. The sleepwear industry reported concern over possible health hazards from the use of chemicals. However, since their concern brought no evident reaction from the government agencies involved, the industry used the Tris-treated fabrics because the buying public showed a preference for these materials.

The evidence that Tris might contain carcinogenic chemicals was produced in 1976 by the Environmental Defense Fund in its petition to the CPSC to have the labels on Tris-treated garments call for three washings before use.

In February 1977, the Environmental Defense Fund petitioned for a ban on the sale of garments containing Tris.

April 1977 brought this ban by the CPSC under the Hazardous Substances Act. Conservative estimates placed on the value of goods involved by the ban came to about $50 million.

This may not seem like an inordinate sum. However, looking at the sleepwear industry employing about 27,000 workers in small plants over the country, the need to bear the brunt of the Tris ban in recalling the finished sleepwear with total reimbursement to the retailers has already cause some plant closings and brought others to the verge of bankruptcy.

Fortunately, most of the affected plants were able to shift to other products but those seeking credit for continued operations found the market loath to extend such credit. Only by a willingness to sustain personal financial losses were a number of employers able to hold on to their manufacturing establishments.

The fact that the CPSC did not pretest these fabrics early enough stands out as a form of misfeasance of the government. The financial fallout, therefore, should be borne by the government and not by the industry which sought to comply with the Flammable Fabrics Act.

There is another reason why H.R. 7158 should be enacted by the House of Representatives. Thereafter, the conference dealing with this should take place and the final piece of legislation passed by both the House and the Senate should be sent to the President's desk and signed into law. This should be done, not only because it is just and right to indemnify the manufacturers of children's sleepwear, but be-

cause of the ripple effect the ban could have on the industry and its thousands of workers as well as to the business life of the communities where the plants operate. Many of these are in rural areas where they are the only industry in town. The whole community suffers when an individual plant cannot survive and puts its citizens of the community out of work.

In an industry such as the children's and infants' wear manufacturing, already plagued by import penetration because of which ILGWU members lose their jobs, failure to relieve the children's sleepwear industry from paying damages due to this Tris ban is one more unfair burden they are asked to assume.

It is our hope that the Congress of the United States and the President will act with promptness to redress the inequities of the CPSC ruling on the use of Tris.

To do this, this Subcommittee, the House Judiciary Committee and the House of Representatives should enact H.R. 7815 as speedily as possible.

The ILGWU wishes to express its appreciation for the opportunity to present its views on this legislation to the Subcommittee.

Ms. DUBROW. The reason I don't have it prepared is because I want to get some statistics that will help in terms of your inquiry into this matter. I would like also to say that on behalf of the International Ladies Garment Workers Union—and we have about 375,000 members now; we have lost 100,000 members in the last 10 years, not all of it because of Tris, I can assure you, but there is certainly in that number of members that have been lost, workers who did work in factories making children's sleepwear, and so we are very concerned with this. I would like to say, too, that I want to narrow my testimony to just the garment manufacturers. I have no idea what the fabric mills have done, what the chemical mills have done, but I do feel in a sense the Government is responsible for at least partially indemnifying what the garment manufacturers went through in the matter of Tris.

I happen also to be head of the AFL–CIO consumers subcommittee, and, as such, lobbied very hard for the Flammable Fabrics Act, because we believe in it; we wanted protection for people. But we also felt at the time that this was happening, and to go even further back, I guess I worked as hard for the establishment of the Consumer Product Safety Commission as any lobbyist on this Hill, again because we have people with whom we are concerned. Our resources are our members, and so their safety and their home life and everything concerns us, and consumer product safety was one of the things we were concerned with.

But I feel when you do establish a commission, and when that commission is supposed to set up regulations, that that commission has to go beyond just saying these are the standards, and you have to do this.

It seems to me when the Flammable Fabrics Act was set up and the Consumer Product Safety Commission was given the responsibility of setting standards for fabric safety, that they should have immediately started to test certain things that were going to substitute for the cotton that was used mostly for children's—or the flannel that was used. I grew up in the Dr. Denton days, and I must say I never got burned. My mother and father didn't smoke around me and didn't have matches around me, but there were some children who were burned, and one of the things we wanted to get away from was having them suffer for that.

As a substitute, instead of having only minor accidents in terms of flammable fabrics used for children's sleepwear, we got Tris, and we have no way of knowing how broad that damage is. I think that

is a responsibility of the Government. You don't substitute one thing for another without being sure that the substitution is safe. And I feel that the Consumers Product Safety Committee, and perhaps even the Commerce Department, did not make their tests quickly enough on the chemicals that were going to be used.

I assume that the chemical companies informed the Consumer Product Safety Committee and any other agency that was involved, that they had this chemical, and it seems to me that that was the time when the tests should have been made before Tris was manufactured and used in the garment manufacturing of children's apparel. I think that is one of the things that shows Government responsibility.

I think the chemical companies might be responsible, and the textile mills who certainly knew what was going into them may have been responsible, but as far as the garment manufacturer is concerned, I feel the Product Safety Commission had some responsibility in terms of their manufacturing and using what they thought was the kind of materials that met the standards set by the Government of the United States.

Now, I would like to say for Congressman Harris' sake, and you know a little bit about the garment industry, I think, that there are really no large garment manufacturers that make the fabric, weave and then send it in. Usually they are jobbers. For instance, you may have Sears, Roebuck that buys this, makes it; they make the fabric, but they job out; they contract out for the sleepwear, and some of the plants that we have under contract do make sleepwear for Sears, Roebuck, but they don't know anything about the fabric. They get the fabric that is sent to them by either Sears, Roebuck or any manufacturing concern that Sears, Roebuck has an interest in.

But the garment manufacturer is small. If there are 25 or 30 employees, that is considered a middle-sized garment factory. A hundred is considered a large factory, particularly in children's apparel. So that you can't very well ask that small manufacturer who has enough trouble, who has to deal with the union, finds the union is a good thing to deal with because we discipline our people, but he does have to pay the wages; he does have to have good working conditions; he does have to worry about getting the fabric; and he has all of those problems. You can hardly expect him to be responsible for saying to his fabric person, what have you got in here? And even if you told him, I wouldn't know what Tris was before all of this started. I didn't know what kind of a chemical goes into Tris. I don't even know what polyester is made of. I know my people make the clothes. I know they use the fabric, but nobody really knows the chemical terms, and if you told a manufacturer that he might not even know, he might go to his child—studying chemistry—and say, what is this all about? He would still have no way of knowing whether it was a safe product to use or not.

That is one point I want to make. The other point I want to make is I have people who are working on Tris. I have no way of knowing whether the use of that fabric will eventually show that they are subject to carcinogenic problems, because of the use of Tris, of working at it at the sewing machine. That may come many years later. But the point is the worker also should have been

protected by the Consumer Product Safety Commission establishing the decision whether Tris was a safe substitute for flammable fabrics of some kind or another.

As I say, I have no statistics on how many jobs have been lost. I am sure some of them have. You have heard, however, that a number of the manufacturers have had credit for so long they have been able to stay open and get credit. They have gone to the Small Business Administration. We have been very disappointed in the way the SBA has handled this problem. We assumed that the Small Business Administration would be eager to help these people stay in business, when they realized they were going to be responsible under the first decision made by the Consumer Product Safety Commission that the manufacturer of the sleepwear was going to have to pay all the money for recalling the Tris-wear that was on the shelves and not use it any further.

So that it seems to me that in that sense you have a problem of a small manufacturer with all of the financial problems he may have, then being held responsible for a recall of everything, concern for: did the chemical concern have any concern; did the fabric company have any concern? In my estimation, if you are going to take it in terms of grade, the garment manufacturer was less responsible of any group in developing the product and producing the product, and should not have been asked to recall and pay for the recall, frankly. This is my feeling about it, because these people are not knowledgeable; they didn't do it because they wanted to be harmful; they were doing it because the Government said they couldn't use certain fabrics. They were trying to comply, and suddenly they have the roof fall in on them by being told they are responsible for every single item that is on the shelves that have to be recalled. We think that is wrong.

And we feel that maybe the Government should look into that. I am not going to say that the chemical companies and the manufacturing of the fabric companies should not be held responsible, but I maintain that in terms of the garment manufacturer, that the indemnification should cover them. That the Consumer Product Safety Commission had a responsibility, that the Commerce Department had a responsibility; that they should have recognized that a flammable fabric act instituted could not immediately be implemented unless you didn't want to make sure that what you were substituting wasn't going to be more harmful.

I hope in my statement that I will try to get to you within the next week, I can tell you how many plants we have manufacturing children's sleepwear, how many workers they employ. I know it is at least 5,000; it may be more than that—how many of them have had financial troubles; how many of them had to apply to the banks for continued credit; how many of them have said to us, we cannot pay our health and welfare payments right now because we are in such a bind; and if you insist, we will have to close our doors.

