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FLAMMABLE FABRICS ACT AND PRODUCT SAFETY COMMISSION

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HEARINGS

BEFORE THE

SUBCOMMITTEE ON COMMERCE AND FINANCE

OF THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

HOUSE OF REPRESENTATIVES

NINETIETH CONGRESS

FIRST SESSION

ON

H.R. 5654

A BILL TO AMEND THE FLAMMABLE FABRICS ACT TO INCREASE THE PROTECTION AFFORDED CONSUMERS AGAINST INJURIOUS FLAMMABLE FABRICS

(And Identical Bills)

H.R. 5474

A BILL TO MAKE BEDDING SUBJECT TO THE PROVISIONS OF THE FLAMMABLE FABRICS ACT

H.R. 6142, H.R. 7471

BILLS TO AMEND THE FLAMMABLE FABRICS ACT SO AS TO CLARIFY CERTAIN PROVISIONS OF THAT ACT

H.J. Res. 280, H.J. Res. 340, H.J. Res. 357

JOINT RESOLUTIONS TO ESTABLISH A NATIONAL COMMISSION ON PRODUCT SAFETY

APRIL 5, 11, 14, 27, AND JULY 31, 1967

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FLAMMABLE FABRICS ACT AND PRODUCT SAFETY COMMISSION

WEDNESDAY, APRIL 5, 1967

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The committee met at 10 a.m., pursuant to notice, in room 2322, Rayburn House Office Building, Hon. John E. Moss (chairman of the subcommittee) presiding.

Mr. Moss. The committee will be in order.

Today the Subcommittee on Commerce and Finance commences hearings on proposed amendments to the Flammable Fabrics Act, and also on the proposed establishment of the National Commission on Product Safety.

The bills and resolutions before us on these two subjects are in three categories: A series to amend the Flammable Fabrics Act to increase the protection afforded to consumers against the injurious flammable fabrics; one by Mr. Quie of Minnesota, to make bedding subject to the provisions of the Flammable Fabrics Act; two, by Mr. Flynt, of Georgia, and Mr. Jonas, of North Carolina, to amend the Flammable Fabrics Act so as to clarify certain provisions of that act; and three to establish a National Commission on Product Safety.

The Flammable Fabrics Act was enacted during the 83d Congress and approved on June 30, 1953. Thus, it has a history of almost 14 years and, as stated by the President in his recent message on protecting the American consumer, "has done much to keep extremely flammable clothing out of the Nation's stores."

But there are a number of items in everyday use throughout the country which are not covered. The present act pertains essentially to wearing apparel. The amendments before us would expand the coverage to other fabrics commonly used throughout the country.

Additionally, there have been a number of new processes, either discovered or vastly expanded, during the past 14 years, particularly in the field of synthetic or manmade fibers. It is also know that there are new fireproofing processes which can be worked in at the time of manufacture.

I believe that it is obvious, and need not be belabored, that it is time to have a new look at this legislation and to consider what amendments will improve the legislation from the consumer's point of view.

I say that with a firm conviction that we must also balance the interests of the manufacturers.

Turning now to the proposed National Commission on Product Safety, prosperous years and the technological advances that we have

enjoyed since World War II have created numerous new potential hazards in the home.

House Joint Resolution 280 would establish a seven-member Commission appointed by the President which shall "review the scope, adequacy and uniformity of existing legislation and self-regulation." It would then make recommendations for remedial action by the President, the Congress, the States, and private industry.

I believe that the Government witnesses are prepared to demonstrate the size and the types of new potential hazards in and around the American home.

The primary bills before the committee and the agency reports and comments will be included in the record at this point.

(The bills referred to, and agency reports thereon, follow:)

(Bills identical to H.R. 5654, introduced by Mr. Staggers: H.R. 5780, Murphy, N.Y.; H.R. 5938, Rooney, N.Y.; H.R. 6025, Moss, Calif.; H.R. 6114, Dingell, Mich.; H.R. 6421, Adams, Wash.; H.R. 7920, Fisher, Tex.; H.R. 9781, Long, Md.; H.R. 10880, Foley, Wash.)

[H.R. 5654, 90th Cong., 1st sess.]

A BILL To amend the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 2 of the Flammable Fabrics Act (15 U.S.C. 1191; 67 Stat. 111) is amended by—

(1) amending paragraph (d) to read as follows:

"(d) The term 'article of wearing apparel' means any costume or article of clothing worn or intended to be worn by individuals."

(2) repealing paragraph (f);

(3) redesignating paragraphs (e), (g), and (h) as paragraphs (f), (i), and (j), respectively;

(4) inserting therein, immediately after amended paragraph (d), the following new paragraph:

"(e) The term 'interior furnishing' means any type of furnishing made in whole or in part of fabric or related material and ordinarily manufactured, sold, or intended for use in homes, offices, and places of assembly."

(5) amending redesignated paragraph (f) to read as follows:

"(f) The term 'fabric' means any material (except fiber, filament, or yarn for other than retail sale) woven, knitted, felted, or otherwise produced from or in combination with any natural or synthetic fiber, film, or substitute therefor which is intended or sold for use in any product as defined in subsection (h)."

(6) inserting therein, immediately after redesignated paragraph (f), the following new paragraph:

"(g) The term 'related material' means paper, plastic, rubber, synthetic film, or synthetic foam that is used, sold, or intended for use in any product as defined in subsection (h)."

(7) inserting therein, immediately after redesignated paragraph (g), the following new paragraph:

"(h) The term 'product' means any article of wearing apparel or interior furnishing."

SEC. 2. Section 3 of the Flammable Fabrics Act is amended to read as follows:

"PROHIBITED TRANSACTIONS

"(a) The manufacture for sale, the sale, or the offering for sale, in commerce, or the importation into the United States, or the introduction, delivery for introduction, transportation or causing to be transported, in commerce, or the sale or delivery after a sale or shipment in commerce, of any product which fails to conform to an applicable standard issued or amended under the provisions of section 4 of this Act, shall be unlawful and shall be an unfair method of competition and an unfair and deceptive act or practice in commerce under the Federal Trade Commission Act.

"(b) The sale or the offering for sale, in commerce, or the importation into the United States, or the introduction, delivery for introduction, transportation or causing to be transported, in commerce, or the sale or delivery after a sale or shipment in commerce, of any fabric or related material which fails to conform to an applicable standard issued or amended under the provisions of section 4 of this Act, shall be unlawful and shall be an unfair method of competition and an unfair and deceptive act or practice in commerce under the Federal Trade Commission Act.

"(c) The manufacture for sale, the sale, or the offering for sale, of any product made of fabric or related material which fails to conform to an applicable standard issued or amended under section 4 of this Act, and which has been shipped or received in commerce shall be unlawful and shall be an unfair method of competition and an unfair and deceptive act or practice in commerce under the Federal Trade Commission Act."

SEC. 3. Section 4 of the Flammable Fabrics Act is amended to read as follows:

"STANDARDS OF FLAMMABILITY

"SEC. 4. (a) The Secretary of Commerce shall prescribe and publish in the Federal Register flammability standards (including conditions and manner of testing) for articles of wearing apparel, and fabrics and related materials used in the manufacture of such articles.

"(b) In addition to the flammability standards prescribed under subsection (a) of this section, the Secretary of Commerce, if he determines after notice and opportunity for presentation of views that a flammability standard for a fabric, related material or product, not subject to subsection (a) of this section, is needed to protect the public against unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage, shall, after notice and opportunity for presentation of views, prescribe and publish in the Federal Register a flammability standard (including conditions and manner of testing) for such fabric, related material, or product.

"(c) If at any time after any standard prescribed pursuant to this section becomes effective, the Secretary of Commerce finds that the public interest requires revision of such standard, he shall, after notice and opportunity for presentation of views, amend such standard. The Secretary of Commerce shall, before making such a finding, consider the report prepared pursuant to section 14(a) of this Act.

"(d) Each standard or amendment thereto promulgated pursuant to this section shall adequately protect the public against unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage, shall be practicable, shall be stated in objective terms, and shall become effective six months from the date on which such standards or amendments are published, unless the Secretary of Commerce finds for good cause shown, that an earlier or later effective date is in the public interest, and publishes the reasons for such finding."

SEC. 4. (a) Subsection (c) of section 5 of the Flammable Fabrics Act is amended to read as follows:

"(c) The Commission is authorized and directed to prescribe such rules and regulations, including provisions for maintenance of records relating to fabrics, related materials, and products, as may be necessary and proper for administration and enforcement of this Act. The violation of such rules and regulations shall be unlawful and shall be an unfair method of competition and an unfair and deceptive act or practice, in commerce, under the Federal Trade Commission Act."

(b) Subsection (d)(1) of the Act is amended by substituting "product," for "article of wearing apparel or" and by inserting "or related material" immediately after "fabric."

(c) Section 5 of the Act is further amended by adding at the end thereof the following new subsection:

"(e) Every person who shall engage in any of the acts or practices referred to in section 3 of the Act shall maintain proper records showing the nature of the transaction and the acquisition, disposition, and intended end use of the fabrics, related materials, or products involved. Every person claiming an exemption or exclusion from the Act because fabrics or related materials are purportedly intended for usages not subject to the Act or because transactions involving fabrics, related materials, or products are purportedly exempted or

excluded from the application of the Act shall maintain proper records showing the nature of the transaction and the acquisition, disposition, and intended end use of such fabrics, related materials, or products. Such records shall be maintained or preserved for at least three years. The neglect or refusal to maintain the required records is unlawful, and any person neglecting or refusing to maintain such records shall be guilty of an unfair method of competition or an unfair or deceptive practice, in commerce, under the Federal Trade Commission Act."

SEC. 5. (a) Subsection (a) of section 6 of the Flammable Fabrics Act is amended by inserting ", and subsections (c) and (e) of section 5," immediately after "section 3."

(b) Subsections (b), (c), and (d) of section 6 of the Flammable Fabrics Act are amended to read as follows:

"(b) Whenever the Commission has reason to believe that any product has been manufactured or introduced into commerce or any fabric or related material has been introduced in commerce in violation of section 3 of this Act, it may institute proceedings by process of libel for the seizure and confiscation of such product, fabric, or related material in any district court of the United States within the jurisdiction of which such product, fabric, or related material is found. Proceedings in cases instituted under the authority of this section shall conform as nearly as may be to proceedings in rem in admiralty, except that on demand of either party and in the discretion of the court, any issue of fact shall be tried by jury. Whenever such proceedings involving identical products, fabrics, or related materials are pending in two or more jurisdictions, they may be consolidated for trial by order of any such court upon application seasonably made by any party in interest upon notice to all other parties in interest. Any court granting an order of consolidation shall cause prompt notification thereof to be given to other courts having jurisdiction in the cases covered thereby and the clerks of such other courts shall transmit all pertinent records and papers to the court designated for the trial of such consolidated proceedings.

"(c) In any such action the court upon application seasonably made before trial shall by order allow any party in interest, his attorney, or agent, to obtain a representative sample of the product, fabric, or related material seized.

"(d) If such products, fabrics, or related materials are condemned by the court they shall be disposed of by destruction, by delivery to the owner, or claimant thereof upon payment of court costs and fees and storage and other proper expenses and upon execution of good and sufficient bond to the effect that such products, fabrics, or related materials will not be disposed of until properly and adequately treated or processed so as to render them lawful for introduction into commerce, or by sale upon execution of good and sufficient bond to the effect that such products, fabrics, or related materials will not be disposed of until properly and adequately treated or processed so as to render them lawful for introduction into commerce. If such products, fabrics, or related materials are disposed of by sale the proceeds, less costs and charges, shall be paid into the Treasury of the United States."

SEC. 6. Section 7 of the Flammable Fabrics Act is amended by inserting ", 5(e)" immediately after "section 3".

SEC. 7. Section 8 of the Flammable Fabrics Act is amended to read as follows:

"GUARANTY

"SEC. 8. (a) No person shall be subject to prosecution under section 7 of this Act for a violation of section 3 of this Act if such person (1) establishes a guaranty received in good faith signed by and containing the name and address of the person by whom the product, fabric, or related material guaranteed was manufactured or from whom it was received, to the effect that reasonable and representative tests made in accordance with standards issued or amended under the provisions of section 4 of this Act show that the fabric or related material covered by the guaranty, or used in the product covered by the guaranty, conforms with applicable flammability standards issued or amended under the provisions of section 4 of this Act, and (2) has not, by further processing, affected the flammability of the fabric, related material, or product covered by the guaranty which he received. Such guaranty shall be either (1) a separate guaranty specifically designating the product, fabric, or related material guaranteed, in which case it may be on the invoice or other paper relatng to such product, fabric, or related material; or (2) a continuing guaranty filed with the Com-

mission applicable to any product, fabric, or related materal handled by a guarantor, in such form as the Commission by rules or regulations may prescribe.

"(b) It shall be unlawful for any person to furnish, with respect to any product, fabric, or related material, a false guaranty (except a person relying upon a guaranty to the same effect received in good faith signed by and containing the name and address of the person by whom the product, fabric, or related material guaranteed was manufactured or from whom it was received) with reason to believe the product, fabric, or related material falsely guaranteed may be introduced, sold, or transported in commerce, and any person who violates the provisions of this subsection is guilty of an unfair method of competition, and an unfair or deceptive act or practice, in commerce within the meaning of the Federal Trade Commission Act."

SEC. 8. Section 9 of the Flammable Fabrics Act is amended to read as follows:

"SHIPMENTS FROM FOREIGN COUNTRIES

"SEC. 9. Any person who imports or who has attempted to import from any foreign country into the United States any product, fabric, or related material which fails to conform with an applicable flammability standard issued or amended under the provisions of section 4 of this Act, may thenceforth be prohibited by the Commission from participating in the importation from any foreign country into the United States of any product, fabric, or related material except upon filing bond with the Secretary of the Treasury in a sum double the value of said products, fabrics, or related materials and any duty thereon, conditioned upon compliance with the provisions of this Act."

SEC. 9. Section 11 of the Flammable Fabrics Act is amended to read as follows:

"EXCLUSIONS

"SEC. 11. The provisions of this Act shall not apply (a) to any common carrier, contract carrier, or freight forwarder with respect to a product, fabric, or related material shipped or delivered for shipment into commerce in the ordinary course of its business: or (b) to any converter, processor, or finisher in performing a contract or commission service for the account of a person subject to the provisions of this Act: *Provided*, That said converter, processor, or finisher does not cause any product, fabric, or related material to become subject to this Act contrary to the terms of the contract or commission service; or (c) to any product, fabric, or related material shipped or delivered for shipment into commerce for the purpose of finishing or processing such product, fabric, or related material so that it conforms with applicable flammability standards issued or amended under the provisions of section 4 of this Act."

SEC. 10. The Flammable Fabrics Act is further amended by adding at the end thereof the following new section:

"INVESTIGATIONS

"SEC. 14. (a) The Secretary of Health, Education, and Welfare in cooperation with the Secretary of Commerce shall annually conduct a study and investigation of the deaths, injuries, and economic losses resulting from accidental burning of products, fabrics, or related materials. The Secretary of Health, Education, and Welfare shall submit annually a report to the President and to the Congress containing the results of the study and investigation and identification of such standards prescribed pursuant to this Act as appear to require revision in the public interest.

"(b) In cooperation with appropriate public and private agencies, the Secretary of Commerce is authorized to—

"(1) conduct research into the flammability of products, fabrics, and materials;

"(2) conduct feasibility studies on reduction of flammability of products, fabrics, and materials;

"(3) develop flammability test methods and testing devices; and

"(4) offer appropriate training in the use of flammability test methods and testing devices.

The Secretary shall annually report the results of these activities to the Congress."

SEC. 11. Notwithstanding the provisions of this Act, the standards of flammability in effect under the provisions of the Flammable Fabrics Act, as amended, on the day preceding the date of enactment of this Act, shall continue in effect

until superseded or modified by the Seretary of Commerce pursuant to the authority conferred by the amendments made by this Act.

[H.R. 5474, 90th Cong., 1st sess.]

A BILL To make bedding subject to the provisions of the Flammable Fabrics Act

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 2 of the Flammable Fabrics Act (15 U.S.C. 1191) is amended—

(1) by redestignating paragraphs (e) through (h) thereof as paragraphs (f) through (i), respectively;

(2) by inserting immediately after paragraph (d) thereof the following new paragraph:

"(e) The term 'bedding' means sheets; covers; blankets; comforters; pillowcases; quilts; bedspreads; mattress pads; the outer covering of pillows, mattresses, and box springs; and all other products used or intended to be used on or about a bed or other place for reclining or sleeping, but shall not include furniture."

(3) by inserting in paragraph (f) thereof (as redesignated by paragraph (1) of this section) immediately after "wearing apparel" the following: "or bedding,".

SEC. 2. (a) Section 3 of the Flammable Fabrics Act (15 U.S.C. 1192) is amended by striking out "or for the purpose of sale or delivery after sale in commerce, of any article of wearing apparel which under the provisions of section 4 of this Act is so highly flammable as to be dangerous when worn" and inserting in lieu thereof the following: "or the sale or delivery after shipment in commerce, of any article of wearing apparel or bedding which under the provisions of section 4 of this Act is so highly flammable as to be dangerous when worn or used".