We have a union that is very sympathetic to the manufacturers because, for the most part, we have had good relations with them, and so we try hard to, within the law, not press them too much. But you can understand that is also a problem as far as we are concerned. If their credit is cut down, if they don't have the money,

if they go bankrupt, while wages are a priority, the health and welfare payments for our people are not a priority, and they go by the board, which means our retirement fund, our major medical fund, are all jeopardized by this kind of thing.

I know it sounds as though I am getting a great ripple effect, but, believe me, I can produce a ripple effect when one plant goes bankrupt or closes its doors. So that you can see our concern with this, and we feel honestly that our people, as taxpayers, should get some protection from the Government. There should be some indemnification that the manufacturers who in very good spirit wanted to comply with the law should not be penalized for complying with something that later turned out to be more dangerous than having flammable fabrics.

Thank you, Mr. Chairman, for the opportunity to present my point of view on behalf of my union.

Mr. MAZZOLI. Thank you very much. I appreciate it. Mr. Chairman, with your indulgence, I have a couple of questions. One is you are a taxpayer and, of course, the workers in your organization who work are taxpayers. Do you feel manipulated or ripped off or exploited if taxpayers' money were to indemnify the industry by reason of this Tris problem?

Ms. DUBROW. No, I really don't. I think our people would understand, and I think most taxpayers have to understand that the way you get effective Government is when they do make a mistake, they have to pay for it the same as anybody else. I commit a crime; if I am caught, I am supposed to pay for it. If I don't pay my taxes, I can be put in jail. So I feel that, on the whole, I doubt very much if the taxpayers would feel they are being put upon if there was indemnification.

Mr. MAZZOLI. Thank you.

Second, you heard the testimony earlier of Congress Watch, that there is some concern as to whether or not proper prudence was being shown by the manufacturers in the sense of their being careless or unmindful of the possible dangers of Tris. What is your personal appraisal as to how prudent they were or lacking in prudence they might have been, and also with respect to the issuance of the ban, how much this side of the ban should they have quit producing, and so forth?

Ms. DUBROW. Well, first of all, I doubt very much that any garment manufacturer that I know would have, if he had had any knowledge of Tris, used the fabric. I think they are smart enough to recognize that if the fabric were dangerous it would be wrong for them to do this, that it could cost them.

I just don't think they have the entre' into finding out what is in chemicals. Most of them have lawyers, but lawyers are not chemists, and I don't think they think about that. I don't think they felt they had to inquire what the fabric was. They were told by the manufacturer that it was flame retardant. That was the only thing they had to be assured of, and they were assured of that, and there is no question that Tris was flame retardent. The fact that it was carcinogenic turned out to be something else again.

So I don't think it was a case of their not being prudent. I think it was a case of their assuming that when the fabric manufacturers

sent the fabric to them they were getting what they had to do according to Government standards.

Second, I don't think they had any notice of the ban. I don't think they were told by the Consumer Product Safety Commission, "We are now testing Tris and therefore you should be very careful," and even if they had told them, what would they use instead? They could not use the cotton; they were told that the regulations would not permit them to use what they are doing now, 100 percent polyester. So, in that sense, they were in a bind; but I don't think any of them, the minute they knew about the ban, continued going on and manufacturing. I cannot say there were not one or two, but I think most of them are fairly decent and they also have children who went through the rashes the same as you did, and so it just seems to me I think they tried to obey the law as quickly as they could.

Mr. MAZZOLI. Thank you vey much.

Mr. Chairman? Excuse me.

Mr. MAZZOLI. The gentleman from Virginia?

Mr. HARRIS. Thank you very much, Mr. Chairman.

I have through the hearings tended to agree with your major point, that the garment industry as such probably had the least amount of responsibility in this whole area. We did have testimony that there is some vertical integration in the industry. I believe Carter Mills is the one that testified that they not only manufacture, cut and sew, but they also go back a ways as far as the total company is concerned. But the question was, who was responsible, and I take it from your testimony you felt the Government can make a mistake here and that the Government shares some responsibility with respect to the situation that the garment industry has been put in; is that correct?

Ms. DUBROW. Yes, I do, absolutely.

Mr. HARRIS. But you don't believe you rule out the possibility that somewhere in that chain, whether it is the manufacturer of the chemical or what have you, there may also be responsibility?

Ms. DUBROW. No, I am not ruling it out. I am being very narrow in my approach, Congressman Harris, in saying I think the Government was wrong because they did not make the tests as quickly as they should have; but I also say if the responsibility is going to be shared, it ought to be with the chemical companies and the textile companies and not by the garment manufacturers.

Mr. HARRIS. Leave my folks alone.

Ms. DUBROW. Well, in a way, yes, we all protect our own, don't we?

Mr. HARRIS. There is nothing wrong with that.

The question that has to be resolved here, though, is to what extent the Government was responsible and, therefore, to what extent indemnification is appropriate and to what extent a supplier was responsible; and that question is not as easily resolved. I think you would agree with that.

Ms. DUBROW. I would; but I think the Senate bill is a pretty good bill in that respect, it seems to me. I think it does take into consideration what the Government's responsibility was along the line.

I think it is a tough question for you to answer, but I think the committee can make the decision of where the responsibility lies by giving absolution to the garment manufacturers who in the long run did not know, did not have any advance knowledge of, what was going on and could not have been responsible as a result.

Mr. HARRIS. One point of the testimony that I did want to test a little bit, though—I wonder what responsibility industry does have. It seems like it may be delegating an awful lot of responsibility to the Government if industry has to wait for the Government to issue a statement which determines whether a chemical is safe or not.

It seems to me industry has some responsibility to determine the safety of a chemical before they start introducing it on the market. You would agree with that, wouldn't you?

Ms. DUBROW. I am not a chemist and I have no knowledge of it, but I would think in that sense maybe the chemical companies have a responsibility of doing some laboratory work, along with the Government; but, Congressman Harris, when the Government takes a responsibility for implementing legislation, which the Congress and the President believe should be established, I think with that goes the responsibility of immediately, when you set up regulation, of being responsible for seeing that those regulations are very carefully promulgated and that investigation is done in depth.

I can see where the chemical company might—should have, perhaps, investigated the carcinogens within Tris. I don't know. I don't know whether they are required to by Government fiat or not; maybe they should be, but I do know when we set up a Consumer Product Safety Commission it was with the purpose of giving that Commission the right to set standards, and in giving them the right to set standards they also had the responsibility of making sure that when they set up those standards they were done within the jurisdiction given to them, that the tests had been made, that there was no, absolutely no question that the substitution was better than the original product. All of that, I think, is part of the business of establishing a commission and giving it a job to do.

Mr. HARRIS. Would you hold the position that the regulatory agency not only has to tell the industry what it should do but also how it should do it?

Ms. DUBROW. I think so. I don't see why not. It seems to me if you have a chemical company that is going to be responsible for producing something that is supposed to be safe and good for people to use, that perhaps the Government should say, "These are the things you ought to do in developing those chemicals, frankly."

The other thing that bothers me a lot is that while we are very concerned here with standards in this country, I know that fabrics come into this country that have not been tested in their own countries, and I am not at all sure that those imported fabrics are not just as dangerous or more dangerous than the fabrics we make here. And one of the things I have always felt is that there ought to be the same kind of labeling of fabrics coming in from other countries as the kind of labeling we demand in this country.

Mr. HARRIS. There are not?

Ms. DUBROW. No.

Mr. HARRIS. I thought there was.

Ms. DUBROW. Well, that is one of the problems. I have been taking that up with the FTC. There is great deceptive labeling going on from abroad, and I think that the standard we put up for our people here, we ought to insist on, must be the same standards for products coming from other countries; but that is another day and another story.

Mr. HARRIS. I think you are right.

Thank you, Mr. Chairman.

Mr. MAZZOLI. Thank you very much.

Mr. Harris reminded me when he was talking about the responsibilities of Government to put their money where their mouth is. I always wondered how the IRS would have the gall to lay claim for taxes against a person whose form was filled out by an IRS agent. It would seem to me that in itself is Government action, and you are relying upon the Government, and the Government turns around and says its agent has made a mistake; and so in a sense there is a need for Government to respond to its own, possibly its own mistakes.

Mr. Chairman?

Mr. DANIELSON. Thank you.

Thank you, Mr. Mazzoli.

You know this is the first time, Ms. Dubrow, you have ever been before a committee on which I have sat, and I want to say it is sort of a red letter day.

Ms. DUBROW. Thank you very much.

Mr. DANIELSON. Now, I know why you are generally known as the most effective lobbyist in Washington.

Ms. DUBROW. Thank you.

Mr. DANIELSON. You know your subject. There is no hard sell, but you don't miss any of the bases, and I think I see you can even slip in a word on an important matter that should come up on another day at another time, and you do it very gracefully. I commend you. If I ever should want to be a lobbyist, I will watch you.

I appreciate your testimony very much and I really don't have any substantive questions; I just want to test out a couple of ideas.

One thing you commented on was the repurchase requirements under our laws. I have never known of them until we started in on this bill. I don't know if you were here this morning, but Mr. Byington, of the Consumer Product Safety Commission, testified——

Ms. DUBROW. No, I was not, unfortunately. I wish I had been.

Mr. DANIELSON. He commented on them, and in fact some testimony yesterday alerted us that this is a statutorily set forth procedure, only certain persons can require a repurchase, et cetera, and Mr. Byington has consented to send us a letter suggesting some changes in that law that would make it more equitable. However, he was in a situation where the factual situation existed and all he can do is invoke the law that applies, and it is not a very satisfactory law, so we will look into the repurchase provisions in the law which are a part of the Hazardous Substances Act.

Now our committee, some people call it a court of last resort; I am more fond of calling it the one just beyond that, we are just this side of St. Peter.

Ms. DUBROW. To me, you are St. Peter.

Mr. DANIELSON. I want you to understand something. Bills come in here when there no longer is any remedy available, nothing under the law, nothing in the courts, nothing anywhere; there is no place else to turn, so they come in here, and for a lawyer at least, it is pretty exciting, because we really have novel problems. But we have a rule of thumb that we try to follow, and that is, we try not to put a burden on the taxpayer to right these wrongs unless the Government either did something which it should not have done, and the people relying upon that misfeasance acted to their detriment, in other words, the Government did something they should not have done, people relied on it, and they got in trouble; or, in the alternative, the Government failed to do something which it should have done, and because of that omission people got in trouble and got hurt.

In this case, whether we have a failure to do something which the Government should have done or the performance of some act which they should not have performed, we have not quite narrowed that down. It may even be a combination, for all I know, but I notice Mr. Harris has very carefully in the last couple of days approached the point of what did the Govenment do that was negligent or careless, where were we at fault?

Let's start at the end of the process, excluding the exportation, because that is the substantive act here. The Government did issue a statutory interpretation in April of 1977 which for practical purposes says no more Tris. Should they have done that? There is some question. A number of witnesses have testified, even today, that they are not so sure that there is any compelling indication of carcenogenic qualities in Tris. Maybe it should not have been done at all. In that event, if the Government cut off the sale of this merchandise when there was no reason to do it, the Government would have done something which it should not have done, and people have been hurt.

Of course, you could not sell the stuff now if you tried, because it has a bad name.

Ms. DUBROW. That is right.

Mr. DANIELSON. And there may be merit in that.

We can go back a little farther, a year earlier. The Government did receive some indications that there might be some reason to suspect Tris; they did not stop it then; they didn't even stop it prospectively, saying, "Well, sell the merchandise you have but you can't add any more Tris for a while", which they could have done.

Ms. DUBROW. Yes; right.

Mr. DANIELSON. And the marketplace could have absorbed the stuff that was on the shelves and in process and nobody really would have been hurt, except you would have to find a new way to make the goods less flammable. In fact, there is some indication that a couple of years earlier it came to the Government's attention that the National Cancer Institute was testing Tris, along with several hundred other products, to find out its qualities, good and bad.

Now, I suppose if you would be going on the basis of absolute purity, that would be the first time there was any kind of an indication. Should they have done something then, and failed to do

it? Is that an omission? I am not satisfied in my mind, but it is helping me to go over these points.

Then you can back way up to the beginning. We got the standards on nonflammability. The manufacturers have told us that when those standards came out in 1971 there was no way that they could meet the standards without adding chemicals, and Tris seemed to be the commonly acceptable chemical in the trade for imparting a quality of nonflammability to fabrics, and it still can be used in draperies, et cetera, where you don't have a close skin contact.

Maybe the Department of Commerce, setting forth the nonflammability standards, went too far; maybe this was an act the Government should not have performed, requiring flammability standards which were beyond the state of the art. "We just could not do it; we didn't know how." It is like imposing an edict that you have to have a cure for cancer tomorrow. Well, we would love to, but we just don't have it; that's all, and we did not have a way of putting out fabrics that were nonflammable within those standards, except by adding Tris.

Now they didn't say you must add Tris; but they said it must be nonflammable to a certain degree, and the only way to do it was to put in Tris.

Running over this history, there are two or three places where the Government could have—it could be considered to have gone too far in either requiring that which was impossible at the time, or in banning something which maybe should not have been banned, or in not banning it when it should have, or in not issuing an order that—"Sell what you have got, but don't add any more."

And there is a good indication.

In 1974 the Department of Commerce issued a second set of instructions, sizes 7 to 14, you could have a more relaxed standard of flammability, but they didn't change the sizes zero to six, which they could have done at the same time.

Now the manufacturers have told us that when the second standard came in for the larger sizes, they were able to meet the flammability standards without adding Tris, and the industry was starting to move away from it; and, in fact, if the Department of Commerce had just applied the new regulation to all sizes, across the board, they probably all would have moved away before 1976, so we wouldn't have had the 1977 disaster that took place.

So we have a lot of places to evaluate here.

I repeat, none of these is a question. I am just trying to articulate something.

Ms. DUBROW. Well, I think it is an interesting review, and I think what it does, Mr. Chairman, is raise exactly the questions that I would want to raise in my testimony, which is, where is the responsibility and how deep is the responsibility, and a caution, that when we pass laws or set up commissions, that perhaps we have to be able to indicate to them that they either don't rush into setting up regulations without good analysis, or, doing that, being protective, and in banning Tris I must say for myself I would rather be on the side of the angels and say if there was any question that there was a carcinogenic element in it, that should

have been banned. I would feel that way about it, very honestly, for the sake of the children.

Mr. DANIELSON. Ms. Dubrow, I am not going to argue against you on that, because that is the way I feel, too; but I have to admit, fair minds can differ.

Ms. DUBROW. Absolutely.

Mr. DANIELSON. There are those who could argue the other way and, frankly, all you would do would be to have a standoff.

Ms. DUBROW. Right; exactly.

Mr. DANIELSON. That opens another point. I think it is important that we think about these things.

In the last 8 or 10 years Government has more and more gone along with consensus and acutely articulated public pressures to make the world supersafe, squeakie clean—I mean, nothing can be permitted to go wrong. I don't know for sure how far Government can go that way.

Let's think of a subject which would not cause cancer. You know, we have a tremendous problem of sewage disposal in this country, and we are trying to make all waters swimmable and drinkable. This is a fact.

Ms. DUBROW. Right.

Mr. DANIELSON. Under the Clean Water Act. I just don't know how far you can go. I don't know when the law of diminishing returns set in to the point where the economy cannot afford it anymore. I come from the Los Angeles area. We give extensive treatment to our sewage sludge; it is really a pretty elaborate and very expensive process. I know; I have gone all the way through it—that is, from the outside. But after separating at the last stage, after separating all of the solids, we have what I call an outfall, a huge metal pipe that goes 7 miles out into the ocean, with cross-pipes every so often. It is well engineered, and so that effluent eventually is dispersed over an enormous area, deep underwater, and it does not pose a problem on our beaches, et cetera, yet apparently this is not going to be deemed clean enough; it has improved fishing immeasurably; it is not going to be considered good enough, but I don't know how we are going to do it any better.

Hawaii has the same problem. I don't know where you are going to put it; but I wonder sometimes if reclamation and purification cannot eventually reach a point where, really, it is no longer cost effective, the benefit no longer reaches, and I don't know where we are going to go.

Now, demanding the nonflammability standard that was demanded was something beyond the reach of the art, at least without adding Tris. Maybe we should not set these goals quite that high at the inception; maybe we should allow time to grow into them as we learn.

Someone yesterday used the term of "forced technology", describing what is done when we set our regulations so high that we compel those who use the technology to develop new technologies in order to meet the standard. Sometimes it just is not going to work, and we have to remember that.

Now how far should we go? You have mentioned that the people should have been protected. How far do we go?

You know there are hundreds of thousands of substances that affect consumers and those who work with them. Are we going to make a total test of the carcinogenic qualities of every substance known to man, and those not yet known? I don't know if we can do it. I don't know if we are going to have them. Most of them are going to be obsolete by the time we get to them.

I don't think we can run an economy if we assume everything we use is carcinogenic. You know, I have not tested this formica yet, and we all use it. We use plastic spoons, you know, in the cafeteria. I don't know. Yogurt comes in a plastic container now; maybe that has something bad in it, and we are not going to know until 25 years from now when somebody comes up with a bad stomach ache and, golly, we find out what happened.

I just wonder if humanity really has a right to be protected against the unpredictable. I think maybe we push too hard on some of these regulations. Once we find something is very bad, then, yes, let's get on the side of the angels and do something about it. I can think of two good analogies. Nobody knew until a few years ago that asbestos was carcinogenic. It has been used for a long time. It is a magnificent insulator, fireproof, not just retardant, a magnificent product to be used in our industry; and now we find that anybody who works in asbestos gradually inhales enough of these microscopic fibers so that after 25, 30, 35, 40 years he may have cancer develop. But nobody knew it before.

Ms. DUBROW. Well, five years ago we were told by the head of Mt. Sinai—Dr. Selmakoff, I think it is—that our people working with asbestos material would be subject to cancer; and we had to go to the Government and get a regulation that said they would not work on those for that reason.