(b) Subsection (b) of such section 3 is amended by striking out "or for the purpose of sale or delivery after sale in commerce, of any fabric which under the provisions of section 4 of this Act is so highly flammable as to be dangerous when worn by individuals" and inserting in lieu thereof the following: "or sale or delivery after shipment in commerce, of any fabric which under the provisions of section 4 of this Act is so highly flammable as to be dangerous when incorporated into articles of wearing apparel or bedding to be worn or used by individuals".

(c) Subsection (c) of such section is amended by inserting "or bedding" immediately after "article of wearing apparel".

SEC. 3. (a) Subsection (a) of section 4 of the Flammable Fabrics Act (15 U.S.C. 1193) is amended (1) by inserting "or used" immediately after "dangerous when worn" and (2) by inserting "or bedding" immediately after "article of wearing apparel".

(b) Such section 4 is further amended by adding at the end thereof the following:

"(c) Where articles of wearing apparel or beddings are not of a sufficient size to provide the required number of specimens for testing under a prescribed commercial standard set out in subsection (a) above, specimens for testing may be taken from a sufficient number of such articles of wearing apparel or beddings containing fabric of the same fiber composition, construction or finish or film of the same stock or formula number, color and general description as will provide the number of specimens necessary for testing under the prescribed commercial standard.

"(d) A person or firm who markets articles of wearing apparel or items of bedding which in themselves are not of a sufficient size for testing under the prescribed commercial standard set out in subsection (a) above shall upon request furnish the Commission with samples of materials or fabrics used in such product of sufficient size for testing under the prescribed standard.

"(e) If samples of the materials or fabrics used in articles of wearing apparel or bedding are not promptly furnished to the Commission after request, the Commission may cause the product to be tested by the method of testing provided in the appropriate commercial standard: *Provided, however,* Such tests shall be deemed complete for the purpose of establishing that the fabric or film was so highly flammable as to be dangerous when worn or used by individuals

notwithstanding any inability to test the number of speciments prescribed in the commercial standard."

SEC. 4. Paragraph (1) of subsection (d) of section 5 of the Flammable Fabrics Act (15 U.S.C. 1194) is amended by inserting ", bedding," immediately after "article of wearing apparel".

SEC. 5. (a) Subsection (b) of section 6 of the Flammable Fabrics Act (15 U.S.C. 1195) is amended—

(1) by inserting "or bedding" immediately after "article of wearing apparel" the first time it appears therein; and

(2) by inserting ", bedding," immediately after "article of wearing apparel" the second and third time it appears therein; and

(3) by inserting ", beddings," immediately after "articles of wearing apparel".

(b) Subsection (c) of such section 6 is amended by inserting ", bedding," immediately after "article of wearing apparel".

(c) Subsection (d) of such section 6 is amended to read as follows:

"(d) If such articles of wearing apparel, beddings, or fabrics are condemned by the court they shall be disposed of by destruction, by delivery to the owner or claimant thereof upon payment of court costs and fees and storage and other proper expenses and upon execution of good and sufficient bond to the effect that such articles of wearing apparel, beddings, or fabrics will not be disposed of for these purposes until properly and adequately treated or processed so as to render them lawful for introduction into commerce, or by sale upon execution of good and sufficient bond to the effect that such articles of wearing apparel, beddings, or fabrics will not be disposed of for these purposes until properly and adequately treated or processed so as to render them lawful for introduction into commerce. If such products are disposed of by sale the proceeds, less costs and charges, shall be paid into the Treasury of the United States."

SEC. 6. (a) Subsection (a) of section 8 of the Flammable Fabrics Act (15 U.S.C. 1197) is amended to read as follows:

"(a) No person shall be subject to prosecution under section 7 of this Act for a violation of section 3 of this Act if such person (1) establishes a guaranty received in good faith signed by and containing the name and address of the person by whom the wearing apparel, bedding, or fabric guaranteed was manufactured or from whom it was received, to the effect that reasonable and representative tests made under the procedures provided in section 4 of this Act show that the fabric covered by the guaranty, or used in the wearing apparel, or bedding covered by the guaranty, is not, under the provisions of section 4 of this Act, so highly flammable as to be dangerous when worn or used by individuals, and (2) has not, by further processing, affected the flammability of the fabric, wearing apparel, or bedding covered by the guaranty which he received. Such guaranty shall be either (1) a separate guaranty specifically designating the wearing apparel, bedding, or fabric guaranteed, in which case it may be on the invoice, or other paper relating to such wearing apparel, bedding, or fabric; or (2) a continuing guaranty filed with the Commission applicable to any wearing apparel, bedding, or fabric handled by the guarantor, in such form as the Commission by rules and regulations may prescribe."

(b) Subsection (b) of such section 8 is amended by inserting ", bedding," immediately after "wearing apparel" each place where it appears therein.

SEC. 7. Section 9 of the Flammable Fabrics Act (15 U.S.C. 1198) is amended (1) by inserting ", bedding," immediately after "wearing apparel" each place where it appears therein and (2) by inserting "or used" immediately after "dangerous when worn".

SEC. 8. Section 11 of the Flammable Fabrics Act (15 U.S.C. 1200) is amended (1) by inserting ", bedding," immediately after "wearing apparel" each place where it appears therein and (2) by inserting "or used" immediately after "dangerous when worn".

SEC. 9. The amendment made by this Act shall only apply with respect to articles of bedding manufactured after the thirtieth day after the date of enactment of this Act.

(H.R. 7471 (Jonas, N.C.) is identical to H.R. 6142 (Flynt, Ga.).)

[H.R. 6142, 90th Cong., 1st sess.]

A BILL To amend the Flammable Fabrics Act so as to clarify certain provisions of that Act

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the second sentence of subsection (a)

of section 4 of the Flammable Fabrics Act (15 U.S.C. 1193) is amended by inserting immediately after "For the purposes of this Act," the following: "(1) the uncovered or exposed part of any article of wearing apparel means the uncovered or exposed part of such article as it was intended to be worn and (2)".

(H.J. Res. 340 (Rooney, Pa.) and H.J. Res. 357 (Dingell, Mich.) are identical to H.J. Res. 280 (Moss, Calif.).)

[H.J. Res. 280, 90th Cong., 1st sess.]

JOINT RESOLUTION To establish a National Commission on Product Safety

Whereas the American consumer has a right to be protected against unreasonable risk of bodily harm from products purchased on the open market for the use of himself and his family;

Whereas manufacturers whose products are marketed substantially in interstate commerce are entitled to a reasonable degree of uniformity in the application of safety regulations to such products;

Whereas Federal, State, and local laws relating to consumer protection against such hazardous products are widely divergent and fail to provide adequately for consumer protection; and

Whereas it is desirable to establish a commission to review the scope, adequacy, and uniformity of existing legislation and self-regulation and to make recommendations for appropriate remedial action by the President, the Congress, the States, and private industry: Now, therefore, be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) there is hereby established a National Commission on Product Safety (hereinafter referred to as the "Commission").

(b) The Commission shall be composed of seven members appointed by the President from among persons who are specially qualified to serve on such Commission by virtue of their education, training, or experience.

(c) Any vacancy in the Commission shall not affect its powers.

(d) The President shall designate one of the members to serve as Chairman and one to serve as Vice Chairman of the Commission.

(e) Four members of the Commission shall constitute a quorum.

DUTIES OF THE COMMISSION

SEC. 2. (a) The Commission shall conduct a comprehensive study and investigation of the scope and adequacy of measures now employed to protect consumers against unreasonable risk of injuries which may be caused by hazardous household products. Such study and investigation shall include consideration of the following:

(1) the identity of household products, except such products excluded in section 6, which are determined to present an unreasonable hazard to the health and safety of the consuming public;

(2) the extent to which self-regulation by industry affords such protection;

(3) the protection against such hazardous products afforded at common law in the States, including the relationship of product warranty to such protection; and

(4) a review of Federal, State, and local laws relating to the protection of consumers against such hazardous products, including the scope of coverage, the effectiveness of sanctions, the adequacy of investigatory powers, the uniformity of application, and the quality of enforcement.

(b) The Commission may transmit to the President and to the Congress such interim reports as it deems advisable and shall transmit its final report to the President and to the Congress not later than January 1, 1969. Such final report shall contain a detailed statement of the findings and conclusions of the Commission together with its recommendations for such legislation as it deems appropriate.

POWERS OF THE COMMISSION

SEC. 3. (a) The Commission, or any two members thereof as authorized by the Commission, may conduct hearings anywhere in the United States or otherwise secure data and expressions of opinions pertinent to the study. In connection therewith the Commission is authorized by majority vote—

(1) to require, by special or general orders, corporations, business firms, and individuals to submit in writing such reports and answers to questions as the Commission may prescribe; such submission shall be made within such reasonable period and under oath or otherwise as the Commission may determine;

(2) to administer oaths;

(3) to require by subpena the attendance and testimony of witnesses and the production of all documentary evidence relating to the execution of its duties;

(4) in the case of disobedience to a subpena or order issued under paragraph (a) of this section, to invoke the aid of any district court of the United States in requiring compliance with such subpena or order;

(5) in any proceeding or investigation to order testimony to be taken by deposition before any person who is designated by the Commission and has the power to administer oaths, and in such instances to compel testimony and the production of evidence in the same manner as authorized under paragraphs (3) and (4) of this subsection; and

(6) to pay witnesses the same fees and mileage as are paid in like circumstances in the courts of the United States.

(b) Any district court of the United States within the jurisdiction of which an inquiry is carried on may, in case of refusal to obey a subpena or order of the Commission issued under subsection (a) of this section, issue an order requiring compliance therewith; and any failure to obey the order of the court may be punished by the court as a contempt thereof.

(c) The Commission is authorized to require directly from the head of any Federal agency available information deemed useful in the discharge of its duties. Each Federal agency is authorized and directed to cooperate with the Commission and to furnish all information requested by the Commission to the extent permitted by law.

(d) The Commission is authorized to enter into contracts with Federal or State agencies, private firms, institutions, and individuals for the conduct of research or surveys, the preparation of reports and other activities necessary to the discharge of its duties.

(e) When the Commission finds that publication of any information obtained by it is in the public interest and would not give an unfair competitive advantage to any person, it is authorized to publish such information in the form and manner deemed best adapted for public use, except that data and information which would separately disclose the business transactions of any person, trade secrets, or names of customers shall be held confidential and shall not be disclosed by the Commission or its staff: *Provided, however,* That the Commission shall permit business firms or individuals reasonable access to documents furnished by them for the purpose of obtaining or copying such documents as need may arise.

(f) The Commission is authorized to delegate any of its functions to individual members of the Commission or to designate individuals on its staff and to make such rules and regulations as are necessary for the conduct of its business, except as herein otherwise provided.

COMPENSATION OF MEMBERS OF THE COMMISSION

SEC. 4. Each member of the Commission may receive compensation at the rate of $100 for each day such member is engaged upon work of the Commission, and shall be reimbursed for travel expenses, including per diem in lieu of subsistence as authorized by law (5 U.S.C. 5703) for persons in the Government service employed intermittently.

ADMINISTRATION

SEC. 5. (a) The Commission is authorized, without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and without regard to the provisions of chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates, to appoint and fix the compensation of an executive director and the Executive Director, with the approval of the Commission, may employ and fix the compensation of such additional personnel as may be necessary to carry out the functions of the Commission, but no individual so appointed shall receive compensation in excess of the rate authorized for GS–18 by section 5332 of such title.

(b) The Executive Director, with the approval of the Commission, is authorized to obtain services in accordance with the provisions of section 3109 of title 5, United States Code, but at rates for individuals not to exceed $100 per diem.

(c) The head of any Federal agency is authorized to detail, on a reimbursable basis, any of its personnel to assist in carrying out the duties of the Commission under this Act.

(d) Financial and administrative services (including those related to budgeting and accounting, financial reporting, personnel, and procurement) shall be provided the Commission by the General Services Administration, for which payment shall be made in advance, or by reimbursement, from funds of the Commission in such amounts as may be agreed upon by the Chairman of the Commission and the Administrator of General Services. Regulations of the General Services Administration for the collection of indebtedness of personnel resulting from erroneous payments shall apply to the collection of erroneous payments made to or on behalf of a Commission employee, and regulations of said Administrator for the administrative control of funds shall apply to appropriations of the Commission, but the Commission shall not be required to prescribe such regulations.

(e) Ninety days after submission of its final report, as provided in section 2(b), the Commission shall cease to exist.

DEFINITION

SEC. 6. The term "household products" means products customarily produced or distributed for sale through retail sales agencies or instrumentalities for use by a consumer or any member of his family. Such term does not include products regulated under the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. 1381 et seq.), the Flammable Fabrics Act (15 U.S.C. 1191 et seq.), the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), the Federal Hazardous Substances Labeling Act (15 U.S.C. 1261 et seq.), the Federal Cigarette Labeling and Advertising Act (15 U.S.C. 1331 et seq.), and the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 135 et seq.).

AUTHORIZATION

SEC. 7. There are authorized to be appropriated such sums, not to exceed $2,000,000, as may be necessary to carry out the provisions of this Act.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., April 4, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your requests for the views of the Bureau of the Budget on three bills to amend the Flammable Fabrics Act. Although the bills are not identical, they are related, and we are therefore providing our views on all of them in a single report.

H.R. 5654, a bill "To amend the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics," would carry out the proposal contained in the President's message of February 20, 1967, on protecting the American consumer. H.R. 5780, H.R. 5938, H.R. 6025, H.R. 6114, and H.R. 6421 are all identical to H.R. 5654.

In his message the President recognized that while the Flammable Fabrics Act has done much to keep extremely flammable clothing out of the Nation's stores, the standards of flammability in the Act have become deficient. The current law does not cover many articles of clothing which can be consumed by fire instantaneously and is narrowly restricted to certain wearing apparel. To close the gaps in existing law, H.R. 5654 would broaden and strengthen the Flammable Fabrics Act in several significant ways.

First, it would expand the coverage of the articles of wearing apparel subject to the Act's provisions by eliminating exemptions for certain items which are no longer deemed appropriate. In addition, it would extend coverage of the Act to include interior furnishings to be used in homes, offices, and places of assembly.

Second, the authority of the Secretary of Commerce to prescribed standards of

flammability would be expanded and facilitated. Current standards now in the Act (and incorporated by reference under H.R. 5654) are 14 years old and can only be revised through the enactment of legislation.

H.R. 5654 would authorize the Secretary to make such revisions through administrative processes. Moreover, the Secretary would be authorized, after a determination of need and appropriate notice and opportunity for interested parties to participate, to prescribed new standards of flammability for various materials covered by the Act.

Third, H.R. 5654 recognizes that by adding a new section 14 to the Act constant attention must be given to the dangers of injury and economic loss from flammable fabrics. The new section would authorize the Secretary of Health, Education, and Welfare to study and investigate deaths, injuries, and economic losses resulting from accidental burnings and report the results annually to the President and the Congress. The new section also would authorize the Secretary of Commerce to cooperate with public and private groups and agencies to reduce the hazards of flammability through research, flammability reduction feasibility studies, development of testing methods and devices, and training.

H.R. 5474 would make bedding subject to the provisions of the Flammable Fabrics Act. While we believe that bedding should come within the purview of the Flammable Fabrics Act, H.R. 5654 would accomplish this purpose.

H.R. 6142, a bill "To amend the Flammable Fabrics Act to clarify certain provisions of that Act," would provide a more restrictive application of the Act to wearing apparel. It would limit the authority of the Federal Trade Commission to consider the manner in which clothing is actually worn in enforcing flammability standards. We understand that serious accidents have been incurred by individuals who wear clothing in a manner for which it was not intended and have thereby exposed parts of the clothing to burning. An example is the tendency of some to wear sweatshirts inside out.

Accordingly, for the reasons noted above, enactment of H.R. 5654, H.R. 5780, H.R. 5938, H.R. 6025, H.R. 6114, or H.R. 6421 would be in accord with the President's program. The Bureau of the Budget recommends against enactment of H.R. 5474 and H.R. 6142.

Sincerely yours,

WILFRED H. ROMMEL,
Assistant Director for Legislative Reference.

U.S. DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, D.C., April 7, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request for our comments on H.R. 5654, a bill "To amend the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics," H.R. 5474, a bill "To make bedding subject to the provisions of the Flammable Fabrics Act," and H.J. Res. 280, "To establish a National Commission on Product Safety."

The safety of American consumers is of great importance to the Department of Labor, which favors the reduction of hazards arising from the use of highly flammable fabrics and supports any reasonable extension of existing legislation consonant with the President's recent Message on Consumer Interests.

H.R. 5654 would authorize new standards for "fabrics" and "related materials" for other than wearing apparel for the protection of the consuming public. It is supported by this Department.

With regard to H.R. 5474, which would make bedding subject to the provisions of the Flammable Fabrics Act, the Department does not have the technical knowledge necessary to commit authoritatively upon the adequacy of the suggested legislation, and defers to the Department of Commerce, which is responsible for carrying out the provisions of the Flammable Fabrics Act, for more definitive comments. However, it seems to us that the subject matter of the bill may be too narrow.

H.J. Res. 280 would establish a Commission composed of seven members specially qualified because of their education, training, or experience to conduct a comprehensive study to identify household products which are unreasonably

hazardous and the extent to which effective safeguards exist to protect consumers against such products and to report to the President and Congress by January 1, 1969, with recommendations for any needed legislation. The Department strongly supports this bill with the understanding that the Commission's study will not deter voluntary action or remedial measures which can be taken in the interim for the protection of consumers against hazardous products.

The Bureau of the Budget advises that enactment of this legislation would be in accord with the program of the President.

Sincerely,

W. WILLARD WIRTZ,
Secretary of Labor.

OFFICE OF THE ATTORNEY GENERAL,
Washington, D.C. April 5, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request for the views of the Department of Justice on H.R. 5654, a bill "to amend the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics."

The bill would implement the recommendations contained in the President's Consumer Message by strengthening the standards to be prescribed under the Act and extending its application to certain fabrics and products not now covered (President's Message "American Consumer Protection", Feb. 16, 1967 (H. Doc. No. 57, 90th Cong.).

The Department of Justice favors the objectives of this legislation but defers to the agency primarily concerned as to the enactment of this bill.

The Bureau of the Budget has advised that enactment of this legislation would be in accord with the Program of the President.

Sincerely,

RAMSEY CLARK,
Deputy Attorney General.

DEPARTMENT OF AGRICULTURE,
Washington, D.C., April 4, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.

DEAR MR. CHAIRMAN: This is in reply to your request of March 13, 1967, for a report on H.R. 5654, a bill "To amend the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics."

The principal purpose of this bill is to extend the scope of the present Flammable Fabrics Act to include not only articles of wearing apparel but also articles used for interior furnishings, such as drapes, bedding, rugs, and upholstery fabrics, and to establish standards of flammability that will adequately protect the public against unreasonable risks of the occurrence of fire leading to death, injury, or significant property damage.

This Department recommends passage of the bill.

The Flammable Fabrics Act has done much to prevent the marketing of extremely flammable clothing and has thus contributed to people's safety. We believe these provisions will strengthen the present act and make it more valuable to the general public.

The Bureau of the Budget advises that enactment of this proposed legislation would be in accordance with the President's program.

Sincerely yours,

ORVILLE L. FREEMAN, *Secretary.*

THE POSTMASTER GENERAL,
Washington, D.C., April 5, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request for a report on H.R. 5654, amending the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics.

This measure proposes several amendments to the Flammable Fabrics Act of 1953 in order to expand coverage of the Act and brings it up to date. The bill authorizes the Secretary of Commerce to revise existing flammability standards for wearing apparel; and brings interior furnishings such as draperies and rugs within the purview of the Act, if it is determined that flammability standards are needed for such materials.

The postal service has no direct enforcement function under the Flammable Fabrics Act, since materials proscribed by it, including offers for sale, are not declared nonmailable by the Act. This is also true with respect to the provisions of H.R. 5654. Accordingly, we have no comments on the proposed legislation.

The Bureau of the Budget has advised that the enactment of the proposed legislation would be in accord with the President's program.

Sincerely yours,

(Signed) Lawrence F. O'Brien
LAWRENCE F. O'BRIEN,
Postmaster General.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington, D.C., April 5, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This letter is in response to your request of March 13, 1967, for a report on H.R. 5654, a bill "to amend the Flammable Fabrics Act to increase protection afforded consumers against injurious flammable fabrics."

The bill would make the Act applicable to *all* types of wearing apparel and to a broader range of constituent materials thereof, including paper and plastics, and authorize the Secretary of Commerce to establish revised standards of flammability therefor in lieu of the standards frozen into the present Act; and would authorize the Secretary to issue (and from time to time revise) standards of flammability for, and thus extend the coverage of the Act to, interior furnishings—such as draperies, rugs, upholstery, and bedding—if he determined that standards are needed for those materials. Such standards would be enforced by the Federal Trade Commission, as under the present Flammable Fabrics Act.

The bill would also, among other things, give the Department of Commerce authority to conduct research on the flammability of furnishings, fabrics, and materials and would require the Secretary of Health, Education, and Welfare, in cooperation with the Secretary of Commerce, to conduct an annual investigation of deaths, injuries, and economic losses resulting from accidental burnings of such products, fabrics, or related materials. The Secretary of Health, Education, and Welfare would also be directed to submit an annual report to the President and Congress containing the results of the study and identifying such standards as appear to require revision.

In his Message of February 16, 1967, the President recommended legislation to broaden and strengthen the Flammable Fabrics Act to close gaps in the Act pointed out in the Message. H.R. 5654 is designed to carry out this recommendation, and we recommend enactment of the bill. (In view of the testimony on behalf of this Department scheduled for the forthcoming hearings on the bill, we are not burdening this report with a discussion of the problems to which the bill is addressed.)

We are advised by the Bureau of the Budget that enactment of this bill would be in accord with the program of the President.

Sincerely,

(S) WILBUR J. COHEN,
Under Secretary.

THE GENERAL COUNSEL OF THE TREASURY,
Washington, D.C., Apr. 6, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: Reference is made to your request for the views of this Department on H.R. 5654, "To amend the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics."

The Flammable Fabrics Act prohibits the introduction or movement in interstate commerce of articles of wearing apparel and certain fabrics which fail to pass specified tests of flammability. The proposed legislation is designed to close gaps which exist in the present law. It would, among other things, authorize improvement in present standards for wearing apparel, extend coverage of the Act to include interior furnishings such as bedding, upholstery and other flammable materials, and authorize administrative issuance of new standards of flammability.

Among the transactions which will be prohibited by the bill is the importation of any product which fails to conform to a standard of flammability issued by the Secretary of Commerce. After such standards are issued, the Bureau of Customs of the Treasury Department will cooperate with the Federal Trade Commission by advising that Agency of questionable importations which do not appear to meet the prescribed standards of flammability and will furnish samples of such importations to the Federal Trade Commission for testing upon their request. The Bureau of Customs cooperates with the Federal Trade Commission in this manner under the present Act with regard to wearing apparel.

Under section 9 of the bill, the Treasury Department may also be requested by the Federal Trade Commission to prohibit imports by any person who has imported or attempted to import any product, fabric, or related material which failed to conform to applicable standards of flammability, except upon the filing of a bond in a sum double the value of the imported goods.

The Department anticipates no unusual administrative difficulties in carrying out its functions under this bill. However, the broader coverage will result in a greater workload upon customs officers generally.

The Department has been advised by the Bureau of the Budget that the proposed legislation would be in accord with the President's program.

Sincerely yours,

FRED B. SMITH, *General Counsel.*

DEPARTMENT OF STATE,
Washington, D.C., Apr. 6, 1967.

HON. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request of March 13, 1967 for the views of the Department of State on H.R. 5654, a bill "To amend the Flammable Fabrics Act to increase the protection afforded consumers against injurious flammable fabrics."

The Department of State has no foreign economic policy objections to the enactment of H.R. 5654, provided that the subsequent promulgation of regulations by the concerned agencies do not prove more burdensome for imports than for domestic products.

The Bureau of the Budget has advised that enactment of this legislation would be in accordance with the President's program.

Sincerely yours,

WILLIAM B. MACOMBER, Jr.,
Assistant Secretary for Congressional Relations.

Mr. Moss. Our first witness this morning will be a colleague, Congressman Quie, of Minnesota.

Mr. Keith, I wonder if you have a statement you would like to make at this time.

Mr. KEITH. I have no statement, Mr. Chairman. I believe you have stated the background and philosophy of this committee very nicely.

Mr. Moss. Thank you, sir.

Mr. Quie.

STATEMENT OF HON. ALBERT S. QUIE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. QUIE. Thank you, Mr. Chairman and members of the subcommittee. I appreciate the interest that you are taking in the Flammable

Fabrics Act, and I believe the time has come when enough information is available to us so we can make some wise changes in the act.

It is a pleasure for me to appear before you and support legislation to strengthen the Flammable Fabrics Act of 1953. The hazards of flammable clothing and bedding have long prompted my efforts to seek a change in what has become an almost obsolete statute.

Briefly, Mr. Chairman, my bill, H.R. 5474, would include under the prohibitions of the present law any article of bedding defined as sheets, covers, blankets, comforters, pillowcases, quilts, bedspreads, mattress pads, the outer covering of pillows, mattresses, and box springs, and all other products used or intended to be used on or about a bed or other place for reclining or sleeping.

My bill also provides for standard methods of testing and rating the flammability of textiles or textile products for bedding use.

We are all aware of the origin of the 1953 act and the shocking stories of "torch" sweaters and certain children's cowboy chaps. There were instances of this in my own congressional district which were very serious.

And we believed that the fixed standards of flammability in the act were stringent enough to rid us of so-called explosive clothing.

In 1953 they were, but today it is evident that dangerously flammable fabrics are being marketed which are beyond the reach of this law. For instance, for some strange reason, the act applied to apparel only and never covered such items as blankets and other bedding products, even though Congress at the time was well apprised of the fact that these same fabrics used in the home are also highly flammable and involve much danger to individual safety in their customary use which is in close contact with persons in the family.

The same fiber in the "torch" sweaters of the fifties, brushed viscose rayon, is today going into millions of blankets. In other words, the materials banned because they are used in wearing apparel are being sold without restriction in blankets and other common household products.

Just this year the Chicago Fire Commissioner ran a series of tests on some highly flammable synthetic fiber blankets and found that strips of the blanket turned into a mass of flames the instant a lighted match was touched to its outer edge.

These blankets are made of 88 percent rayon and 12 percent acrylic and were in wide circulation in Chicago retail stores. As a result, the Food and Drug Administration decided to conduct tests to see if the blankets should be banned.

Also in the early fifties most of the new synthetic fibers were just in the process of being developed and introduced to the American market. Since that time, many of the cellulosic and synthetic fibers, which are not only quite flammable but also productive of a dangerous hot melting liquid that may result in serious or possibly fatal burns, have been adapted and are in widespread use today.

Especially when used for bedding, these fabrics are potentially dangerous to the user because of the speed and the intensity of flame with which they burn and their ease of ignition. Millions of homes are being filled with many fabrics of this description with no consideration to the flammable qualities.

The situation is most critical because the public is generally under the impression that the Flammable Fabrics Act protects them against all significant flammable fabrics. In many cases the impression of protection is an illusion.

Would it surprise the subcommittee to realize that practically everything of a textile nature, which is about 90 percent of all fabrics today, will burn and that the shirts we are wearing today will burn quite readily if set afire?

Yet they would easily pass the flammability test prescribed in the Flammable Fabrics Act. I will not take the time to go into the complexities of how various textiles burn—I leave this to the technicians and scientists. Some will be giving a demonstration today.

I believe it is suffice to say that many will easily ignite, speedily burn with an intense heat and flame. Others produce a great deal of smoke containing a high percentage of poisonous carbon monoxide.

Apply these conditions to a situation where a person is sleeping and his bedding ignites from a carelessly discarded cigarette. The damage is done before the victim becomes conscious and aware of what has happened.

An estimated 150,000 persons in this country are seriously burned each year in accidents in which their clothing is set on fire. Practically every day our newspapers record the tragic burns sustained by children and elderly people—those least able to defend themselves in such emergencies.

Two months ago I received a letter from a father in Minnesota whose five-and-a-half-year-old daughter caught fire when a sparkler ignited her 65 percent dacron and 35 percent cotton dress.

Let me quote from his letter:

> The danger involved in wearing a garment of this type could be compared to a combat soldier carrying a hand grenade with the safety pin pulled, unaware that his safety and existence could be counted in seconds.

Again, he talks about the suffering of his child:

> Unless one has witnessed the terrible pain involved with burns, one would be unaware of the agony and the time it takes to recover after being burned. I know that people eventually recover after being burned, but I find it remarkable that they remain normal after suffering as intensely and as long as they do.

A month ago the tragedy of death by burning struck home with me when I learned of the untimely death of two of my lifelong friends in Minnesota who had devoted so many hours to my political career.

In fact, the gentleman was my campaign chairman in one of my counties. His wife was severely burned when her bedclothing ignited. He was overcome trying to rescue her after having saved his youngest child.

There are already many evidences of properly treated materials that are resistant to fire. Others could be made safe by the application of special finishes and interweaving of inherently flame retardant fibers.

The Veterans' Administration has conducted extensive tests in the use of a special flame retardant treatment for linens and patient wearing apparel in several of its hospitals. So successful have been the results that the VA has made these treated fabrics available to all its facilities.

The General Services Administration has also amended its specifications for upholstered furniture to incorporate treatment for fire re-

tardancy for certain fabrics. New inherently flame-retardant materials have been used in the astronauts' space suits, are part of the apparel of our military and firefighters, and are even used by race car drivers. In other words, flame retardant material in one form or another is available for practically all our fabric needs.

Yet, how is it that an American manufacturer now produces the flame-retardant fiber used to make the garments which are sold for the protection of English children, while none of these items are being made available to the American consumer?

We cannot afford irresponsibility of this nature and, judging from what has been happening in the legal field lately, neither can the manufacturers.

Our system of law has developed a standard of liability based on the concept of a reasonably prudent manufacturer which points to the gross inadequacy of the Federal regulations. As Arnold B. Elkind of the American Trial Lawyers Association pointed out in a December 1966 speech:

> Compliance with the Flammable Fabrics Act does not automatically mean that industry is exonerated from liability to a consumer who sustains an injury as a result of the burning of a garment.

Manufacturers have been reluctant to provide flame-retardant protection to the American consumer up to now because flameproofing is expensive and they feel that the public will not pay the added cost, nor will they like the feel of the product.

Even if the cost is a deterrent, even if the texture seems overly stiff to some people for some uses, this lifesaving material should be made available to the public.

I believe that our technology can and should develop better and cheaper processes for producing flame retardant fabrics. It is too bad that lives are lost, people of all ages suffer, and property is destroyed for the sake of saving the money it would take to properly and effectively protect the public.

As the President said in his message on consumer safety: "The cost is very small in comparison to the savings in safety and peace of mind."

Gentlemen, I believe our reponsibility is clear and we must not shrink from it.

I had hoped that Robert W. Klemer, president of the Faribault Woolen Mill Co., who has been a longtime proponent of the Flammable Fabrics Act, would have been able to come and testify before the committee, but his schedule prevented it.

I would like to present at this time a statement that he sent me in support of the legislation. I would also like to include a letter from Mr. James M. Hammack, fire prevention engineer of the city of Los Angeles.

Mr. Moss. Is there objection?

Hearing none, the statement and letter will be incorporated immediately following your statement in the record of the hearing.

(The material referred to follows:)

STATEMENT OF ROBERT W. KLEMER, PRESIDENT, FARIBAULT WOOLEN MILL CO., FARIBAULT, MINN.

The Flammable Fabrics Act of 1954 has been in effect for approximately twelve years and during that time it has been increasingly apparent that the coverage and protection provided by the Act was too narrow in scope and that certain fibers

and certain fabric constructions, which, when combined produce a highly flammable textile, were going into consumer channels in great quantities and represented a substantial household hazard of which few consumers were aware.

The original Act, covering fabrics going only into apparel, was initiated at that time because the so-called "explosive" sweater was being marketed and had resulted in a rash of serious burn injuries to the wearers. This sweater was a type of garment made from viscose rayon yarns and had a fluffy brushed surface. For some reason, the authors of this Bill could not foresee that this same type of construction might go into fabrics other than those used for apparel with the result that many articles containing a similarly hazardous combination of fiber and fabric construction have gone into household textiles not covered by the Act.

Since 1954, there has been a great new range of synthetic fibers come into consumer fabrics and common usage. While these newer types of fibers do have varying degrees of resistance to burning, they are generally more satisfactory and have a substantially greater resistance than such fibers as the cellulosic types such as viscose rayons. It was imperative and fortunate that the chemical industry did develop these newer types of synthetics as the greatly increased demands of expanding populations all over the world required an increased supply of fiber which could not have been provided by the natural fibers, wool, cotton, linen, and silk, which have been in use for centuries.

Most any fiber which exists today is entirely satifactory, *provided* it is used in the proper type of fabric for which it is best suited. There are two principal characteristics which contribute to the flammability or non-flammability of any particular fabric. The first, and most important, is the fiber itself. Wool and mod-acrylic fibers have proven to have the greatest resistance to burning. A step below these would be such fibers as the acrylics, nylons and polyesters. Those rating lowest in resistance to burning are the cellulosic fibers such as viscose rayon and cotton.

The second principal factor contributing to the flammability, or resistance to it, of a fabric, is the construction of the fabric itself.

The highest degree of resistance to burning would exist in fabrics having a flat surface, hard twisted yarns, a high texture and tight weave. A fabric, which would ignite and burn the most rapidly, would have a napped, brushed or raised surface, low twist yarns and a loose or open texture and weave. In other words, there would be a large volume of air within the body of this fabric itself.