Mr. DANIELSON. And I don't quarrel with that at all. All I am trying to point out is, you cannot assess blame to somebody who used asbestos when he had no reason to believe there was any problem.

And I do know that the Food and Drug Administration, when they started working with Jim Delaney's amendment, had to set up this tremendously huge list of ingredients they called the Gras list, generally recognized as safe; it has been interpreted as a certification that the items are safe; but it is not. They started off, as I recall, with salt and pepper, and I don't know how far they have gone, but they have thousands of ingredients that are generally recognized as safe and you can use them; and yet time is going to show some of them are not safe, and somebody will say, "Well, you said we can use that." I don't think we can go that far.

My last little point is, I know, we all know, that there are generally between 400,000 and 500,000 people in the United States who are suffering illnesses that are brought on by the smoking of cigarettes. Many of them have resulted in cancer. Happily, the public knows that pretty well now, and it is sort of a voluntary assumption of risk, when you smoke. But I anticipate that someday somebody is going to bring a lawsuit against the Government because the Government does spend about $75 million a year subsidizing the tobacco industry, while the Department of Health, Education and Welfare spends $14 million a year discouraging the use of cigarettes.

But you have had my afternoon lecture.

Ms. DUBROW. Thank you very much.

Mr. MAZZOLI. Thank you, Mr. Chairman.

Thank you, Ms. Dubrow; we appreciate very much your being here.

Mr. MAZZOLI. The committee would be very pleased to hear from a panel which we will call, of Mr. Byron Williams of Swanknit, Inc., of Cohoes, N.Y.; Mr. Gary Crawford, Werthan Industries, Nashville, Tenn.; Mr. Anthony Q. Devereux, assistant secretary, Oneita Knitting Mills, Andrews, S.C.

TESTIMONY OF BYRON WILLIAMS, SWANKNIT, INC., COHOES, N.Y.; GARY CRAWFORD, PRESIDENT, WERTHAN INDUSTRIES, NASHVILLE, TENN.; AND ANTHONY Q. DEVEREUX, ASSISTANT SECRETARY, ONEITA KNITTING MILLS, ANDREWS, S.C.

Mr. MAZZOLI. Gentlemen, your interests may be not exactly identical, but we would like to hear from all of you anyway. Maybe we will start with the gentleman in the middle and go to this gentleman down here. And I understand your statements are made a part of the record; and we are now at 2 o'clock, and if there were some way to perhaps summarize, to get to the heart of the statement—you have been in the room all day and you know some of the questions the committee has asked. Welcome.

Mr. WILLIAMS. Mr. Chairman and members of the committee, I appreciate the opportunity to appear before you and tell you the problems created by the Tris ban.

Also, we want to thank our congressman, Samuel Stratton, for the personal interest he has taken in our behalf.

My name is Byron J. Williams, and I am president of Swanknit, Inc., Cohoes, N.Y. We are manufacturers of infants' knit underwear and have approximately 150 employees, making us the third largest employer in the city.

I am sure by now you have had sufficient testimony on the background of why manufacturers were making garments containing Tris. Therefore, I will confine my testimony mainly to the impact the Tris ban has had on Swanknit. Before doing so, I do want to go on record that we have always tried to comply promptly with all governments regulations.

We have read reports that manufacturers have themselves to blame because they had plenty of time to move away from Tris-treated fabrics before the ban. This is simply not true in our case because we did take steps to change our fabric as soon as we learned the story behind Tris.

Before test results were published and before the ban, we had worked out a plan with our two major customers, Wards and Sears, to change to another fabric for their fall 1978 catalog. Also, we proceeded immediately with plans to eliminate Tris from our line.

In my testimony before the Senate Judiciary Committee, I estimated a potential loss of $450,000. Now that all returns have been received, we have an actual figure which shows our estimate was quite accurate. The returns from Sears amount to $60,000 and $120,000 from Wards with another $76,000 from the balance of our customers. This gives us a total of $256,000 to pay out for the recall.

Our Tris inventory at the mill at the time of the ban amounted to $201,000 so we are now holding a Tris inventory of $457,000. Since our net worth at the time of the ban was $600,00, it is not hard to understand that we had suffered a near fatal blow.

Our first inclination was to throw in the towel but then we considered the fact that 150 people would be out of work, many of whom had been with us for over twenty years. This, plus the fact we had spent 32 years in building the business, gave us the determination to give it a try. Our mayor also pointed out that if we closed, the unemployment rate for Cohoes would jump from 8.2 to 10.1. Also, because of the age of the employees and the fact that most all textile firms have moved out of the area, it would be extremely difficult for them to find new employment.

Our first step was to contact Sears and Wards to see if they would agree not to deduct returns from our receivables. They both agreed to go along on this request, thus giving us time to try and raise the money needed to stay in business.

In the meantime, manufacturers suffering from losses due to the Tris ban were declared eligible for a disaster loan from the Small Business Administration. Therefore, our next step was to file an application for a loan to cover our Tris losses. The application was filed on May 20, 1977 and, believe it or not, the SBA was still shuffling our request from office to office 7 months later.

Finally, we learned that our application had reached Washington so I called our congressman, Sam Stratton, to see if he could get us an answer. Shortly thereafter, we received approval of our loan but the terms were so harsh that it would be most difficult to stay in business.

Therefore, on January 26, 1978, we wrote the Small Business Administration, withdrawing our loan application.

I do not want to burden you or take your time to explain all the details connected with this loan application other than to say we spent over $3,000 in accounting fees plus many phone calls to supply the Small Business Administration with detailed information which they requested.

We were now back where we started with Sears and Wards growing impatient about waiting so long for repayment of their returns.

Our next move was to contact our bank to find out if they would consider increasing our current long-term loan of $200,000 to $400,000 providing we could get Sears and Wards to agree to an extended payout for their returns. They agreed to give us this loan so we presented a plan to Sears calling for a 2-year payout and Wards for a 3-year payout. They both accepted our plan providing we would pay them 9 percent interest.

While paying off a bank loan and meeting payments to Sears and Wards puts a tremendous burden on us, if Sears, Wards and our bank had not gone along with us, we could not have survived. The one big worry we have with this plan is that while we are able to meet our payments now, it is because business has been extremely good.

Should business slump before these obligations are paid off, we could be in serious trouble. While we have had exceptional coopera-

tion from Sears, Wards and our bank, we do want you to know of the tremendous cooperation on the part of our employees.

We have a contract with the International Ladies Garment Union which called for a 5 percent wage increase May 1, 1977. Because of the Tris situation, we asked them to postpone the wage increase until January 1, 1978, which they agreed to do.

Our old contract expired May 1, 1978, at which time a new contract had to be agreed upon. Again we explained our financial difficulties and, while it is customary to grant some wage increases and additional fringe benefits when negotiating a new contract, the employees agreed to drop all demands until January 1979.

The Union also delayed asking for much needed increases to their health and welfare fund. When one considers the cost of living increases over the past year, our employees are making a real sacrifice. Our nonunion employees have not had a raise for over a year and I have personally cut my salary in half so everyone is doing their share.

We now turn to the problem of disposing of our Tris inventory. We were considering trying to export our finished stock and, in fact, did sample out our line to several brokers. However, the price offered was so low that it would scarcely cover the cost of preparing the goods for shipment.

However, when you consider the fact we are paying storage charges for stock we will never be able to use, perhaps any price is a good price.

Also, by exporting we would solve the disposal problem. While exporting would solve some of our problems, we have decided not to export any of our inventory at least until we find out what type of evidence the Court of Claims might require in the event we do get compensation for our losses.

We were uncertain about the disposal method until we received a recent letter from the Consumer Product Safety Commission, copy of which I am attaching to my testimony. We are shocked at the method of disposal as outlined in this letter.

We have about 25,000 dozen garments for disposal. The cost of shipping this quantity, plus our piece goods inventory, added to the charge at the disposal site, will add substantially to our losses.

I hope my testimony has given you a little better understanding of the great damage done not only to Swanknit but to all small manufacturers because of the method the CPSC followed in banning Tris-treated garments.

If we had been negligent or knowingly used a hazardous product, then we would only have ourselves to blame; however, when we were not only following regulations mandated by Government, it does not seem fair or just to force the manufacturer to assume the entire burden of the Tris ban.

Thank you, gentlemen.

[The letter follows:]

U.S. CONSUMER PRODUCT SAFETY COMMISSION,
Washington, D.C., June 8, 1978.

Mr. B. J. WILLIAMS, SR.
Swanknit, Inc.,
Cohoes, N.Y.

Dear MR. WILLIAMS: This is in response to your letter of May 11, 1978, to Chairman Byington regarding the disposal of TRIS treated fabric and/or garments.

As stated in the Commission's environmental impact statement, the two most acceptable disposal methods for TRIS treated fibers, yarns, fabrics and/or garments are secured landfill and hazardous waste incineration.