Although there may be a few exceptions, one can generalize by stating that the only fabrics on the market today which would represent a consumer hazard due to the flammability, would be only those fabrics which are a combination of the most flammable types of fibers with the most flammable types of fabric construction. Any change in either of these two factors would improve the resistance to burning of any given fabric. It can be dramatically demonstrated that the combination of a cellulosic fiber with a napped or brushed surface and an open or loose texture is highly flammable and subject to ignition from a mere spark. This is exactly the condition which existed back in 1954 with the "explosive" sweaters and which pointed up the need for consumer protection legislation such as this.

The obvious remedy and solution to the existing situation is the extension of the existing Flammable Fabrics Act to cover other household textiles, such as bedding, which this Bill proposes. There is no sound reason for limiting the requirements of this Act to only one class of fabric when similar hazards exist in other classes. Practical and reasonable testing procedures can be established for determination of the flammable characteristics of a fabric and safe limits determined.

Textiles made from the most flammable types of fibers in combination with the most flammable types of fabric construction, as previously described, can be given chemical treatments during or after their manufacture to greatly increase the flame resistance. In extreme cases, it might be necessary to regulate against the use of certain fibers in combination with certain types of fabric construction, but, today, there exists such a wide spectrum of other types of fibers which could be used safely and satisfactorily in such fabrics, that it would create no great hardship to the consuming public.

In those cases, where substituting a superior fiber for a more flammable one might result in a slightly higher price, it would be more than compensated by the fact that the consumer would receive a product of higher quality and of substantially improved serviceability and longer life.

CITY OF LOS ANGELES, CALIF., *April 4, 1967.*

HON. ALBERT H. QUIE,
Congress of the United States,
House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN QUIE: Thank you so much for giving me an opportunity to express and opinion on H.R. 5474. You are, indeed, correct in stating that I have great interest in legislation concerning the fire retardant treatment of bedding materials. I would be pleased to have you read the following statement into the record at the hearing conducted by the Subcommittee on Commerce and Finance of the House Interstate and Foreign Commerce Committee.

"During the calendar year 1966, 21 people in the city of Los Angeles died as a direct cause of smoking in bed. To this date, in 1967, 15 persons have lost their lives from the same cause. These statistics are appalling when considered as only a minute portion of the total life loss by this cause throughout the nation. Such statistics serve as an indictment of both the fire protection profession as well as society in general.

"The Los Angeles Fire Department has been engaged in a program to reduce or eliminate these appalling statistics for several years. We have reached a definite conclusion through our research program conducted in cooperation with Southern California industry, that all bedding materials can be manufactured in a manner to be almost non-flammable. Mattresses can be manufactured that cannot be ignited by the most common ignition source, the cigarette. Mattress pads, blankets, and other coverings can be fabricated from synthetic materials which will not propagate flame away from the source of heat, and, therefore, present little or no hazard from burning. Further work is required to reach a satisfactory fire retardant treatment for ordinary cotton bed sheets. We feel that this problem will also be solved in the near future.

"H.R. 5474 is both realistic and timely. Its author is to be commended upon his concern for the safety of the people.

"The Los Angeles Fire Department urges the adoption of H.R. 5474."

If I can be of any further assistance in effecting the passage of this legislation, I shall be happy to respond.

Very truly yours,

RAYMOND M. HILL,
Chief Engineer and General Manager.
JAMES M. HAMMACK,
Fire Prevention Engineer.

Mr. Moss. I want to thank you and compliment you on an excellent statement.

Mr. Keith, have you any questions?

Mr. KEITH. Thank you, Mr. Chairman.

You said on page 2, in the concluding line, "as a result the Food and Drug Administration decided to conduct tests to see if the blankets should be banned" and you let it drop there. Did they let it drop, too?

Mr. QUIE. Yes. So far we don't have the legislation, as we hope we will have as a result of these hearings.

Mr. KEITH. Do you know what the tests showed?

Mr. QUIE. The tests showed that these blankets burst into flame quickly when their outer edge is touched by a lighted match.

Mr. KEITH. The Food and Drug Administration tests showed that?

Mr. QUIE. That is right.

Mr. KEITH. I assume they are going to testify later on as to the results of their experiments.

Mr. QUIE. I don't know. I know the Public Health Service is going to testify.

Mr. KEITH. You mentioned on page 4 of your statement that we have an American manufacturer whose products are sold in England but they are not available to the American consumer.

Is that so?

Mr. QUIE. That is right.

Mr. KEITH. No American consumer can buy those products?

Mr. QUIE. It isn't being produced for the American consumer. It is going to England.

Mr. KEITH. Their catalog doesn't indicate that they are for sale in this country?

Mr. QUIE. That is right.

Mr. KEITH. You say in the next few lines:

> Compliance with the Flammable Fabrics Act does not automatically mean that an industry is exonerated from liability to a consumer who sustains an injury as a result of the burning of a garment.

That is quoting Mr. Elkind.

Would you care to comment on the liability to a consumer of a manufacturer under the present statute?

Mr. QUIE. Mr. Keith, not being an attorney, I don't feel that I could. But to me this was an interesting speech he had made at that time and I wanted to bring it to your attention. You may want to look into that.

Mr. KEITH. I would think that these hearings would develop that point, as to what the current liability is of the manufacturer.

Mr. Moss. Would you like to have the record held at this point and have a memorandum prepared dealing with the specific question of liability included in the record?

Mr. KEITH. I think it would be helpful.

Mr. Moss. That will be done.

(The information requested follows:)

MEMORANDUM OF LAW ON EFFECT OF FLAMMABLE FABRICS ACT ON COMMON LAW LIABILITY

DEPARTMENT OF COMMERCE,
Washington, D.C., May 18, 1967.

Mr. WILLIAM J. DIXON,
Staff Member,
House Interstate and Foreign Commerce Committee.

Following Dr. Hollomon's testimony before the House Interstate and Foreign Commerce Committee, you asked that I prepare an opinion on the question of whether compliance with the standards presently contained in the Flammable Fabrics Act exonerate a manufacturer or a retailer from liability to a consumer who is injured as a result of the burning of a garment. The attached Memorandum of Law states my opinion on the question. The staff of the Federal Trade Commission concurs therewith in the conclusions expressed in the last paragraph.

You will note that I have not been able to find a case that exactly answers your question. Accordingly, I believe that it would be advisable for the Committee to state its intentions on this issue when it reports out amendments to the Flammable Fabrics Act.

ROBERT B. ELLERT,
Assistant General Counsel for Science and Technology.

MEMORANDUM OF LAW

This memorandum examines the question of whether compliance with the standards presently contained in the Flammable Fabrics Act (15 U.S.C. 1191, et seq.) exonerates a manufacturer or a retailer from liability to a consumer who sustains an injury as a result of the burning of a garment.

A considerable number of cases has been before the courts involving claims for injuries alleged to have resulted from the ignition of flammable fabrics or garments. 80 A.L.R. 2d 703; 14 *Am. Jur. Proof of Facts* 1. The right of plaintiffs to recover for such injuries is well established (see *e.g., Frank R. Jelleff, Inc. v. Braden*, 98 App. D.C. 180, 233 F. 2d 671 (1956). As in other cases of products

liability, several theories of recovery are available to a plaintiff injuried by a flammable fabric which ignites. The usual form of action is breach of warranty against the retailer, the manufacturer, or both. This warranty may be express, but in most cases it is an implied warranty of fitness for use.

An examination of cases decided both before and after the enactment of the Flammable Fabrics Act indicates that the right of plaintiffs to recover for injuries caused by flammable fabrics and garments has not been affected by it, although lack of knowledge as to the existence of the Act has been held to have a bearing upon the question of due care by a defendant (see *Chapman* case, below). No instance has been found wherein a defendant was exonerated from liability by mere virtue of compliance with the Flammable Fabrics Act.

An unsuccessful attempt to raise compliance with the Act as a defense was made in the case of *Frank R. Jelleff, Inc.* v. *Braden*, 98 App. D.C. 180, 233 F. 2d 671, 63 A.L.R. 2d 400 (1956). This was an action by a buyer against a retail dealer for breach of warranty in the sale of a "brunch" coat which ignited when it came in contact with a stove. The trial court's award of $65,000 damages was upheld on appeal despite the defendant's contention that the garment complied with the applicable standard of the Flammable Fabrics Act. This case is not conclusive on this point, however, since the court did not specifically hold that such compliance would not constitute a defense. Instead, the court noted that the injury occurred two years before the statute was to take effect, and held that neither the Act nor its standard applied to the garment in question.

In *Knab* v. *Alden's Irving Park Inc.*, 49 111 App. 2d 371, 199 N.E. 2d 815 (1964) a suit was brought against a retailer for injuries sustained when a boy's trousers ignited. A lower court judgment against the plaintiff was reversed and remanded. It was not established whether the garment in question actually complied with the Flammable Fabrics Act, however such compliance is indicated at least by the defendant's criticism of the testimony of one of plaintiff's expert witnesses. The witness had performed certain burn rate tests on a remnant of the garment in question. The defendant was critical of this testimony because the expert had not used "the tests prescribed by the federal government in its laws relating to the testing of flammable material," the inference being that the garment would have passed this type of test.

Compliance with the Flammable Fabrics Act also seems to have been present in *Martin* v. *J.C. Penney Co.*, 50 Wash. 2d 560, 313 P.2d 689 (1957), involving a shirt which ignited on contact with an electric stove. Judgment for the plaintiff was upheld despite the fact that the defendant put in expert testimony to show that the shirt was made from cotton gingham, and was not inherently dangerous for reasonable use as wearing apparel. Compliance with the Act was not specifically asserted by the defendant, but may be inferred from the facts reported.

Compliance with the standards contained in the Flammable Fabrics Act was not conclusively established in the *Jelleff*, *Knab*, or *Martin* cases discussed above. The tenor of the decisions, however, indicates that compliance, *per se*, would not constitute an absolute defense to the plaintiff's right to recover.

In *Chapman* v. *Brown*, 198 F. Supp. 78 (D.C. Hawaii, 1961), affirmed 304 F.2d 149, the plaintiff was injured when a hula skirt ignited. Judgment for the plaintiff was affirmed. The trial court instructed the jury that the Flammable Fabrics Act could not provide a basis for recovery by the plaintiff except insofar as knowledge, or lack thereof, of the Act would have a bearing upon the question of due care or credibility of a party or witness. In view of the final judgment for the plaintiff, the appeal court did not deal with the correctness of this instruction in its decision.

SUMMARY AND CONCLUSION

The Flammable Fabrics Act by its terms confers no specific immunity from civil actions to manufacturers, or retailers, of fabrics which comply with the standards contained therein. The decided cases indicate that plaintiffs have recovered damages since the effective date of the Act on the same basis as obtained prior to its enactment. The *Chapman* case, above, indicates that a plaintiff may use violation of the Act as evidence of negligence or breach of warranty. See *Products Liability Based Upon Violation of Statutory Standards*, 64 Mich. Law Review 1388 (May 1966).

Mr. KEITH. I have no further questions.

I concur with the remarks of the chairman as to the thoughtful and enlightening testimony which you have offered.

Mr. QUIE. Thank you.

Mr. MOSS. Mr. Blanton?

Mr. BLANTON. Thank you, Mr. Chairman.

Mr. Quie, without getting too technical, what is the speed of combustion that is in the present law?

Mr. QUIE. Again, these are technical questions that I think you ought to ask the Public Health Service, which is going to give you some demonstrations of the speed of various fabrics.

I believe they could give you the answers to those questions better than I could.

Mr. MOSS. We will have available to the committee very shortly the technical experts who can supply that information.

Mr. BLANTON. I have some other questions but I will withhold them until we get the technical people.

Mr. MOSS. Mr. Watkins?

Mr. WATKINS. Thank you, Mr. Chairman.

My distinguished colleague, Mr. Quie, I want to thank you for your statement. I am a new member of this committee. I want to thank you for your report. It is certainly most constructive. I shall study it. I thank you for the time you have put in.

I know what a job it is to prepare a statement such as this. I shall study your report with great interest.

Mr. QUIE. Thank you.

Mr. MOSS. Thank you, Mr. Quie.

Mr. QUIE. Thank you, Mr. Chairman.

Mr. MOSS. We will hear next from our colleague from Texas, the Honorable O. C. Fisher. You may proceed Mr. Fisher.

STATEMENT OF HON. O. C. FISHER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. FISHER. Mr. Chairman, in connection with H.R. 5654, and other legislation on the same subject, I respectfully urge your committee to give appropriate consideration to H.R. 7920, which I introduced on April 4, 1967. This measure would amend section 2 of the Flammable Fabrics Act (15 U.S.C. 1191; 67 Stat. 111), by adding to its safety features.

I call the committee's attention to the fact that H.R. 7920 applies to "interior furnishings" for use in homes, offices, and places of assembly or in vehicles or vessels for air or surface transportation, including automobiles, buses, railroad cars, boats, ships, and airplanes.

I also call attention to a significant provision in section 4 of the bill, which deals with the requirement that the Secretary of Commerce shall prescribe flammability standards (including conditions and manner of testing) for articles of wearing apparel, and fabrics and related materials used in the manufacture of such articles.

H.R. 7920 adds the following:

> In order to promote the safety of persons being transported in vehicles or vessels for air or surface transportation, including, but not limited to, automobiles, buses, railroad cars, boats, ships, and airplanes, the Secretary shall on the basis of laboratory investigations carried out under his direction prescribe and publish in the Federal Register minimum standards, including standards of flammability and fiber content, for furnishings made in while or in part of a fabric or related material and ordinarily manufactured, sold, or intended for use in such vehicles or vessels.

Mr. Chairman, it is believed that when this provision is put into effect and properly implemented, it will add significantly to the safety feature of the legislation. It is of the highest importance that laboratory investigations be made with respect to the flammability content of the various fibers that are used in the interior furnishings of the various modes of transportation which are enumerated. When that is done, there is every reason to believe, based upon tests and experience, that the minimum standards which are prescribed will include a requirement for the extensive use of natural fibers.

Let us examine for a moment the pressing need for this type of protection for the public. The National Fire Protection Association assembled figures on automobile accidents, and found that about 400,000 vehicles had fires in 1964, with a loss of $37 million in property damage largely attributable to the ignition of flames following the wrecks.

It seems that almost every time we read of a plane crash, where there is a chance to escape following impact, the one big hazard is fire which so often sweeps through the passenger sections.

With respect to both cars and planes, what is being done to avoid or reduce the incidences of fire? In the case of auto accidents, we are told by the National Safety Council that 90.6 percent are caused by improper driving. But after these accidents occur, even those that are preventable, what can be done to minimize the losses that are traceable to the outbreak of fires?

The answer is: equip cars, planes, and ships with more nonflammable upholsteries, carpets, draperies, and other fabrics. Natural wool and mohair are universally recognized as the fibers which are the most nonflammable of any others used for these purposes. The use of more of these fibers would undoubtedly save thousands of lives every year. It is just that simple.

Only a few years ago most of these fabrics were composed of blends which included substantial amounts of nonflammable fibers of wool and mohair. But more recently the manufacturers, with an eye on higher profits, have turned to the manmade flammable fabrics.

Evidences of the cost of this switch-over, in terms of human lives and property losses, have mounted. The Metropolitan Life Insurance Co., recently estimated that 13 percent of fire fatalities among its insurers were traceable to fires caused by ignition of bedding, upholsteries, curtains, and draperies. This includes homes as well as vehicles, planes, and ships.

In a recent plane crash, it was discovered that fire and noxious smoke and the burning of inside furnishings was a major cause of the resulting deaths. This resulted in the CAB recommending to the FAA that revised standards be imposed for inside furnishings of commercial aircraft. That study is now in progress. I have been assured by FAA that an accelerated research program to improve those standards is now receiving a thorough analysis. This includes a study of: First, "Flammability and Smoke Characteristics of Interior Aircraft Materials"; second, Thermal Criteria for Interior Materials"; and third, "Hazardous Combustible Characteristics of Cabin Interior Material."

This alertness on the part of FAA is most commendable. Let us hope that automobile and ship manufacturers will do the same.

Mr. Felix J. Colangelo, president of the Wool Bureau, recently stated:

A flame applied to wool will cause it to burn, but when the flame is removed wool does not support combustion nor does it melt like synthetic fibers which can cause serious skin burns.

The same principle applies to mohair.

This same authority concluded that no fiber possesses greater natural resistance than wool to flaming, melting, and the emission of noxious smoke.

While it is true that certain flame resistance treatments may be applied to the cellulosic fibers, they are quite expensive and many of them require renewal after each washing or dry cleaning.

The publication, Consumer Reports, described wool as "a fiber which is difficult to ignite and will not support a flame."

Consumer Bulletin reported in October of 1965 that the melting of synthetic fibers and sticking to the skin "can be more dangerous than the flame itself because the resulting burns can be so difficult to treat," and cited the National Safety Council for authority.

Many other authorities could be cited confirming the fact that both wool and mohair are nonflammable. A more universal use of these fibers, even when blended with a lesser content of synthetics, would undoubtedly provide the greatest answer to the fire hazard problem than any other single action that can be taken.

Mr. Chairman, the loss of 49,000 lives on our highways last year has served to arouse the American people to the need for more safety devices in the construction of cars, planes, and ships. In both the House and Senate extensive hearings have recently been concluded on this subject. Legislation enacted gives the Secretary of Commerce discretionary authority to set Federal safety standards for new cars.

The matter of reducing the incidences of fire in our homes and in transportation has been neglected too long. It has been firmly established that the only real answer to this hazard is the use of nonflammable fibers in the interiors of our homes, offices, automobiles, airplanes, and ships. The employment of this simple solution will save literally thousands of American lives every year.

It is well known that synthetics are notoriously flammable, and when used as a major part of the composition of these materials create a dangerous safety factor. On the other hand, as I have explained, it is well known and generally admitted that such fabrics, when composed in the main of wool or mohair fibers, are relatively nonflammable; that is, while such fibers will, of course, burn under certain conditions, they are not combustible and the fire danger is reduced to a minimum.

On this subject, my attention has been called to a recent letter written by Dr. Paul F. Wallace, medical director, Sebring Races, Sebring, Fla., in which the writer referred to the use of nylon gloves by race drivers. Referring to a magazine article, Dr. Wallace said:

I do have one criticism—you had pictured a driver wearing gloves with nylon mesh backing. This is a very dangerous situation and almost worse than having no gloves at all. Unfortunately, the backs of the hands and particularly over the knuckles, are the one place that we cannot adequately repair surgically. Gloves such as these will actually melt in a fire and cause further damage by the hot nylon.

It would seem imperative that in considering safety factors for automobiles, boats, airplanes, and in homes, a major portion of the fabrics contained in interior uses be composed of nonflammable wool and mohair. Here is a chance to reduce injuries from fire and save untold numbers of lives which are lost in fires each year.

Mr. Moss. Thank you Mr. Fisher. If there are no questions, we will hear next the testimony of Mr. Flynt, sponsor of H.R. 6142.

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

Mr. FLYNT. Mr. Chairman and members of the Subcommittee on Commerce and Finance of the House Committee on Interstate and Foreign Commerce, I would like to urge your favorable consideration of H.R. 6142, a bill introduced by me to amend the Flammable Fabrics Act so as to clarify certain provisions of that act. My colleague, the Honorable Charles Raper Jonas of North Carolina, is the author of H.R. 7471, which is identical to my bill. He has asked me to submit this testimony for both of us, and has authorized me to tell you that he supports my bill.

H.R. 6142 would amend section 4(a) of the Flammable Fabrics Act (15 U.S.C. 1193) to require the Federal Trade Commission to test a garment for flammability by applying the test to the uncovered or exposed part of the garment as it was intended to be worn.

Let me say that neither Mr. Jonas nor I have any desire to permit the manufacture of any garment which is dangerous. The Flammable Fabrics Act was enacted in 1953 to remove from the marketplace certain highly flammable products such as torch sweaters and cowboy chaps. The act has accomplished this purpose.

However, I feel that the language of H.R. 6142 is necessary in view of a proposed change in rule 6 of the rules and regulations under the Flammable Fabrics Act. The Federal Trade Commission has proposed a new paragraph (e) to rule 6 which would read as follows:

> Where an article of wearing apparel has a raised-fiber surface which is intended for use as a covered or unexposed part of the article of wearing apparel but the article of wearing apparel is, because of its design and construction, capable of being worn with the raised-fiber surface which, when tested according to the procedures prescribed by section 4(a) of the act, is so highly flammable as to be dangerous when worn by individuals shall be considered to be an uncovered or exposed part of the article of wearing apparel. Examples of the type of products as to which testing of raised-fiber surface is required are athletic shirts or so-called sweat shirts with a raised fiber inner side.

Mr. Chairman, the implementation of this rule change would be harmful to the manufacturer and would not be in the public interest. My testimony will deal with sweat shirts because this product has been singled out in the proposed rule change.

The raised-fiber, or fleeced side of a sweat shirt was devised to provide a soft and comfortable surface next to the skin as well as to increase the basic insulating properties of the fabric. It is by its very nature designed to be and is a covered and unexposed part of the article of wearing apparel. It is no more normal to wear a sweat shirt inside out than it would be to wear a fur-lined jacket or wool sweater inside out.

It should be pointed out that the language of H.R. 6142 carries the same meaning as the language of rule 1(a)(5) of the rules and regulations under the Flammable Fabrics Act which reads:

> The terms "uncovered or exposed part" of an article of wearing apparel as used in section 4(a) of the Act, mean that part of such article of apparel which might during normal wear be open to flame or other means of ignition.

Sweat shirts when tested for flammability meet the requirement of this rule which is not only a proper interpretation of section 4(a) of the Flammable Fabrics Act, but is also a fair and sensible approach to the problem of possible flammability of sweat shirts with a raised-fiber side. H.R. 6142 would place the intent of this rule into the statute.

Sweat shirts have been manufactured for 40 years or more with no proven incident of any catching on fire. A manufacturer of these garments in my hometown has made them continuously for 32 years, and there has been no instance of any of his products catching on fire during that time.

The estimated cost of fireproofing the fleece-like liner of a sweat shirt could increase the cost of such garments as much as $1 each, retail. At a time when all of us should be making every effort to prevent escalation of consumer prices, if the standards are changed to require fireproofing of the insides of sweat shirts, it could result in an increased consumer cost of $1 per garment on some garments which sell for $2 or less. One reported survey indicates that perhaps as many as 1 percent of the people who wear sweat shirts wear them reversed and wear them with the inside out. If a very few nonconformists wear them this way, I do not think that we should regulate for their special benefit and against the public interest.

I hope that you will favorably report H.R. 6142. It will clarify by statute the intent of section 4(a) of the Flammable Fabrics Act and insure adherence to reasonable procedures of testing fabrics for flammability.

Mr. Moss. Thank you for your testimony Mr. Flynt.

Mr. Flynt. Thank you for the opportunity Mr. Chairman.

Mr. Moss. The next witness will be J. Herbert Hollomon, Acting Under Secretary of the Department of Commerce.

STATEMENT OF HON. J. HERBERT HOLLOMON, ACTING UNDER SECRETARY, DEPARTMENT OF COMMERCE; ACCOMPANIED BY JAMES V. RYAN, ASSISTANT CHIEF, FIRE RESEARCH ACTIVITY, NATIONAL BUREAU OF STANDARDS; MALCOLM W. JENSEN, CHIEF, OFFICE OF WEIGHTS AND MEASURES, NATIONAL BUREAU OF STANDARDS; AND GORDON CHRISTENSON, ASSISTANT GENERAL COUNSEL, DEPARTMENT OF COMMERCE

Mr. Hollomon. Good morning. I have with me this morning on my left, Mr. Ryan, Assistant Chief of the Fire Research Activity, National Bureau of Standards; Mr. Jensen, on his left, who is responsible for the engineering standards activity of the National Bureau of Standards; and, on my right, Mr. Gordon Christenson, who is Assistant General Counsel of the Department of Commerce.

Mr. Chairman, I have two statements this morning relevant to the two issues that are before your committee. The first has to do with the flammable fabrics.

Thank you for this opportunity to testify about the bills now before your subcommittee to amend the Flammable Fabrics Act. I urge enactment of H.R. 5654, introduced by Chairman Staggers of this committee.

We note the interest and support of Chairman Moss of this subcommittee, and Congressmen Murphy, Rooney, Dingell, and Adams,

each of whom introduced an identical bill (H.R. 6025, H.R. 5780, H.R. 5938, H.R. 6114, and H.R. 6421).

The Flammable Fabrics Act now prohibits the introduction or movement in interstate commerce of articles of wearing apparel and certain fabrics which fail to pass specified tests of flammability.

While this act has eliminated certain highly flammable materials, it needs amendment to close gaps in the present law. The President, in his message on protecting the American consumer of February 1967, asked for a national commission on product safety to consider household product safety generally. However, he recommended immediate action to strengthen the Flammable Fabrics Act.

He said:

> There is one gap, however, in existing legislation which is so glaring that action should not be delayed. The Flammable Fabrics Act of 1953 has done much to keep extremely flammable clothing out of the Nation's stores.
>
> But the standard of flammability established under that Act is deficient. The Act does not cover many articles of clothing which can be consumed by fire almost instantaneously. It is narrowly restricted to certain wearing apparel. It does not extend to such everyday items as baby blankets, drapes, carpets and upholstery fabrics.

Let me explain precisely what the deficiencies in this 14-year-old law mean to the public.

First. The present law covers only certain articles of wearing apparel and fabrics from which they are made. This means that the public does not have legal protection for such things as blankets, bedding, drapes, carpets, upholstery, and other products and materials even when they are unreasonably flammable.

The present coverage of wearing apparel also is limited because it does not include hats, gloves, footwear, and inner linings.

Second. The present act writes into law two existing commercial standards—one for the flammability of clothing textiles and the other for general-purpose vinyl film. These standards, now 14 years old, were based on consensus within the industry.

They have presented extreme hazards, but we will have an estimated 2,000 deaths annually related to the combustion of clothing. There is no administrative authority to revise these standards in light of new and improved technology or test methods.

Any time even a slight technical change is desirable to afford better protection, Congress must amend the act and consider each specific technical amendment.

Third. The present law binds us to past needs and makes no provision for new needs in the protection afforded all citizens. There is no administrative authority to issue new flammability standards which enable the Government to respond more promptly to the changing needs of industry and the consumer, the introduction of new fabrics and materials, and the impact of new technology.

There is no present way to introduce new standards as they are needed, short of congressional action in each case.

The proposed amendment we favor would remedy these deficiencies by:

Authorizing improvement in present standards for wearing apparel.

Extending coverage of the act to include—but only after a specific finding of need in a particular class of materials or prod-

ucts—interior furnishings such as bedding, draperies, upholstery, and other flammable materials found in the home, office, or public places.

Authorizing administrative issuance of new standards of flammability to allow the Government to respond more quickly after a need is found to set reasonable and feasible safety levels for flammability and other harmful effects.

Recognizing the need for more information on the causes and effects of fires involving relevant flammable materials.

Authorizing research into flammability and its reduction.

Let me now turn to each of these specific objectives.

Improving standards: Studies have been underway at the National Bureau of Standards to determine the efficacy of existing standards. These studies, conducted in cooperation with representatives of industry, trade associations, fire protection agencies, consumer groups, and others, indicate that the present standards may need revision.

Standards-setting involves both fact and judgment. It is a fact that most materials meeting the requirements of the present standards are still flammable. A judgment still has to be made as to whether they unreasonably endanger lives and property.

Although some data exist on this problem, as I will mention later, these data do not identify the specific materials involved and thus do not yet permit us to make a judgment about how much improvement is possible.

We are currently attempting, in cooperation with the Public Health Service, to broaden our knowledge of the role of textiles in burn deaths. Under this program, the Public Health Service gives us samples of clothing involved in fires.

Thus far, 48 cases in the Denver area have been studied. Our tests indicate that all of the fabrics furnished from these casualties were capable of meeting the present standards for flammability, but the clothing caught fire nonetheless—for whatever reason.

One important piece of information also emerges from this study. Families in the lowest income bracket are more frequently burned because they are more frequently exposed to fire.

Whereas the more affluent have automatic disposals, trash pickup, central heating and the like, the poor tend to have space heaters with flames, trash burners in the back yard, and matches for lighting readily available.

We also find that children, the disabled, and the elderly, are particularly susceptible to burn injury. The point here is that our clothes, our environment and our way of living interact. We cannot ignore this interaction in getting at the problem of how to reduce the severity of clothing fires.

No one is suggesting at this time that we know enough to make clothes 100 percent fireproof and thus eliminate all clothing fires—however caused—any more than we would advocate going without clothes to avoid catching on fire.

We do believe, however, that our technology can and should be put to use positively to reduce the risk of accidental clothing fires. If a standard is feasible and it is needed because it would make a significant difference in the loss of life and injury rates, then I believe we have a public duty to issue such a standard.

I think we can take reasonable and sound steps to help solve the problem. The National Bureau of Standards for many years has been conducting a limited research program in the flammability of clothing textiles.

Recent work has been directed toward better measurement of the heat transfer from burning materials to materials which simulate skin. This program is particularly important because a person's skin need not actually burn for death or injury to occur.

Skin tissue can be destroyed by the heat and flames from burning materials adjacent to it. Terrible injuries can be caused by synthetic fabrics which melt. We hope to be able to develop measurement techniques that would permit us to determine objectively how heat is transferred from a burning or melting material to the skin simulant.

We believe heat transfer may be a more significant factor than that measured by the test provided for in the present standard; namely, the minimum time for a flame to spread over the test material.

Once we have information on heat transfer, we may find that the current standard is obsolete—because to protect people better we may need different standards for different products based on how heat affects the body rather than on how fast a fabric catches fire and spreads.

BROADER COVERAGE

The 1953 act attests to national interest in protecting the U.S. public against death and injury resulting from flammability of clothing fabrics. At that time, the Congress and the public became aroused by the disclosure of the sale of garments which when ignited made their wearers veritable human torches.

Although these cases were particularly spectacular, the flammability of such fabric differs only in degree from others in common use in clothing. The fact is that the human body is not flammable, and fire can spread over a person's body only by means of the combustion of what he is wearing.

It is not justified to continue to exclude from coverage under the 1953 act such articles of clothing as gloves, footwear and hats. The original act protects principally against extensive burns to the body, which are the most frequent cause of burn deaths, but severe burns on the head, hands or feet, although usually not fatal, can extract an extreme toll in terms of disfigurement and loss of functional utility.

I do not believe there is justification for failing to extend the scope of the law to all items of wearing apparel. The proposal before you, however, would not extend the existing standard to such items automatically. New standards for such items must be developed, with the proper procedural safeguards.

There is also a need for extending the coverage under this act to fabrics used in interior furnishings. While building codes throughout the country limit the flammability of the materials, construction, and finish of the building, there is little or no such control over the furnishings later put into the building.

It is apparent that most serious fires develop through the initial ignition of the furnishings, such as curtains and drapes or other materials, of which fabrics are a prominent part.

In addition, burning and smoldering interior furnishings are a principal source of the noxious and poisonous gases responsible for

the large number of fire deaths which are not burn-related. New standards for interior furnishing could be issued only after a specific need had been demonstrated.

Here, the Government would have to establish that an unreasonable risk of injury or death exists with respect to the particular item. A fair procedure is required.

ADMINISTRATIVE ISSUANCE OF STANDARDS

The Secretary of Commerce would be given the authority to issue appropriate new or revised standards of flammability for articles of wearing apparel, constituent fabrics, and related materials under the rulemaking requirements of the Administrative Procedure Act.

This means adequate notice and opportunity for all interested parties to participate in the process. The Secretary also would be authorized to issue new standards of flammability for a particular type of interior furnishing, or its constituent fabrics or related materials, only when he determines, after public notice and opportunity for interested parties to participate in the process, that a flammability standard is needed for that particular interior furnishing in order to protect the public.

Our intent is that the issuance of a particular standard likewise would be subject to a fair and reasonable opportunity for private parties to participate.

A standard would become effective 6 months after its date of issuance unless the Secretary finds, for good cause, that an earlier or later effective date is in the public interest. He is required to publish his reasons for any such earlier or later date.

The present standards of flammability, now incorporated into the Flammable Fabrics Act by reference, would remain in effect—applying only to the article of wearing apparel or fabric to which they now apply—until they were specifically modified or superseded by new standards issued by the Secretary, and, parenthetically, under an appropriate process which I have indicated under the Administrative Procedure Act.

Mr. KEITH. Would the Administrative Procedure Act provide for an appeal to the courts for any ruling which you might make?

Mr. HOLLOMON. Always for abuse, as I understand it.

Mr. KEITH. Only for abuse of the act?

Mr. CHRISTENSON. As it is currently written, the Administrative Procedure Act applying to this proposed legislation would permit an appeal to the courts for any action under the proposed legislation which is arbitrary. There is no specific provision in this act for an appeal from the decision, itself.

So there would have to be an element of arbitrariness under the Administrative Procedure Act, as I understand it, before the appeal would stand.

Mr. KEITH. I would imagine that other witnesses will comment on that at a later date, so I will waive any further questioning.

Mr. MOSS. If you would like, I think it might be helpful to have counsel discuss this at this point in the record with the Associate Counsel of the Department in order that clarification occur now.

Mr. Dixon?

Mr. DIXON. Is it your position, Mr. Christenson, that you would not have judicial review of a final order unless it is arbitrary and capricious, an abuse of discretion?

Mr. CHRISTENSON. That is my understanding of the application of the Administrative Procedure Act to this act.

Mr. DIXON. And the distinction you would make between this and other recent legislation, such as the Motor Vehicle Safety Act, is that that act has a specific provision in it for judicial review?

Mr. CHRISTENSON. Yes.

Mr. KEITH. I would like to know why you don't provide for a court procedure in this act as we have in other acts.