A secured landfill is basically a land disposal site that is completely contained and does not allow percolation of water and fluids to groundwater tables. In addition, any runoff from secured landfills is collected and given proper treatment. Other land disposal options, including open dumping and sanitary landfilling, may not be environmentally acceptable for TRIS product disposal because they would allow passage of contaminated water through the landfill site to groundwater tables. Secured landfill facilities located in New York include: (1) Chem-Trol, P.O. Box 200, 1550 Balner Road, Model City, N.Y. 14107; 716-754-8231. (2) NEWCO Chemical Wastes, Inc., 4626 Royal Avenue, Niagara Falls, N.Y. 14303; 716-285-6944. Contact: Mr. Shoester.

TRIS containing products may also be burned in incinerators primarily constructed for handling potentially hazardous wastes. These incinerators are normally lined with special firebrick and are equipped with stack gas cleaning apparatus capable of scrubbing out hydrogen bromide and phosphoric acid gases which are formed in the combustion of TRIS. Open burning and incineration in most types of small commercial furnaces and building incinerators are not considered acceptable disposal practices.

The state of New York does not have any approved hazardous waste incineration facilities; however, New Jersey has two facilities which would be capable of incinerating TRIS containing products. These facilities are: (1) Rollins Environmental Service, Bridgeport, N.J.; 609-467-3100. Contact: Mr. H. Smith. (2) Chemical Control Corp., 25 South Front Street, Elizabeth, N.J.; 201-351-5460. Contact: Mr. Carricino.

We are currently not in a position to respond to your question regarding disposal prior to compensation under the indemnification bill pending in Congress in that there are currently several versions of the bill. In addition, unless specified in the indemnification bill, the type of evidence, i.e. certified audit or actual inventory, accepted by a particular Court of Claims would be subject to the ruling of that court.

We hope the above information is helpful.

Sincerely,

H. ELIZABETH JONES.

Mr. MAZZOLI. Thank you very much, Mr. Williams.

Mr. Crawford.

Mr. CRAWFORD. Mr. Chairman, my name is Gary Crawford. I am a member of the law firm of Trabue, Sturdivant & De Witt in Nashville, Tenn., and am here representing Werthan Industries, Inc. I will try to be brief and not go over the ground we have covered before. There are some new points that should be made to you.

Werthan Industries is what is known in the trade as a "converter and finisher." What that means is that Werthan purchases unprinted fabric from large textile mills and then resells the fabric to the manufacturers after bleaching the fabric, dyeing it, and printing it with a pattern. Werthan is a relatively small, family-owned and family-run business located in Nashville.

In the Government's efforts to overcome flammability problems, Werthan too was one of those businesses that got burned. I am afraid Werthan and the other converters in the industry may be inadvertently burned again if, in passing indemnity legislation, the Congress does not recognize where converters fit in the industry picture and does not draw the legislation accordingly.

We strongly support S. 1503, but do have certain reservations about how it treats converts. I will be more specific about those reservations in just a moment, but first let me describe in a little more detail the place that Werthan has had in the industry. Attached to my statement is a chart that graphically illustrates the role that Werthan played in the distribution of tris-treated fabric

intended for children's sleepwear. I should point out this illustration applies only to woven fabric, as opposed to knit fabric, where the chain of distribution is slightly different.

You will see that the first step in this chain of distribution is the manufacture of tris. The second step is emulsifying of tris, in order to get it into a state suitable for use in children's wearing apparel. The third step is the manufacture of synthetic fiber by a large fiber producer. It is this step at which tris was added to the textile product in the case of all the tris-treated cloth that eventually came into Werthan's hands.

The fourth step is the weaving of the synthetic fiber by a large textile mill into unprinted cloth. The fifth step is the "finishing" of the cloth, which means the dyeing of the cloth and the printing of the patterns onto the cloth.

The sixth step is the manufacture of the sleepwear from the fabric by the cutter and sewer. The seventh and final step is the sale of the finished garment by the retailer. Some companies engage in only one of these steps. Other companies have integrated operations in which they perform two or even more of these steps.

A converter is the name given to those companies that arrange to get the cloth from step four, the weaving through step five, the printing and then to the garment manufacturer. The converter buys the unprinted cloth, either prints it himself, like Werthan, in which case he is both a converter and a finisher or contracts with some other party to print the cloth, which the converter then sells to the garment manufacturer.

As a converter and finisher, Werthan, and the other converters in this industry, did not add Tris to the fabric. In fact, Werthan's textile sales personnel did not even know that the cloth being sold for use in children's sleepwear by Werthan had tris in it until after the Environmental Defense Fund filed its first petition with the Consumer Product Safety Commission in early 1976.

The legislation resulting from this hearing should recognize the distinction between converters and the textile mills. Converters are simply not in the same situation as the mills and should bear only the same responsibility and duties under the legislation as the pajama manufacturers, since converters are much closer to them in terms of size, nonresponsibility for the presence of tris in the product, and location in the chain of production. In addition, converters often will order unprinted fabric once they have received a purchase order themselves from a pajama manufacturer.

I emphasize this because, while we strongly support S.1503 in principle, we do have a concern about how this bill treats converters. Specifically we are concerned about how section (c)(2) appears to lump converters indiscriminately with the textile mills for purposes of determining the measure of damages when, in fact, we are much closer in the scheme of things to the cutters and sewers.

The measure of damages outlined in paragraphs (c)(1) and (c)(2) of S. 1503 are significantly different. As presently written, there is an ambiguity about whether converters are covered by (c)(1) or (c)(2). It is certainly arguable, based merely on the language of (c)(2), that (c)(2) covers converters along with the large textile mills for which (c)(2) was really written.

I would suggest that the Senate in its wisdom actually meant to place converters in the category of (c)(1) since that subsection refers to "processors" of children's sleepwear, which we think is a rather inartful reference to converters.

There really is no such thing however, as a "processor of children's sleepwear." The converters, though, are the processors of the fabric for the children's sleepwear manufacturers, and we should be included in (c)(1) along with the cutters and sewers whom we resemble.

Converters would then be able to recover the transportation costs which are considerable in our segment of the industry. We would also be able to recover for piece goods that still might be held in the inventory of the pajama manufacturers by prior arrangement with us, but which should be considered the loss of the converter.

Most importantly, converters would be able to recover their losses on fabric which they have since been able to sell in mitigation of damages for legitimate uses other than in children's sleepwear.

I do not refer to fabrics sold in export. Werthan has not sold a yard of fabric in export and has not sold a yard of fabric for children's sleepwear since it stopped doing so months prior to the CPSC's April 8, 1977, ban.

Uncut fabric, unlike the finished garment, can be diverted to uses other than children's sleepwear although still at a substantial economic loss. This is especially true for fabric still in its unprinted state which was the condition of most of Werthan's remaining inventory of tris-treated fabric.

I am talking about 3 million yards of such fabric. Such cloth is not already printed with the juvenile patterns referred to yesterday which would limit the uses of the fabric.

Converters will not be able to recover on this fabric if converters are considered to be governed by (c)(2). Since there is an explicit requirement in (c)(2) that the mills covered thereby can recover only on fabric held by them at the time of enactment of this act. Converters should be expressly covered by the measure of damages spelled out in paragraph (c)(1).

Mitigation of damages, in a moral, legal, and responsible fashion, is the first principle of American law. Werthan had an absolute common law duty to mitigate damages, and when it had a business opportunity to do so in a legal and responsible way, we advised the company that it had an affirmative obligation to take advantage of that opportunity.

It should not now be punished for mitigating damages in a legitimate way by being excluded from coverage under the act for the fabric which it sold.

I might add that if Werthan had not acted to mitigate its damages, as required by the law, any assignment of its common law actions against others in the industry by it to the Government, which the Justice Department indicated yesterday ought to be a prerequisite for recovery under the act, would be of limited utility to the Government because the courts would have deducted from any recovery by the Government the sums which could have been recovered by Werthan in a mitigation sale.

Allowing converters to mitigate their damages by selling fabric for legitimate uses other than children's sleepwear is advantageous to the Government because ultimately it saves the Government money which the Government would otherwise have to pay out in the form of indemnity.

It also potentially allows the Government greater recovery against other parties should the Government pursue the common law claims that have been assigned to it.

We would be happy to submit to the subcommittee draft language accomplishing these results.

I would be happy to respond to any questions later.

I did want to make two very quick comments in addition to the written text.

One of those comments addresses itself to the recurring search by this committee for evidence of Government culpability that would justify this legislation. I think the committee should not look for one smoking gun of culpability on the part of the Government. I think instead of that what we have is a whole series of inept regulatory actions that, taken together, have created the problem and justify this legislation.

Some of that has been reviewed. Let me try to put it in focus all together.

The first problem we had is the Commerce Department's fire retardance standards, which everyone apparently acknowledges, forced the technology and caused recourse to chemicals that everybody knew we knew very little about.

Second, once the Ames test data was in some years later and the EDF filed its first petition with the Consumer Product Safety Commission, a long time went by in which there was great uncertainty about what people should do with tris-treated goods.

That first petition asked for labeling which merely said, "Wash three times before using," as if it was still safe to use the product.

In fact, there were signals, gentlemen, from the Commission, that this was a very significant act, and the fact that this product wasn't sought to be banned was an indication that it wasn't quite as hazardous as other products, and there were signals from the Commission that they were quite uncertain about the issue or of the hazardous nature of Tris.

However, because of a lot of delay and after NCI data came in, we got a very quick response to ban the product, so quick that the Commission did not have time to give anybody proper due process, to cross-examine witnesses or have any kind of adversary proceeding to determine the hazardous nature of the product.

So nobody got due process so we could really find out about Tris.

Then the Commission misdefined "manufacture" within the meaning of the Hazardous Substance Act for the purpose of repurchase and put the financial loss on the small garments and they went to Judge Hart's court here in the District of Columbia, and he ordered them to expand that definition. Then there was the lawsuit because of the lack of due process, and everything that we had accomplished in Judge Hart's court was undone.

Then people wanted to know what we export. "What do you do with this stuff?"

The Commission first said it is OK to export. Some people exported and then they said it wasn't OK to export.

Time and time again people in the industry have sought guidance in good faith, wanting to do what was right, and to ask the Commission what we should do, and time and time again we got no answers or conflicting answers.

I will give an example. Last fall the president of Northern Industry wrote the Commission asking whether the Commission regarded the use of Tris-treated fabrics for curtains to be safe or unsafe. I think there was some suggestion yesterday maybe that was a use for the fabric since it did not come in close contact with humans and thus be susceptible to skin absorption.

To this date we haven't gotten a reply to that letter.

I think what we have seen is a pattern of ineptness that, added up, justifies this legislation.

I appreciate very much, Mr. Chairman, the opportunity to appear before you this morning.

Mr. MAZZOLI. Thank you very much, Mr. Crawford.

Mr. Devereux.

Mr. DEVEREUX. Thank you, Mr. Chairman; and thank you all for the opportunity to speak briefly before the committee. I will try to go over my testimony and skip parts of it.

This presentation is being made on behalf of Oneita Knitting Mills—hereinafter called Oneita—as a member, and representing other members, of National Knitwear Manufacturers Association, which is the central trade association for the manufacturers of knit underwear, sleepwear, sportshirts, sweat clothes, and allied products.

Oneita manufactures, together with several other knit product lines, a line of infants' wear which includes, and the first items are most important, pullover shirts, snapside shirts, children's vests, gowns, kimonos, sacques, sacque sets, and some other items. When the children sleepwear standards became manadatory in July 1972, for ages 0 to 6X, Oneita dropped its 50 percent polyester-50 percent cotton program and was ready to sell its customers a number of garments which were gowns, kimonos, sacques, and sacque sets made from fabric of SEF yarn which passed the very—and, in our opinion, unnecesarily stringent—requirements of FF3-71.

Because we could not obtain SEF yarn in sufficient quantities to supply our customers' requirements and because of difficulties we experienced in dyeing SEF fabric, we sampled Kohjun yarn and switched our fabric from SEF to Kohjun yarn. Fabric from Kohjun yarn dyed well, but after the first 6 or 8 months the yarn knit terribly, causing frequent yarn holes from matted yarn. Not only did the sewing plant—Porter Mills—in Cullman, Ala., experience high cloth losses due to these yarn holes, but also the knitters of this fabric could hardly keep the flatknit knitting machines running due to the frequency of these yarn holes and cutouts caused by broken yarn.

In the fall of 1974 our research and development director was approached by salesmen and technical people at Celanse Fiber Marketing Co. to consider making our children's sleepwear from 50 percent Arnel triacetate-50 percent Fortrel polyester. The yarn price of 50 percent Arnel-50 percent Fortrel polyester yarn was

substantially cheaper than the Kohjun yarn which we had been buying; the difference by one comparison was 42 cents per pound or a price of $1.21 versus $1.63.

Thus it appears Oneita was compelled by market conditions, cheaper yarn price and competition of other manufacturers, and by reason of the extreme difficulty in knitting the Kohjun yarn and unavailability of SEF yarn, to change its program to an Arnel/ Fortrel yarn.

We did not know at that time that the basic flame-retardant chemical for the fiber was Tris.

The Arnel-Fortrel polyester program seemed to be a successful one, at least until later tumorogenic risks were alleged. Tris was a very efficient flame-retardant chemical; fabric batches and garment lots passed FR tests with ease, with one or two exceptions. From conversations with managers and technical people of other sleepwear manufacturers, it appears that Tris was the cheapest, yet most efficient, flame-retardant chemical for the textile industry and manufacturers of children's sleepwear so far as topical treatments are concerned.

The Consumer Products Safety Commission undertook and proceeded upon an ex parte investigation of possible carcinogenic or oncogenic risks of children wearing sleepwear treated with the flame-retardant chemical Tris.

It failed to follow the procedure of the Food, Drug and Cosmetic Act to provide for hearings with proper notice at which the evidence of the CPSC and its staff could be set forth and contrary evidence could be presented by the textile industry, manufacturers of children's sleepwear, and various trade associations.

Interested environmental interest groups such as the Environmental Defense Fund and other interested parties could have offered any evidence they had in support of, or against, a proposed ban of Tris-treated children's sleepwear.

It seems to me unprecedented, and it is unlawful even if there is some precedent, for a governmental agency to declare a product a banned, hazardous substance without going through the procedures set forth by Congress in the Federal Food, Drug and Cosmetic Act.

The constitutional rights of the children's sleepwear manufacturers and textile industry generally were trampled upon roughshod, so to speak, by the Commission's failure to follow its own procedures. Under the due process clause of the fifth amendment of the U.S. Constitution, persons should not be deprived of property without due process of law.

The manner by which the Commission gathered its evidence and conducted its investigation should excite the sympathy of this subcommittee.

The whole investigation was done with many ex parte communications with EDF and certain members of the scientific community. Oneita and industry representatives were not invited to be present at many important meetings between EDF and CPSC and its staff. This type of ex parte communication was, apparently, frequently without a written record and was highly improper.

In reading through the Tris ban file at the CPSC office on 18th Street NW., from February 1976 to June 15, 1977, I noted only one or two written memos or summaries of important telephone con-

versations, and there must have been over fivescore or 100 important telephone conversations that influenced the thinking of the CPSC staff and the Commissioners themselves.

It was extremely difficult for manufacturers of children's sleepwear, NKMA, or the textile industry generally, to introduce ideas into the CPSC investigative process because we did not have available or know the basic information which was the basis for its Tris ban.

Our company never dreamed a Tris ban would be put into effect without hearings being held, although we speculated that some kind of ban might be imposed. We thought in the first quarter of 1977 that by the time hearings were held we would be finished with sales of Tris-treated children's sleepwear and we would be safely into our new flame-retardant program. We had started in a new program in January 1977. We still had not cleared out our stock of inventory in the Tris-treated sleepwear.

The scientific data upon which the Tris ban was based involved many areas of scientific knowledge, such as pharmacology, toxicology, the field of dosage for animal feeding tests, ideas in the field of carcinogenesis, microbiology, Ames test, ideas and knowledge in the area of dermal exposure and absorption and textile technology.

Frankly, the only area my company had any expertise in was the last category. Most children's sleepwear manufacturers like Oneita had no staff capable of comprehending these subjects. Anyway, the reference documents were not generally made available until the CPSC declared Tris-treated children's sleepwear to be a banned hazardous substance effective April 8, 1977.

Had the CPSC given written notice, held hearings, studied the data and views submitted at the hearings, had a written record, made written findings of fact, and promulgated an order with a 90-day effective date, the time period could have been 6, 8 months, by which time sleepwear manufacturers would have changed over to other FR fibers.

As the textile industry and children's sleepwear manufacturers were discontinuing manufacture of Tris-treated children's sleepwear in the spring of 1977 and a few manufacturers only would have offered such merchandise in the fall of 1977, most of this sleepwear would have been off the market by the end of 1977.

The FDA in the case of red dye No. 2 and the saccharin ban has followed proper procedures before banning these products because of carcinogenic or oncogenic risk, and this grace period has allowed manufacturers to switch to other products.

Mr. MAZZOLI. Oncogenic means what?

Mr. DEVEREUX. It means causing tumors. Some become cancerous and some don't; that is the reason for the distinction.

The CPSC, however, was under pressure from a suit of the Environmental Defense Fund, filed in Federal district court on March 24, 1977, to compel the CPSC to fulfill its statutory obligations and declare children's Tris-treated sleepwear and also Tris-treated adult apparel, a banned, hazardous substance without first proceeding along with its procedural requirements of rulemaking.

On April 4, 1977, Congressman Rosenthal's Subcommittee on Commerce, Consumer and Monetary Affairs started holding hear-

ings on why the CPSC had not already placed an immediate ban, without rulemaking, on Tris-treated children's sleepwear.