Mr. CHRISTENSON. It is certainly possible that that could be done. I don't think we have a closed mind on that.

Mr. HOLLOMON. Our viewpoint on the subject is the following: There are two safeguards proposed in this legislation. One is that there be a demonstrable need which has to be made public and which has to be justified before the process of developing the standard can be initiated.

This is different. This is an additional safeguard that was not, for example, in the traffic safety legislation. I would like to make that point clear. In other words, you did not write into the traffic safety legislation the explicit determination of need.

What the Congress found, as I understand that legislation, was that the need was determined by the Congress, itself, on a broad basis. You said to the executive branch: "Go forward."

We are proposing an intermediate safeguard in this particular legislation in that since the information is so diffuse, it is such a difficult, technical subject, we say there must be first a determination of need, that is there be unreasonable risk or hazard involved in these materials, and that that be made public and subject to a public process.

Mr. KEITH. Which public process does not include the court?

Mr. HOLLOMON. That part of the public process does not include court review. Of course, it is available to the Congress and to the public in the determination.

The second safeguard is that, upon such finding, there would be initiated the development of an appropriate standard to meet that requirement. That process is the one to which we referred under the Administrative Procedure Act.

Mr. Moss. And that would then be subject to all of the procedural safeguards of notice and hearing which is afforded under the Administrative Procedure Act.

Mr. HOLLOMON. Absolutely, sir.

Mr. Moss. And then subject to appeal if it were to be contended that the action was arbitrary or capricious.

Mr. HOLLOMON. Yes, sir. That is as I understand the law.

Mr. KEITH. Is there a similar approach contained in any legislation in existence at the moment?

Is this about what obtain insofar as existing legislation on this subject?

Mr. HOLLOMON. Do you mean with regard to fabrics, Mr. Congressman, or are we talking about the broad range of mandatory standards?

Mr. KEITH. I have in mind existing legislation with regard to fabric safety. Does this simply extend the philosophy of such legislation or is this a new philosophy?

Mr. HOLLOMON. No, sir, it does not extend the same philosophy. The present situation is that the Congress has written into law a technical standard and it is one of the few instances that I know of in which we have frozen into a law the inability to make technological changes of measuring devices, to improve the situation when new materials become available.

I am not an expert on all other fields, but this is, to me, an amazing situation. We have frozen into law a standard so we have to come back to the Congress for even minute changes in the language with respect to the development or improvement of a standard.

I know of no other such case as the present law.

For example, the only amendment to this act changed the lower limit under the flammability test from 4 to 3½ seconds. We had to come back to the Congress for an amendment to make that change.

Mr. KEITH. From 4 to 3½ seconds?

Mr. HOLLOMON. Yes.

Mr. KEITH. The law said 4 seconds?

Mr. HOLLOMON. Yes, sir, in detail, and how it was to be tested. The test, frankly, is not a very good one.

Mr. KEITH. Basically, I would concur that wherever possible legislation should be written so that that kind of attention on the part of the Congress is not required.

Mr. HOLLOMON. That is the way the present law is written. The law specifies implicitly that the process is the congressional process, the process of hearing, finding, and changing the law.

Mr. KEITH. At the same time, I would point out that to shield industry and the consumer alike from arbitrary and capricious action, there should be spelled out, wherever necessary and how often necessary, the procedures to overcome it, and it should be simple and easily understood, and easily followed.

Mr. HOLLOMON. Yes, sir. We had felt that the application of the Administrative Procedure Act, which allows court review of arbitrary or capricious actions on the part of the Secretary, was an adequate safeguard to the issuance of the standards. Of course, it is up to this committee.

Mr. KEITH. It would occur to me, Mr. Chairman, that we have touched on this enough at this time, but probably we will hear more later on.

Mr. MOSS. We will indeed.

Mr. KEITH. May I just ask one further question? What is the date of the Administrative Procedure Act?

Mr. HOLLOMON. 1946. There have been amendments since that time, however, as recently as last year, as a matter of fact.

Mr. KEITH. I have one other question which may not be appropriate at this time but which may shed some light upon the seriousness with which you have considered this problem. Is this the first legislation that has been offered to the Congress on amending the act in this respect that you know of, the first serious effort?

Mr. HOLLOMON. By the administration?

Mr. KEITH. By any administration.

Mr. HOLLOMON. As far as I know, and my memory goes back only 5 years, this is the first initiative by the administration to remedy the act. There has been a great deal of interest in the Congress, both with respect to queries put to the Department of Commerce and legislation which has been introduced.

You heard of one such bill by Congressman Quie. There are others which you are considering. There has been initiative and interest by the Federal Trade Commission because they act, in part, under the present legislation.

Mr. KEITH. It would seem in view of the case you are making and which Mr. Quie made that there should have been legislation offered in earlier years. This isn't suddenly something that has come to your attention.

Has there been a history of legislation attempting to obtain the same objectives over a period of years, or is this something which has come up relatively recently?

Mr. HOLLOMON. I would say there has been a history of interest in flammable fabrics but nothing with, let us say, the push or the drive to change the legislation as is now evident by this committee's concern with the problem.

Mr. KEITH. Thank you, Mr. Chairman.

Mr. Moss. You may continue.

Mr. HOLLOMON. Although the standards adopted and promulgated by the Secretary would be mandatory, we would anticipate strong industry participation in the development of standards authorized by the amendment.

The National Bureau of Standards frequently is called upon to develop or evaluate test methods and testing equipment that form the technical basis for standards. The Bureau usually take advantage of the expertise of an involved industry and consults with appropriate representatives during such evaluation.

For example, test procedures to determine the flammability of mats used in Government buildings were established by the General Services Administration after NBS studies of test procedures recommended by industry.

Mr. KEITH. I might point out that it is very easy to get industry to cooperate when the purchaser is determining the standards, in this case the Government. But it is quite difficult when you are doing it for a broad market, nationwide, to get industry and Government together with those standards.

Mr. HOLLOMON. That is correct.

The proposed legislation also clarifies the enforcement authority of the Federal Trade Commission over sales, or deliveries after a sale or shipment in interstate commerce. The Commission would be given specific authority to require records of commercial transactions covering commodities subject to the act. The Chairman of the Federal Trade Commission is here this morning to testify.

The authority of the Federal Trade Commission to prevent the importation of noncomforming commodities would be clarified and strengthened.

More information: If there is one fact that stands out clearly in statistical information on death and injury due to specific flammable materials, it is how little we really know about the subject.

There is enough known, however, to show that there is a general problem and that it urgently needs attention. For example:

The Public Health Service estimates that 150,000 persons suffer burn injuries anually, and that over 72,000 deaths were caused by fire and explosion during the 10-year period 1956–65.

Mr. Lee, Assistant Secretary of HEW, is also here this morning.

A 2-year Kansas study revealed 130 deaths from burns and explosions in the home, of which 36 deaths involved clothing ignition.

In 1966, 18 cities reported a total of 81 deaths from bedding flame or asphyxiation.

Based on newspaper and other reports of actual deaths, of a total of 3,459 fire deaths reported, 317 deaths were caused by clothing burns and 234 deaths were caused by burns resulting from furnishings.

Here are some of the things we need to know and understand better:

How and why various materials burn.

The effects of heat, fumes, and other combustion phenomena on adjacent humans or property.

What can be done, under varying conditions, to minimize the harmful effects of combustion on life and property.

How materials can be made less flammable.

Investigations and research would be specifically authorized by H.R. 5654. The Secretary of Health, Education, and Welfare, in cooperation with the Secretary of Commerce, would study and investigate deaths, injuries, and economic losses resulting from the accidental burning of products, plastics, and related materials and submit annually a report to the President and to the Congress.

The Secretary of Commerce, in cooperation with other appropriate groups, would be authorized to conduct research into the flammability of products, fabrics, and materials, conduct feasibility studies on the reduction of flammability, develop flammability test techniques, and offer appropriate flammability-test training.

The Secretary of Commerce would be required annually to report to the Congress the results of his research activities.

In addition to H.R. 5654 and similar measures, your subcommittee is considering H.R. 5474 and H.R. 6142, two narrower bills to amend the Flammable Fabrics Act. H.R. 5474 would extend the present flammability standards for wearing apparel to bedding as well.

H.R. 6142 would limit enforcement of the act by requiring consideration only of the manner in which particular items of clothing are intended to be worn, even when a substantial segment of the public is wearing such clothing in a potentially more hazardous manner.

We favor the enactment of H.R. 5654, which carries out the President's message, rather than H.R. 5474 or H.R. 6142.

We doubt that mere extension of the present statutory flammability standard to bedding is a reasonable or appropriate means for protecting the public.

If bedding standards are needed, they should be adapted expressly to bedding flammability problems. Enactment of the broader bill would render H.R. 5474 unnecessary, because the various bedding items which it lists would all be "interior furnishings."

Thus, upon a showing of need, and after due process, the Secretary would be authorized to issue appropriate flammability standards for bedding and bedding materials.

We oppose H.R. 6142, which would limit the Federal Trade Commission's authority to consider the manner in which clothing is actually worn in enforcing flammability standards,as an unnecessary and undesirable limitation.

We believe the Commission's existing authority should be improved, rather than limited. Naturally, the Commission must exercise discretion in determining when clothing is being worn in a potentially more hazardous manner, but we have confidence in the Commission's ability to do so competently.

In any event, H.R. 5654 offers the advantage that flammability standards could be expressly modified by the Secretary to provide clarification or a more appropriate test procedure for any unusual situations that might develop, considering the expected use of the fabric.

Mr. Chairman, I cannot state that enactment of H.R. 5654 will lead to immediate and startling reductions in the rates of death and injury from burns. However, I can state that this legislation will authorize the soundest possible approach to this complex and little understood problem.

It will enable the Federal Government to learn more through investigation and research, and to issue constructive and practicable flammability standards, when they are needed in the most expeditious manner possible consistent with due process and the state of the art.

H.R. 5654 will strengthen the Flammable Fabrics Act, as the President has recommended, and I strongly urge its enactment.

Mr. Moss. I would like to ask that the committee withhold questions and permit testimony on the Safety Commission legislation, which I think is closely interrelated to the flammable products proposals.

If there is no objection, that will be the procedure.

Before moving on, Dr. Hollomon, I would like to acknowledge the presence of Chairman Staggers of the parent committee.

We welcome you and thank you for being here, Mr. Chairman.

Have you any statement or observation you would like to make at this time?

Mr. STAGGERS. Thank you, Mr. Chairman. I just came to sit in briefly. I would like to thank Mr. Hollomon for his statement. It is very good on a very sensitive subject that so many in the Nation are interested in on both sides of the question.

I know it is one that will have to be weighed carefully by all of those who come in contact with it in any way in order to come to some solution.

Thank you, Mr. Chairman.

Mr. HOLLOMON. Thank you, Mr. Chairman.

Mr. Moss. Now, you may proceed with the additional portion of your testimony, Mr. Hollomon.

Mr. HOLLOMON. I appreciate this opportunity to speak in behalf of House Joint Resolution 280, to establish a National Commission on Product Safety. I am pleased to note that identical bills have been introduced by Congressmen Rooney and Dingell (H.J. Res. 340 and H.J. Res. 357, respectively).

This bill is in general accord with the President's recommendation to Congress in the consumer protection message. The bill recognizes the need for further inquiry into two aspects of product safety: The right of the consumer to be protected from unreasonable risk of bodily harm and the right of the manufacturer to a reasonable degree of uniformity in safety regulations.

This bill calls for the establishment of a Commission of seven members, appointed by the President, and charged with the task of carrying out "a comprehensive study and investigation of the scope and adequacy of measures now employed to protect consumers against unreasonable risk of injuries which may be caused by hazardous household products."

In carrying out this mandate, the Commission will be directed to consider the identification of unreasonably hazardous products, the protection afforded by industry, self-regulation, the protection afforded by warranty and common law, and the protection afforded by Federal, State, and local law.

The Commission is to submit a final report and recommendations by January 1, 1969.

The available figures indicate that thousands of injuries in the home are caused by household products. The victims of these accidents often are young children. We do not know at this time how best to provide adequate protection, but we realize that the problem is compounded by nonuniform legal requirements for the manufacturer in the various States.

One thing is abundantly clear: some way must be found to lessen the incidence of these injuries or to prevent unreasonably hazardous household products from reaching the consumer in the first place.

Let me emphasize one point at the outset: It is unlikely that all household products could be made completely safe without making many of them useless.

For example, who would want a lawnmower that could never injure wayward fingers or toes, but could not cut grass? Also, experience has shown that education alone is not adequate to prevent injuries, though it is certainly necessary to help.

The consumer has the right to expect that everything feasible has been done to design into each household product an optimum balance between safety and utility.

The vigor and inventiveness of American industry has provided a wealth of products designed to make homelife more pleasant and comfortable. The consumer invests much of his resources to make the home a better place to live. He has bought televisions and hi-fi's for entertainment, washers and vacuum sweepers for cleanliness, skillets and stoves that can be told when to start and stop cooking, earth tillers for gardening, mowers for beautiful lawns, and a host of other products for his hobbies.

Most manufacturers are not indifferent to the safety of the products they offer to the consumer for his use. Many producers carry on extensive programs related to the safety of products.

When the product cannot be made both completely safe and capable of performing its useful function, warning labels and detailed instructions often are provided.

Yet, the fact remains that hundreds of thousands are injured every year in or about their homes. The U.S. Public Health Service has estimated that nearly 1 million injuries were associated with only 12 types of products or appliances. Four of these—power mowers, washing machines, cooking utensils, and power tools—accounted for over 400,000 injuries.

Admittedly some consumers ignore labels, or do not follow instructions or even do not read them. However, one group of experts has found many products to be unreasonably hazardous for home use.

I refer to a special report prepared for the Senate Committee on Commerce by Consumers Union. Since this report was published in full in the Congressional Record, I will mention its contents only briefly.

For the 10-year period 1956–66, Consumers Union found that nearly 400 products were unacceptable. Of these, over 150 electronic products, appliances, toys, and tools had electrical hazards, over 100 products, had mechanical hazards, and the others had sharp edges, were poisonous, represented fire hazards, or contained some other hazardous characteristic.

The detailed listing included 77 lawnmowers, 11 power tools, and 64 cooking utensils. This report is helpful, but it is only a beginning to the problem of identifying by analysis those products which do present unreasonable risks of harm in the home. The legislation before you would carry this process of identification to its conclusion.

The legislation also calls for study of the extent to which self-regulation by industry affords protection. The most optimistic consumer assumes that some nebulous "they" would not allow unsafe products on the market. For some, "they" are the manufacturers, all of them. For others, "they" are retail merchants, Government, or consumers organizations.

It should be emphasized that the Federal Government does not regulate products for sale on the open market, with a very few exceptions. This bill does not presuppose that the Federal Government should regulate such products or that it should not. I agree that no such preconception should be placed on the work of the Commission. They should be left free to consider first what the needs are and then how best to meet those needs.

The chief protection now afforded the consumer is the body of engineering or product standards, when they are applied in the manufacture of products. These standards are traditionally voluntary.

A good standard provides a basis for determining whether or not a product meets specified levels of safety. A good safety standard should not be confused with other standards for performance of intended function, basic composition, or process of manufacture.

In 1964, the Commerce Department's Advisory Panel on Engineering and Commodity Standards identified nearly 14,000 voluntary standards. The number of these that are primarily safety standards was not established.

I note that household appliances are not covered by any large number of safety standards identified in that Panel's study. Although many standards contribute to safety, for example in assuring performance of function, it is not clear when human safety is built into these standards through identifiable levels of safety related to per-

formance. The legislation before you would consider the adequacy of such standard in self-regulation.

Product standards are developed by many groups and organizations. However, these can be divided into two categories: public or Government, and private.

Government organizations at all levels have developed numerous product standards. However, most of the Government product standards are written for Federal, State, or local government procurement. They are not mean to apply to products manufactured for sale to the public on the open market. Only in a few areas covered by specific legislation has the Federal Government set mandatory safety standards for general consumer products. These include auto brake fluid, seat belts, refrigerator door latches, and the new standards for the entire automobile.

For private standards development, as with Government standards, the first requirement is or should be to establish the purpose and need for a standard. One purpose may be public safety. Thousands of specifications are written by individual companies for their purchasing or in-house operations. The consumer is affected by these specifications only insofar as they have an influence on the final product.

Other private standards are set by the committee process. The committee may be that of a corporation, a scientific or technical society, a trade association, or an association specializing in standards.

The most serious question raised about the committee process is one of involvement—whether the affected interests, including the consumer, participate in developing the standard by which a product is measured.

Although some standardization organizations require a balance of consumer, producer, and general interest in their committees, these consumers are often industrial consumers which use raw materials or intermediate products. The end user is more often not represented.

The manufacturers of household products is a consumer of materials and components. But the final consumer should also be represented in work on the standard for products he buys for his home.

There are many more standards for components such as electrical wire, plastics, and insulation than there are for household products. Whether the household consumer is adequately represented in the development of private household product standards and whether adequate standards exist are questions which the Commission should explore.