Subject to the pressures of EDF's lawsuit and Rosenthal's and Robert Drinan's insistance on an immediate ban without rulemaking, the CPSC failed to follow the rulemaking required by statute and by the due process clause of the fifth amendment, and on April 7, 1977, voted to declare Tris-treated children's sleepwear a banned, hazardous substance effective April 8, 1977.

I cannot pass over in the CPSC's ban statement of April 8, 1977, without noting the Commission's apparent assumption that all tumors are malignant cancers. This is particularly surprising in view of Dr. Albert F. Esch's memo to Michael A. Brown, both of the CPSC, dated February 15, 1977, defining "carcenogenic", among other things. Thus the Bureau of Biomedical Science had developed an oncogenic risk assesment of 180 tumors not cancers per million population. Also, the NCI rat- and mouse- feeding studies showed the incidence of tumors not malignant cancers.

Oneita's loss, currently calculated at $325,000, was due primarily to returns from our department store customers.

Oneita was so chagrined by its loss and by having its expectancies upset by the CPSC's hasty promulgation of the Tris ban without hearings, after proper notice, that we employed two renowned toxicologists, Dr. Joseph Borzelleca and Dr. K. K. Kimura, to give us an overview opinion on the scientific basis for the Tris ban.

We also retained a noted statistician, Theodore W. Horner, to perform an oncological risk evaluation of its Arnel triacetate-Fortrel polyester fabric.

This investigation indicated, among other things, the CPSC investigation in the area of skin contact with fabric, exposure to garments and dermal exposure, and absorption through mouthing was incomplete or incorrect.

Another weakness of the Tris investigation is that the Commission's staff did not build an oncogenic risk model on Arnel triacetate-Fortrel polyester, where the surface Tris level is estimated to be from 180 to 206 times less than the average surface Tris level in their model, 16,500 parts per million.

Professor Horner's oncogenic risk assessment currently shows an oncogenic risk to children wearing Oneita's triacetate/polyester fabric at around five tumors per 100,000 humans. This is a virtually safe level with reference to the benefit gained in saving infants from burn deaths and burn injuries of a far greater number.

Oneita plans to file an administrative claim with the CPSC in preparation for a suit against the United States for its damages for losses due to the Tris ban. This suit has the purpose of seeking reimbursement of Oneita's Tris losses in the event H.R. 7138 does not pass and also to give the company a measure of product liability protection in any event.

In conclusion, we strongly urge this subcommittee to approve the bill the Senate passed, S. 1503. This bill may not be perfect but it gives substantial equity to the children's sleepwear manufacturers and the textile mills, with certain limitations. It may not be possible to give everybody recompense for the losses they have suffered, but the gigantic loss will be borne by the children's sleepwear manufacturers and we think this is a very appropriate remedy.

Mr. MAZZOLI. Thank you, Mr. Devereux.

Mr. Chairman, our colleague, Mr. Harris, has an immensely important meeting he has got to attend at 2:30, so with your indulgence do you think we can let him ask questions now?

Mr. HARRIS. I have one question, Mr. Chairman.

I would direct it to Mr. Crawford.

I understand that Werthan has instituted an action against Celanese and others with respect to this. It is your view that there is liability on the part of your suppliers?

Did Celanese supply you with the Tris fabric?

Mr. CRAWFORD. Celanese put the Tris in synthetic fibers and sold the fibers to Dan River, which wove the fabric with the fibers and they sold it to us, and so they are one step removed from us in the chain of distribution.

While we are fairly early into that lawsuit, in the discovery stage and the jury is still out on that question frankly.

Mr. HARRIS. You say this figuratively, you are still in discovery, you have not gone to the jury yet?

Mr. CRAWFORD. No, we are not at trial by any means. We are in the early discovery stage. I would say in response to the citing of that case as being remedy which shows this legislation is not needed that we are the only business in the 100 garment manufacturers, and I don't know how many converters there are affected by this governmental activity, that has brought a common law action, and I think the general thinking is that it's not a very good remedy.

It is going to be enormously expensive to try this case. We have told our client they better be ready to pay $250,000 in legal fees to bring this thing to fruition, and there are people in the industry who absolutely could not begin doing that.

It's very difficult for Werthan. I think it's an attractive possibility to assign these claims to the Government and let the Government take on people that should have tested the product. My point is people are concerned about what the effect would be on the incentive of business to try to be saved by legislation like this.

If businesses know the price of indemnity is going to be turning over common law claims to the Government, and the full power and authority of the Government is going to be behind the lawsuit coming back after them, I think they are not going to lose an incentive to act for the marketplace.

Mr. HARRIS. This is a difficult point to pursue, the notion that the Government does the pursuing in all common law liability for people—it's a difficult precedent.

Mr. CRAWFORD. I am not suggesting that as a general principle, I am saying the price of indemnity ought to be that.

Mr. HARRIS. You do feel, though, at least there is a case. Obviously, you feel there is a case so far as suppliers are concerned that they did not use proper care or procedures before supplying you with a product that contained Tris.

Mr. CRAWFORD. We filed that lawsuit under several theses of recovery. One is a strict liability theory where we would not have to prove negligence. There is a question of whether Tennessee recognizes liability in cases of pure economic injury, which is what

this is. I don't know if we will be able to prove negligence. I don't know if we will collect a dime.

The reason we filed it was to preserve every remedy option our client had. I just don't think for the industry as a whole that is a remedy that is at all consistent with realities.

Mr. HARRIS. Do I understand the total testimony here is that you feel we should not use the smoking gun theory, that you feel like there is a cumulative evidence of Government misfeasance and nonfeasance that would justify distinguishing this from other cases or other matters that might come before us, and this would justify indemnification on that basis?

Mr. CRAWFORD. Exactly.

Mr. HARRIS. Do the other two witnesses feel the same?

Mr. DEVEREUX. I agree.

Mr. WILLIAMS. Yes.

Mr. MAZZOLI. Thank you.

Mr. HARRIS. Thank you, Mr. Chairman.

Mr. MAZZOLI. I would like to follow up a second, Mr. Crawford.

You made a very good point extemporaneously in this, don't look for the smoking gun, but the chain and pattern of events, if you have a chance to put those into some form of writing, I would appreciate your sending it to the committee.

I thought that was rather interesting, and it did combine some of what had been presented today.

Mr. Williams, you say that your particular company, Swanknit, has resisted so far the temptation to sell your products in export in order to recover some money for them.

Mr. WILLIAMS. Right.

Mr. MAZZOLI. Let me ask you this question: Do you think that your colleague companies who have sold in export, at least some of them, should they be indemnified if this committee and this Congress and so forth were to go along?

Mr. WILLIAMS. Oh, yes; I definitely do.

Mr. MAZZOLI. You don't think the fact they had dumped this product abroad should——

Mr. WILLIAMS. No, indeed.

Mr. MAZZOLI [continuing]. Should eliminate their right to recover?

Mr. WILLIAMS. I didn't do it for a moral purpose myself, as I stated.

Mr. MAZZOLI. Trying to get more for it?

Mr. WILLIAMS. I thought perhaps I might have to have that. I have grandchildren, I have 13 grandchildren, and they are all wearing Tris garments. I had a great-granddaughter 3 weeks ago; she has Tris garments. I don't agree with the findings they have made. I have followed it up and a lot of the scientific lectures I have heard, articles published. My wife happens to be a cancer victim. Thank God she has the type that can be treated. Two years ago she developed cancer. Through chemotherapy she——

Mr. MAZZOLI. She is in remission?

Mr. WILLIAMS. Yes; right. So I would certainly be the last one to want to put anything on that would cause cancer. But I heard a lecture coming back on the Queen Elizabeth last week; I was over to visit my son, and it was a very famous scientist, I have his

name, Dr. Beaver, and he outlined some of the problems in trying to make tests on rates that would lead you to completely different conclusions.

Dr. Beaver says if the same methods were being used today on the aspirin today they are using on Tris and tobacco and he named about half a dozen others, he said if the same reasoning were followed we would not have aspirin on the retail counter today. So there is not full agreement.

Mr. MAZZOLI. Chairman Danielson sort of led to that when he talked about how far can products be tested.

Let me ask, Mr. Crawford, if my notes are correct you used the term legitimate and responsible mitigation of damages, and you sort of distinguished exporting of these goods and putting them in a category of perhaps an illegimate type mitigation.

I wonder if you will tell me whether you and your company think a person who has exported should also recover damages?

Mr. CRAWFORD. We don't have any position. We did not export and I merely wanted to distinguish us from the people who did for the purposes of those people who are very concerned about the export question.

Mr. MAZZOLI. Do you think the companies which did export ought to receive indemnification?

Mr. CRAWFORD. I will be glad to give you my personal view.

Mr. MAZZOLI. That is what I asked for.

Mr. CRAWFORD. I think they have acted legally. The law permits it. For the Congress to sit in moral judgment where there is no legislation guiding them is introducing a pretty subjective consideration into things.

Mr. MAZZOLI. And the measure would be what their net loss is after having sold abroad at depressed prices, and so forth?

Mr. CRAWFORD. Yes; but I am very sympathetic with the people who are saying, well, what is happening to foreign children?