The protection of the consumer need not rely entirely on standards and education. The consumer has recourse to the courts.

The legislation will direct the Commission to study the protection afforded by common law in the States, including the relationship of product warranty to such protection. By bringing suit to recover damages, an injured user asks the court to establish liability and assess damages caused by a hazardous product.

However, State laws are not uniform. We should have information on the nature and extent of liability for hazardous products in each of our States. Complicated legal situations are becoming commonplace as more appliances come with new houses.

Technically, the homeowner buys the product from the builder who buys it from a distributor, often in another county, who buys it from a manufacturer frequently in another State. Is warranty the best protection for the ultimate purchaser?

What standards for legal liability should be set and by whom? Should there be a Federal statute on product liability? Whom may the injured consumer sue, where, and in what court? The proposed legislation will help find answers to these questions by directing the Commission to study Federal, State, and local laws relating to the protection of consumers against hazardous products.

I would urge the Commission to give close attention to the question of manufacturers liability.

There is a good analogy and precedent for raising the question of manufacturers' liability. When it was recognized that the employer was responsible for reasonable diligence in providing safe working conditions for his employees, the workmen's compensation laws were enacted.

An important result of the workmen's compensation laws has been that the workingman does not directly bear the total financial burden of medical treatment. But more important is the fact that the incidence and severity of on-the-job injuries have been sharply reduced.

National Safety Council figures showed a fourfold reduction in the average number of disabling working hours per employee between 1926 and 1952. The death rate was reduced by 17 percent from 1955–65.

The legal question of liability traditionally has been left to State law. Certainly, Federal and State relationships should receive the attention of the Commission. Not to be forgotten in addition is the effect of existing nonuniform laws on industry.

The prospect of industry operating under a single uniform statute on liability rather than under 50 or more should receive serious consideration.

No study of accidental injury can be meaningful without a careful and detailed examination of the hazards and the injuries resulting therefrom. To do this the Commission will need the testimony of those knowledgeable in the field. The legislation will give the Commission the authority to take testimony and obtain information that it needs.

In giving its cooperation and information to the Commission, industry has every right to expect that such information as may be of a proprietary nature will not be used or disclosed so as to provide assistance to their competitors in the marketplace. The legislation requires that this safeguard be maintained.

Finally, there may be some minor drafting changes in the legislation which may be desirable for the purpose of avoiding unnecessary restrictions on the scope of the Commission's authority. We would be happy to work with the committee staff on those, with your permission, Mr. Chairman.

In summary, the joint resolution provides for detailed study of the national problem by a well constituted Commission. It establishes guidelines for the areas to be included and for the information to be assembled.

It gives the Commission the authority and power necessary to obtain that information and charges them to avoid improper disclosures of proprietary or privileged information. These guidelines are appropriate for the conduct of the very important tasks of the Commission.

I urge the prompt enactment of this legislation. The work of the proposed Commission will set the course of the nation for many years to come in product safety.

Mr. Moss. Thank you.

Mr. Keith?

Mr. KEITH. It is a very interesting statement. I am impressed by the argument which you have outlined. I think I have a few questions.

The genesis of this House Joint Resolution 280, is it something that the President had in his message?

Mr. HOLLOMON. Yes.

Mr. KEITH. And this is a way of implementing it other than the legislation which your Department filed?

Mr. HOLLOMON. This is part of the President's message having to do with the protection of the American consumer was before the Congress and the President gave this Commission his endorsement in the message on the protection of the consumer.

Mr. KEITH. Would you describe the Consumers Union for me?

Mr. HOLLOMON. I will do the best I can.

The Consumers Union, as I understand it, is a private, nonprofit organization made up of members and gets its funds from the sale of publications and from memberships. It serves the purpose of evaluating and publishing its own determinations of product performance and product safety for the benefit of the American consumer.

Mr. KEITH. Have you any information as to the source of its funds?

Mr. HOLLOMON. I don't have specific information, Mr. Congressman. I believe the source of its funds to be the sale of publications and fees of membership.

Mr. KEITH. What is the name of its primary publication?

Mr. HOLLOMON. Consumers Report.

Mr. KEITH. What is the fee for the Consumers Report? Have you any idea?

Mr. RYAN. The last figure I saw was $3.50 a year, but that was several years ago.

Mr. HOLLOMON. I really don't know, but it is something of the order of $5 a year, I would imagine.

Mr. KEITH. You say on page 4:

> It should be emphasized that the Federal Government does not regulate products for sale in the open market with a very few exceptions.

Are those the exceptions that you referred to later on?

Mr. HOLLOMON. Other than those that have to do with health and drugs, health treatment and food. I was talking then about other products. It does have regulation, of course, of agricultural products, foods, drugs, cosmetics.

This is the broad class of products.

Mr. KEITH. In thinking of cosmetics, is that a case where the Congress legislated in detail, and where it might have been better for the industry and for the consumer if Congress had not done so.

Mr. HOLLOMON. Yes, sir.

Mr. KEITH. We have a Federal commission concerned generally with the consumer interest as you have outlined on page 6, do we not?

Mr. HOLLOMON. We have a Consumers Advisory Committee which was, I believe, established by the President to give him advice on general consumer affairs. I do not believe that there is any congressionally authorized commission reporting back both to the Congress and to the executive branch, a public body of the sort we are recommending in this legislation, Mr. Congressman.

Mr. KEITH. There would be a correlation, then, of the activities of the organization established by the Executive order and one that we would establish in this legislation?

Mr. HOLLOMON. I believe that Advisory Council would provide information and testimony and data that they have available for the benefit of this Commission. I think that would be entirely appropriate, Mr. Congressman.

Mr. KEITH. Has that council been asked to testify on this legislation?

Mr. Moss. The council has not been asked to testify, nor has the council requested the opportunity to testify. The council is advisory to the President and was created by Executive order for the purpose of advising the President.

Mr. KEITH. Wouldn't they, if they are on their toes, be able to make a contribution to this subject?

Mr. Moss. I would rather regard them as awaiting the desires of the committee. I think they would be most happy to cooperate. However, we will have appearing, in addition to Dr. Hollomon, Dr. Philip Lee, Assistant Secretary for Health and Scientific Affairs of the Department of Health, Education, and Welfare; Dr. Richard E. Marland, director, injury control program of the National Center for Urban and Industrial Health of the Department of Health, Education, and Welfare; and the Honorable Paul Rand Dixon, Chairman of the Federal Trade Commission, which was deemed to be broadly representative of the agencies in Government concerned with the problems of consumers.

Mr. KEITH. All of these agencies are interested in setting up, however, a more direct relationship between the consumer and the Congress than presently exists?

Mr. Moss. That is correct.

Mr. HOLLOMON. Mr. Keith, if I may just add a comment, I think the problem with respect to the safety of these products that are used in the home by all of us, is one on which there have been many proposals.

For example, you could come out today and make a finding in the Congress, which I think may be justifiable or not, that there ought to be mandatory standards set for lawnmowers, as an example.

That would be a piecemeal approach to the problem. It may not be the best approach to the problem. What I think this Commission would do would be to provide for the Congress the alternatives other than going one little problem at a time.

In other words, if we had a major catastrophe to come Congressman's child or executive's child who was killed by a product, the tendency would be to act on that issue.

We feel that this whole question of product safety, to benefit both the manufacturer and the consumer, ought to be looked at as a whole and to see what the alternatives are to dealing with the problems. It is for that reason that we support the Commission and do not come forward with a specific piece of legislation, asking the Congress to support.

Mr. Moss. If the gentleman will yield, I think at this point the question of the genesis of the Product Safety Commission can be placed in proper perspective. It originated in the Senate under the sponsorship of Senator Magnuson, Senator Cotton, and Senator Brewster.

Hearings were held during this first session of the 90th Congress. The President endorsed the initiative taken by the Senators and included an endorsement of the Commission in his consumer message to the Congress.

Mr. HOLLOMON. That is correct, sir.

Thank you for the clarification.

Mr. KEITH. Mr. Chairman, I have no further questions at this point.

Mr. MOSS. Mr. Blanton.

Mr. BLANTON. Thank you, Mr. Chairman.

Dr. Hollomon, I would like to go back to your statement on the flammable fabrics, if agreeable with the chairman.

I think I am the only man on the subcommittee from the cotton country and, naturally, we are concerned with the effect on the textile industry, specifically, the cotton industry. Do you plan to have industry advisers in connection with the overall administration of this act?

Mr. HOLLOMON. Our general procedure, Mr. Congressman, is that whenever we develop a standard, and we have had several examples of that which I can speak to explicitly—refrigerator door locks, brake fluids and seat belts—we have participated with the industry, have received their advice, counsel, test methods, before the issuance of a preliminary standard.

That has been the case in every instance. We would intend to do so in every instance under this act.

Mr. BLANTON. I assume that representation will include such groups as retailers, garment manufacturers, from the textile industry, from the cotton industry, and so forth?

Mr. HOLLOMON. Our general procedure is to try to select from the broad scope of American industry and participants a representative group and a group that is technically capable. You have to have both.

I wouldn't want to say whether, in every case, each of the organizations you named would be included, but I can assure you that an appropriate representation from the industry that is affected has to be included.

You see, you have a problem in setting standards in that you both have to set a standard that helps protect the public and, obviously, under which products or fabrics can be manufactured at a reasonable price. That is where the word "unreasonable" risk enters this legislation.

Nobody in the Federal Government has enough wisdom to do this without participation with the technical people who are affected.

Mr. BLANTON. Do you know of any fabric or garment, or other textile item, not now covered by the act which you think would be covered if H.R. 5654 were enacted?

Mr. HOLLOMON. Let us put it this way: Even if I did, I don't think it would be consistent with the thrust of this bill to make such a determination before this committee. I think that the thrust of this bill is that that is a finding that has to be made on the basis of examination and fact, and public record.

Whether I thought so or not is really immaterial. We are not coming before this committee and saying here is a problem; we have to fix it.

What we are coming before this committee and doing is asking here for a process which we will hope, in an appropriate forum, will lead to

the development of the data and information which sets the need. I think it would be most inappropriate for me to influence that process by making such a statement.

Mr. BLANTON. You have to have a need before there is action taken.

Mr. HOLLOMON. That is correct. That is what we have proposed in this legislation, that the need be explicit. You see, you have the following problem: It is clear that there is a problem. It is clear that there is a very large number of deaths, injuries and fires related to flammable materials. The problem is: Is it the flammable material?

Can you make that improvement in this specific case? Or is it a case where somebody dumped gasoline on themselves and essentially the flammable material acted as the wick? You can't solve that problem by dealing with a flammable material.

We try to make the case that there is a broad need, that the standards shouldn't be issued until that need is made explicit. That is what we come before the committee to recommend.

Secondly, we don't want to come before this committee with every small, technical change of test method of procedure, to have to come before the committee and go through a process which may take years in order to make a thoroughly acceptable improvement of a standard.

In other words, we are not making the case, and I think it would be inappropriate if I made the case, that we are going to put cotton textile baby blankets there, because we think there is a problem.

The legislation says you have to make that showing on the record.

Mr. BLANTON. There wouldn't be any need for me to ask you, then, if you have any specific change in mind that needs to be made in the present standards, then, would there?

Mr. HOLLOMON. I have suggested a possible change which I think is most important. The present flammable fabric testing method is essentially one where you hold up a piece of material at a certain angle, light it, and find out how fast it burns.

Whether this causes a damage to the skin or not, due to the deposit of very hot and harmful materials, is not determined in this test method. We are working on such a kind of test. If that test is developed and can be used, we certainly think it ought to be included in such a standard.

But, again, you go through a process. You would have publication in the record and have people say whether this is reasonable or unreasonable.

Mr. BLANTON. Mr. Chairman, I have some other questions. I will submit them in writing.

Mr. MOSS. Would you like to have the record held at this point to receive the written questions and the responses?

Mr. BLANTON. Yes, Mr. Chairman.

Mr. MOSS. Without objection, that will be the order.

(The questions and responses follow:)

DEPARTMENT OF COMMERCE RESPONSES TO WRITTEN QUESTIONS FROM CONGRESSMAN RAY BLANTON

Q. How will you determine the need for a standard?

A. The determination of need will be based mainly on the incidence of deaths or injuries caused by fires starting in the particular items of concern, as determined from death certificates, fire department investigation reports, and medical case histories, particularly from those major hospitals having burn treatment specialists and teams. The determination of need would not be based on estimates

or extrapolations. Of course, the circumstances must have been such that it is clear in each instance that the item in question was the cause of the burn injury or death.

Q. What do you consider an unreasonable risk? Can you give an example?

A. This is not an easy matter. The incidence of death and injury will be the key factor. Exactly how many deaths or injuries will be considered to constitute an unreasonable risk cannot be stated firmly. Examples could include the experiences with the "torch sweaters" and refrigerator doors. In each case, the death toll was of the order of two or three dozen. These numbers were taken as clear indications that many more deaths and injuries would follow if nothing was done. Other factors such as carelessness would have to be considered. In the case of automobile safety, driver carelessness certainly played a part and the death toll reached much higher numbers before the need for action was accepted. In the case of the refrigerator deaths, the carelessness was largely that of children too young to have been taught by their parents to avoid every possible hazard. Therefore, a much lower incidence of death was taken as establishing the need for action. Nonetheless, the development of a standard and regulations came after research to determine what was feasible.

Q. People are continually smoking in bed, going to sleep and setting the sheet, blanket, or mattress on fire. Do you consider this to justify the need for a standard to protect the public against unreasonable risk of injury by fire, or of significant property damage?

A. Although I agree with your general premise, it would not be specific enough to justify the need for a standard. In the course of preparation of my statement made to the subcommittee April 5, 1967, we identified 234 deaths resulting from furnishings fires. This included both bedding and furniture fires. We would need a more detailed analysis of those deaths than was made in preparing the statement. However, that number indicates clearly that this is an area demanding prompt study, as provided for in Sec. 10 of H.R. 5654, in order to establish the detailed facts (as outlined in the response to your first question). The resulting facts would serve as the basis for the determination of whether or not the need for a standard existed.

Mr. Moss. Mr. Watkins.

Mr. WATKINS. Thank you, Mr. Chairman.

Doctor, I again would like to compliment you on a fine report. I do have a few questions. I realize just how important this question is. I wonder and dream about what the cures could be.

It is so hard to take every item and say what a cure would be. For instance, a lawnmower. I recall a ballplayer whose career was ended because of an accident from a lawnmower. He had a mower that was running, he turned the blades up, he wanted to turn a nut, and with the blades running it cut his toes off.

I realize what a real job has to be done here, to try to write cures for everything in this country.

I know of a plastic wastebasket in my own home. The maid was careless and dropped some cigarettes when cleaning up the table and it set the basket afire and the kitchen afire in my own home. We could go on.

There are thousands of accidents of that type. I am concerned here with the following: No. 1, the President, who I am sure is interested in the people of this country being protected from injuries through products, burning, and so on—where did the President get his information from and what caused his interest?

What brought that on? Could you tell me that?

Mr. HOLLOMON. I can't speak for the President.

Mr. WATKINS. What brought this on? Did he have a study committee that was set up by him? This is a broad question.

Mr. HOLLOMON. I think it is a perfectly good query, Mr. Congressman, and I will try to reply to it.

During the last several years, the administration, as well as many Members of the Congress, have become aware of the large number of accidental injuries and property losses resulting from various causes in this country.

The largest single cause of injury and death, and property losses, in the United States is due to traffic accidents. This Congress, this committee, acted on that legislation last year. The single second largest cause of accidents in the United States is associated with fires.

Therefore, within the administration, we have been looking at this problem.

The third largest cause of injuries has to do with harmful products that are on the market.

Mr. WATKINS. I can understand that, Doctor.

Mr. HOLLOMON. Therefore, the President said, "All right, we have a traffic safety law. It is moving forward, with some difficulties but it is moving forward. Now, the question is what do we do about the next one. The next one is fires."

The President has two pieces of legislation before the Congress with respect to fire. One is the amendments to the Flammable Fabrics Act which your committee is considering; the initiative for the original act was taken first by the Congress, not the President, in the 1950's.

The other is the Fire Research and Safety Act which has been heard in the Senate and will be heard by the House Science and Astronautics Committee, because it is largely concerned with research.

Then with the Commission on Product Safety, the President and administration have essentially said there is a problem and we don't know how to solve it.

The initiation taken on the Senate side should provide in a couple of years a possible solution to this problem.

That is how I believe the administration's mind worked on this problem.

Mr. WATKINS. I will accept that.

In the final analysis, you want to create a Commission for Product Safety.

Mr. HOLLOMON. Yes, sir.

Mr. WATKINS. How many members would be on that Commission?

Mr. HOLLOMON. Seven, sir.

Mr. WATKINS. And at what salaries?

Mr. HOLLOMON. $100 a day.

Mr. WATKINS. This Commission would be, I judge, picked from responsible people in the Nation to serve on this committee for a certain number of days or weeks or months.

Mr. HOLLOMON. Yes, sir.

Mr. WATKINS. I would like to ask this further question: Aren't there available agencies, Defense, your Department and other departments, which could make a study of this subject now?