Mr. MAZZOLI. What can be done with Tris material? You said in the case of the converter where you have imprinted material you have a better opportunity to mitigate. What can you do with Tris-treated, unfinished material?

Mr. CRAWFORD. Casket lining, for example. This is some of the kinds of black horrors coming out of this thing.

We called up our supplier and saw what are we going to do with the 3 million yards, and they say line caskets with it, nobody is going to object to that. There are some industrial interlining uses where the stuff is used inside certain products where it does not come into contact with people, so there is no skin absorption. There is another example.

Mr. MAZZOLI. You have never heard with respect to use for curtains or draperies?

Mr. CRAWFORD. Never have. I don't know what the position of the scientific community or the Commission would be on that.

Mr. MAZZOLI. And yet there is something, I heard testimony today or something that if you wash the garment three times you can use it. Is that the Commission's view?

Mr. CRAWFORD. The Commission said a piece of sleepwear which had been washed by the consumer was not a banned hazardous substance. There is a lot of scientific dispute about where you can

wash the Tris out. We tried, we ran tests to see if we can wash the darn stuff out of the fabric, and we were never able to get it all out. We knew there would be some people concerned about the presence of it, and so we gave up.

Mr. MAZZOLI. Thank you very much.

Mr. Chairman?

Mr. DANIELSON. When did the notice about wash three times come out?

Mr. CRAWFORD. That notice was never issued. That was the request made in the EDF's first petition in March 1976.

Mr. DANIELSON. Was that part of the 1976, in other words, at that time EDF was requesting that the garment be labeled to wash three times before use?

Mr. CRAWFORD. Yes.

Mr. DANIELSON. How many known cases of cancer arising from the use of Tris-treated garments are there, so far as you know?

Mr. CRAWFORD. As I understand the literature, they said they have no cases of cancer resulting from Tris.

Mr. DANIELSON. Have you made any study at all of the literature?

Mr. CRAWFORD. Have I personally?

Mr. DANIELSON. Yes.

Mr. CRAWFORD. Yes. In preparation of my lawsuit.

Mr. DEVEREUX. I have read it rather thoroughly, too. There is no known case of human cancer.

Mr. CRAWFORD. Of course, it takes 30 to 50 years for cancer to show up.

Mr. DANIELSON. I understand that. But I wondered if there were any known or documented cases of cancer or even a benign tumor by Tris.

You know of none?

Mr. CRAWFORD. I personally know of none.

Mr. DANIELSON. I thank you. We understand your position here, your loss, your interest.

Mr. Devereux, you used a term near the end of your presentation about enhancing your product liability or something like that. I didn't understand it. What did you mean by that?

Mr. DEVEREUX. I don't like to suggest this opens Pandora's box, but there may be some possibilities of product liablity to people that get cancer in one of the three or four target areas, of course, kidney cancer supposedly being the target according to the CPSC investigation.

Mr. DANIELSON. In other words, to establish that you had taken steps to try to——

Mr. DEVEREUX. We are really trying to show that we have evidence that there is very little risk. It is not a great risk.

Mr. DANIELSON. I just didn't understand the thrust of the language.

Mr. CRAWFORD. Mr. Chairman, may I make one point very quickly nobody else mentioned.

There has been a discussion about whether there was any other chemical available besides Tris for us in children's sleepwear.

I think the committee ought to consider even if there were an alternative, whether that in any way cuts against this legislation. I

think there were some other chemicals, particularly pretty late in the game, say in 1976 that were available.

Mobile 19 was one. The EDF, I believe it was the EDF, filed a petition with the Consumer Product Safety Commission after it filed its Tris petitions urging that all chemically treated sleepwear be labeled saying what chemicals were on it and warning the public that it was chemically treated.

In other words, the scientific community, the same people concerned with the Tris were concerned about the possible effects of all of these alternative chemicals, so that if people had opted not for Tris but Mobile 19, we might be here today talking about the Mobile 19 ban.

In other words, the Commerce Department forced industry into chemical treatment very quickly when people new we didn't know about those chemicals, and it did not really matter whether he chose, the industry chose Tris or some other chemical, it would have been the same thing that resulted from another chemical. In fact, some of the chemicals have been taken off the market now.

Mr. DANIELSON. You say EDF filed a petition subsequent to the first one and asked that all chemically treated sleepwear be labeled advising the public of the fact that it was chemically treated and I presume setting forth the name of the chemical.

Mr. CRAWFORD. Yes.

Mr. DANIELSON. Which would mean nothing to most people.

Mr. CRAWFORD. That's right. It would be completely ineffective, but it does show we are not here necessarily because industry chose Tris.

Mr. DANIELSON. I think we understand that part.

Thank you very much.

There being no other witnesses to help us with this problem, the committee hearings will be closed insofar as taking testimony is concerned.

We will move into markup as quickly as we can, and we thank you, gentlemen.

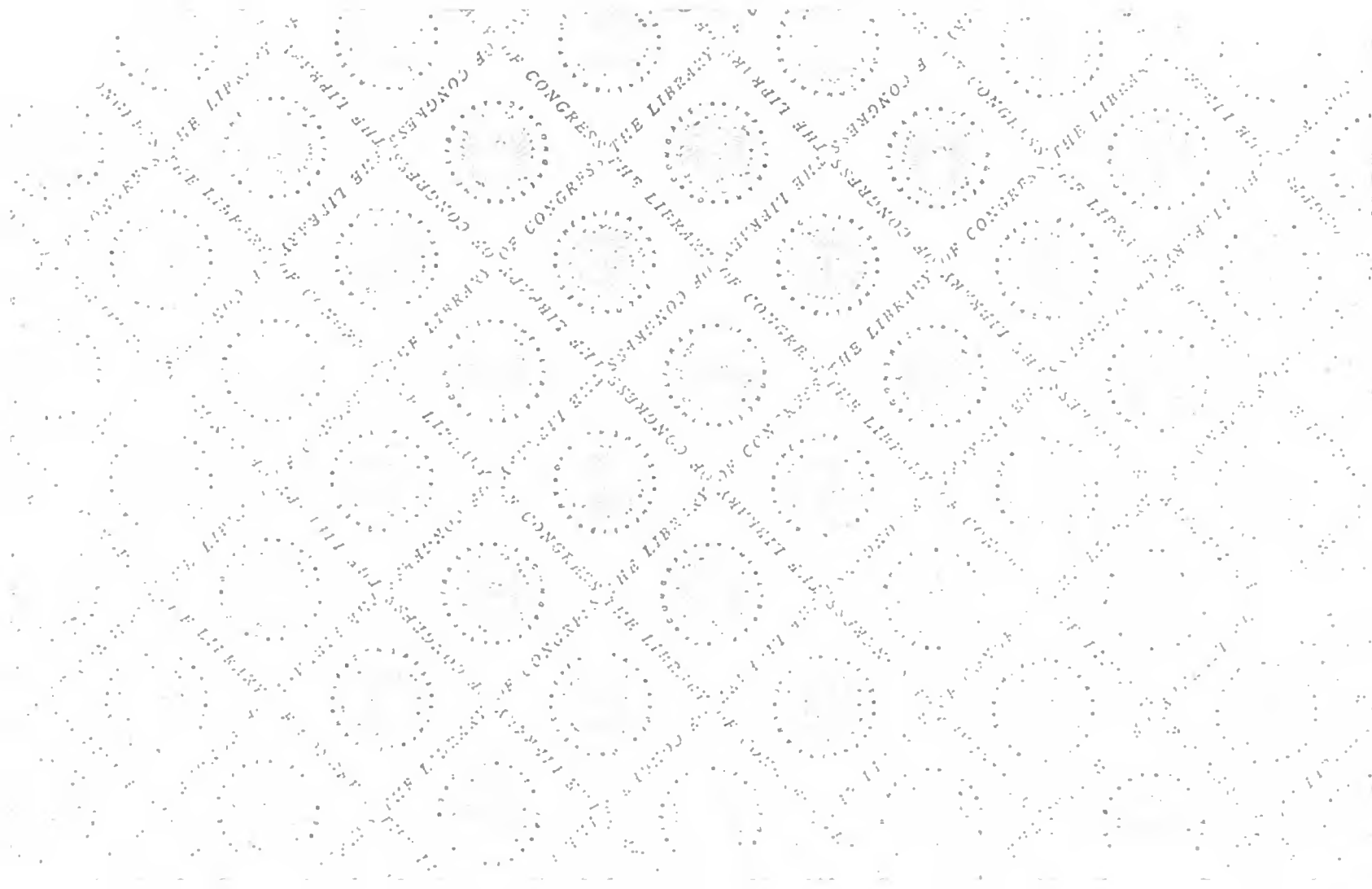
I know I think you have been here 2 days, sir, or one of you has.

Thank you very much. You have been most helpful to us.

The subcommittee will adjourn.

[Whereupon, at 2:45 p.m. the Subcommittee on Administrative Law and Governmental Relations adjourned.]

CB-150.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