Mr. HOLLOMON. You could charge any given department with this kind of study. I think that the general procedure that Congress often follows is to provide a study which is independent of any department's specific interest, not representing, for example, Commerce's view, HEW's view, or somebody else's view, but, rather clearly a national commission representing all the interests.

Mr. WATKINS. In other words, you don't know of any section of our Government, any department, that we couldn't put this study under and have them do the job? I realize they could have to move into the States.

It is a broad job.

Mr. HOLLOMON. I would recommend to the Congress that this problem is of such broad importance and such significance that the report should be rendered to the President and to the Congress, and not to any other member of the administration.

Mr. WATKINS. Do you think this Commission set up this way would be the best, in your opinion?

Mr. HOLLOMON. Yes, sir; I do.

Mr. WATKINS. Of course, you know we are trying, and I think every Congressman that we have is trying. This is certainly not a political issue in any way. It is a nonpartisan affair. We want to protect the public. It is a tremendous job here.

A lot of thought and research has to go into it. First we ought to know about the States, about the State regulations.

Mr. HOLLOMON. I agree, sir.

Mr. WATKINS. I think perhaps the States should be brought into this, or we should use some method to find out how they feel about this, to see whether we are infringing on State's rights.

I was a State senator for 12 years. I know we were very much interested in this and did have committees at work on it. I believe the study would have to reach way out.

Mr. Moss. Would the gentleman yield?

Mr. WATKINS. Yes, I would, Mr. Chairman.

Mr. Moss. As one of the authors, both of the flammable fabrics proposal and the Product Safety Commission proposal, I think I can offer enlightenment at least as to my intent, and I was not approached by the administration to sponsor either piece of legislation.

On the Flammable Fabrics Act, I suppose my interest was sharpened considerably when on Christmas Eve I lost seven very close friends in a fire in a portion of the district I formerly represented.

I say close friends, friends of many years. Sometime during the night the home, which was probably 80 years old, of frame construction, a very large home, virtually exploded. There was so little to examine that the cause of fire has not been determined.

It might have been faulty wiring, it might have been drapes, it might have been clothing. It could be many things.

Then we all recall just a few weeks ago, I believe in Atlanta, the flash fire in a restaurant. These are not unusual occurrences. They occur with sufficient frequency to clearly illustrate that a need for better standards exists.

Obviously, there is an involvement of State and local government. At the present time, industry is faced with the potential of a proliferation of standards which could create very onerous conditions in the marketing of their products.

Far better that we have a reasonable procedure at the Federal level to set standards which would be generally acceptable, enabling the more efficient marketing without this problem of proliferation.

As to the need for a Product Safety Commission, here we would be seeking facts. We know that there are many products which produce injuries because all we have to do is study available statistics.

Why do they cause injuries? Why are they hazardous? What can be done to overcome them? How efficient are the standards of industry? How efficient are the laws of the various States and the local jurisdictions?

The Commission clearly would be empowered only to seek and assemble the facts, and then to present them to the President and the Congress for whatever disposition we might desire to make of them.

My motivation certainly in the one instance was a concern with the clear evidence of far too wide a use of highly flammable materials. In the other instance, remember, we are using a lot more mechanical equipment in our homes, and we are using new chemical combinations in our homes which, in some instances, taken by themselves, are not dangerous, but in combination with other compounds also commonly used in the home in close proximity can create serious dangers.

It seemed to me that we needed to have the answers as to the why's and wherefor's, and what could be done if we were to discharge our responsibilities.

Mr. WATKINS. Mr. Chairman, thank you. I say this to you, that I concur completely in everything that you have said. I, too, have the same interest that you do. None of my questions directed to the doctor were against that. I was interested in asking the questions about the President's Commission.

I wanted to know who the group would be composed of. I thought perhaps we could bring them in. I would have to think very seriously about setting up commissions.

I realize under your Department, I believe, the automobile standards are being enforced.

Mr. Moss. Would the gentleman yield further on that point?

Mr. WATKINS. Yes, if you will let me just make a point, Mr. Chairman.

Mr. Moss. Certainly.

Mr. WATKINS. You have explained to me, Mr. Chairman, too, that this Commission would have no authority, that it would only make suggestions.

I find we just can't agree with all of these things. For instance, if you check back on the automobile changeover, I think we are moving a little too fast on some of the changes. For instance, I know of one case where they had to move the light a quarter of an inch under the restrictions.

Moving the light a quarter of an inch means that they have to retool and reconstruct the whole thing.

I am in favor of all of this, but I want to try to make up my mind whether this Commission would be the proper approach. The way you explained it, it would be helpful. But we should add the State interest to this.

I don't believe they should have power, but I think all of this should come back to us in the Congress and we should decide. I realize under this law we would.

I think this is such a vast and important subject to this whole Nation, certainly in no way political to anyone.

I am most interested.

I want to know about the power that we are going to give the Commission, perhaps broadening the power to bring in the others who are interested, such as the States.

There is also the President's Committee that has been referred to. And there are the manufacturers.

I don't want to confine it.

I believe I will have to be convinced a little bit. I want to see some rules written for this Commission.

I just feel as if we have to go much deeper into this than just being guided by a Commission that is set up.

I would feel better if this Commission would not become an appointed Government committee, paid by the taxpayers, with a steady job. I believe it should have the public, the State, and everybody concerned on it.

I want to thank the doctor for a fine statement. I believe he has opened up something very dear to every person in America, certainly me.

I appreciate the chairman's interest.

Mr. Moss. If the gentleman will yield, I would like to observe, in the use of a Commission for this type of study, we follow a precedent. For one thing, we avoid the involvement or the inherent interest of a department or established agency for garnering onto themselves more power.

I think we are also able to call upon a much broader spectrum of the public. I would envision the caliber of person appointed to this Commission as being one where the $100 per diem would represent a sacrifice; a degree of public service.

I think that is the type of person that the President would seek. Certainly the committee, when it meets to make up, will have the opportunity to consider any definitive guidelines or rules which would govern the conduct of such Commission.

Mr. WATKINS. Yes, Mr. Chairman. I even go so far in my thinking that even the $100 a day should be waived and it should be expenses paid. I believe there are people in this country who would be glad to serve.

I don't think there are many people who would turn down the President to be on a Commission such as this. I would say the expenses would cover the hotel bills, food, and transportation. There would be many people who would like to serve.

Mr. Moss. Are there further questions?

Mr. Dixon, have you some questions you would like to address at this time?

Mr. DIXON. Yes, sir; just a couple, Mr. Chairman.

Dr. Hollomon, the 48 cases that you mentioned on page 5 of the first statement that you made, what is the time sequence on that? How far back does this study go?

Mr. HOLLOMON. The last few months, I believe, Mr. Dixon. Mr. Lee is here from the Public Health Service and he can give you the details of that.

Mr. DIXON. And you mentioned the Bureau of Standards on the next page and spoke of a limited research program. Is it a limitation because of personnel or money?

Mr. HOLLOMON. Mr. Dixon, there are two limitations. One is that the Congress really never expressed its view that there should be a significant research program in this field in its original legislation.

As a consequence, there was no explicit request to the Congress or the Appropriations Committee for line authority, for proceeding

with funds. They have had to be taken out of the general appropriated funds.

I do not believe it is a limitation of people. I think it is a limitation of money and the direction of the Congress to get on with the job.

Mr. DIXON. I have two points on House Joint Resolution 280. I am anticipating later testimony on this, perhaps, and I don't know if you will be back so I thought I would ask you now.

Mr. HOLLOMON. We can always come back, Mr. Dixon, whenever the committee wishes it.

Mr. DIXON. Have you given any thought to the inclusion of flammable fabrics studies within the commission concept rather than as separate amendments of the Flammable Fabrics Act?

Mr. HOLLOMON. Yes, sir; we have given that a great deal of thought. We believe that the flammable fabrics legislation stands on its merits, that there is need for it, that the question is not one that needs commission study as to whether there is a problem.

We think the Congress has already expressed its direction in that matter. We explicitly stated that we believe this legislation is needed and is justifiable, and can proceed with respect to flammable fabrics.

With respect to the Commission, the Commission's action is to determine what is necessary, whether standards is the solution or liability is the solution. We think that the Commission is a Commission that should report to the Congress and to the President, and explicitly should not include actions that it can take with authority.

That is, to take action. We believe that action is required with respect to flammable fabrics and these are two different questions. Further, we believe the present Flammable Fabrics Act is deficient now on its face and it needs to be changed. Therefore, we do not consider the two matters really related.

Mr. DIXON. And finally, following the colloquy you had with Congressman Watkins and the chairman, when you testified before the other body, you were asked about the Commission.

Mr. HOLLOMON. Yes; I was.

Mr. DIXON. I sense the same concern here, that it is a very general concept. There is nothing in the legislation as drafted to define how this would be made up. Would you care to comment on the makeup of the Commission, as you did in your testimony on the other side?

Mr. HOLLOMON. I will be glad to. First, I think there should only be one or two people from the Federal Government on the Commission, that the remainder of the people should be made up of the public generally or from State-local areas.

I believe that there should be someone on the Commission who has a broad technical background in technology and engineering, who understands the problem of standards and hazards with respect to products, who has industrial experience.

I think we should have someone on the Commission, as the Congressman suggested, who is imaginative and well versed in State and Federal laws; possibly also someone with a broad knowledge of the liability law, with a general, broad legal background.

I am confident that there should be someone on the Commission who knows manufacturing procedures and industrial practices, who knows what it means to modify a product. I think there should be someone on the Commission who is an obvious man of broad-scale public inter-

est, who is a representative leader of the country, who is a public-minded citizen.

I think there should be clearly a vocal representative, a spokesman, perhaps, for the protection of the consumer on this Commission. This would make up six or seven members of the Commission.

What I am saying is that these should be leading people in the country with knowledge of the various aspects of the problem which the Commission is going to have to examine. They should then have an adequate technical staff and hear appropriate testimony, collect records, and come up with recommendations for the Congress to act upon.

Mr. DIXON. Thank you, Doctor Hollomon.

Thank you, Mr. Chairman.

Mr. WATKINS. Mr. Chairman?

Mr. MOSS. Mr. Watkins.

Mr. WATKINS. I question whether seven members are enough. I wonder if it would be asking too much if you would make a breakdown on your estimate even at the basis of $100 a day which would only cover expenses.

Mr. HOLLOMON. The $100 a day——

Mr. WATKINS. For $100 a day, and this Commission is going to work, it is roughly $26,000 a year per person. I question this a little bit. I don't think we can just go at it and have the Commission work 1 day this week and 1 day another.

I think this is too serious, it is too important, for the information we need from this Commission. I wonder if we are right on the amount of men you mention.

Mr. HOLLOMON. I have two comments. One is, if you make a Commission too big, it is difficult to have meetings, it is difficult to get the job done. I think this is a reasonable number of people.

The compensation of these people is expenses and $100 a day. You are not going to get a Commission of the caliber of people which I believe is necessary here who are going to spend anything like full time.

They are going to meet, hopefully, 3 or 4 days a month, several days a month. They will have to depend, to some degree, upon a very highly competent staff. Frankly, I have had experience with a number of commissions, one being the recent Presidential Commission on the Patent System, and I think it is asking too much of the people who give their public service not to give them what turns out to be out-of-pocket expense.

Mr. WATKINS. Doctor, don't let this run through your mind that I am trying to say somebody is going to be overpaid. I am not. I want to look at this thing from the standpoint that we properly pay the bill but we would get results. Let me ask you a question here: How long, in your opinion, would it take this Commission to give us a report?

Mr. HOLLOMON. A year and a half, sir.

Mr. WATKINS. You could do it in a year and a half?

Mr. HOLLOMON. Yes, sir.

Mr. WATKINS. How many days in a year would they work?

Mr. HOLLOMON. I would imagine that the Commission, itself, would probably function several days a month.

Mr. WATKINS. Several days a month?

Mr. HOLLOMON. Yes, sir. That would be my guess. The Presidential Commission on the Patent System——

Mr. WATKINS. To cover this whole thing, they will be geniuses.

Mr. HOLLOMON. Yes, sir.

Mr. WATKINS. I think this is very important. Don't think that I am trying to agitate you. I am not.

Mr. HOLLOMON. I don't feel agitated.

Mr. WATKINS. I respect your approach of the Commission. I want you to know that. But I want to know how long we would have to wait for these results.

Mr. HOLLOMON. January 1, 1969, is when this Commission goes out of being.

Mr. WATKINS. I am not opposed to a commission. I am not opposed to any setup, or any responsibility that we can put on any Department of this Government, which can get results.

Mr. KEITH. Will the gentleman yield?

Mr. WATKINS. Yes.

Mr. KEITH. I am not inclined to argue too much with the details about this, but I am sort of concerned.

Where did you get the figure of $2 million? For the SEC Special Study of existing securities legislation, which culminated in the 1964 amendments, it is my recollection that we authorized $750,000 and eventually raised it to $1 million.

How can you justify $2 million?

You look rather despondent.

Mr. HOLLOMON. No, I am not despondent at all, Mr. Keith.

Mr. KEITH. These consumers are taxpayers, too.

Mr. HOLLOMON. You are right; and so am I. I believe comparison can be made with the automation commission, which was, in my view, without the responsibility to recommend specific legislation, specific solutions. As I remember the congressional authority under that act was $1,900,000.

The estimate is an estimate. It is an estimate that came from the original Senate bill. I think this Commission should have the authority to hire an adequate staff, to have transportation available to it, and to authorize explicit studies of problems that they foresee during their life.

I do not believe the $2 million is an excessive amount.

Mr. KEITH. I would suggest that you give the committee a breakdown. If you had these seven members——

Mr. HOLLOMON. That is not the cost.

Mr. KEITH. I understand that. If you had them working full time, it would be, as the gentleman said, $25,000 a year times 7, $175,000 a year, approximately. That leaves a heck of a lot available for other activities, which it seems to me would have to be better justified before you reached the appropriation stage.

I don't want personally to give my approval at this stage of the game to such an expenditure, which to my constituents would appear to be out of line.

Mr. HOLLOMON. Yes, sir. I have two comments.

Would the chairman like us to furnish for the record a breakdown of the costs under this with some precedent for it?

Mr. MOSS. Yes. I was going to suggest that it would be most appropriate to submit a proposed breakdown of the amount involved.

Mr. HOLLOMON. We will be glad to.

Mr. MOSS. I would point out that we are talking about a Commission that would go out of business in 1969. Therefore, any employee would be a short-term employee to the extent they were brought from outside Government, itself.

If they were borrowed from departments and agencies, which is authorized, we would have a different problem. Short-term employment of the highly competent staff required for this type of study would, in some instances, require the payment of a premium salary in order to attract them.

Mr. HOLLOMON. That is right, sir.

Mr. MOSS. If there is no objection, we will hold the record open at this point to receive such a breakdown.

(The information requested follows:)

DEPARTMENT OF COMMERCE BUDGET ANALYSIS FOR THE NATIONAL COMMISSION ON PRODUCT SAFETY (H.J. RES. 280)

This budget analysis for the National Commission on Product Safety is based on the following assumed staffing:

Executive Director (GS–18), $25,890 per annum	1
General Counsel (GS–18), $25,890 per annum	1
HAZARDOUS PRODUCT IDENTIFICATION (GROUP I)	
Group Chief (GS–15), $17,550 per annum	1
Professional staff (GGS–14), $15,106 per annum	1
Professional staff (GS–13), $12,873 per annum	1
INDUSTRY SELF-REGULATION (GROUP II)	
Group Chief (GS–15), $17,500 per annum	1
Profesisonal staff (GS–14), $15,106 per annum	1
Professional staff (GS–13), $12,873 per annum	1
COMMON LAW: LIABILITY (GROUP III)	
Group Chief (GS–15), $17,550 per annum	1
Professional staff (GS–14), $15,106 per annum	2
Professional staff (GS–13), $12,873	2
FEDERAL-STATE-LOCAL RELATIONSHIPS (GROUP IV)	
Group Chief (GS–15), $17,550 per annum	1
Professional staff (GS–14), $15,106 per annum	2
Professional staff (GS–13), $12,873 per annum	2
Professional staff (GS–12), $10,927 per annum	1
Total, professional staff	19
Clerical (GS–6 average), $5,870 per annum	10
Total	29

It is assumed that Groups III and IV will include several attorneys, one of whom should be available to Group I and another to Group II as part-time Assistant General Counsels.

It is further assumed that the Commission, and staff, will have a working duration of one and one-half years, (Note: see Sec: 5(e) for possible 21 months), and that the Commission members will be paid for 100 days (20 weeks) of time, including travel time between their respective homes and Washington, D.C. or other meeting places.

On the basis of the above assumptions, cost estimates are—

Salary and related:	
Commission: 7 × 100 days × $100 per day	$70,000
Staff: 1.5 year × (2×225,890 + 4 × 17,550 + 6 × 15,106 + 6 × 12,873 + 1 × 10,927)	300,800
Clerical: 1.5 year × 10 × 5,870	88,000
Staff benefits (retirement, insurance, etc.)	40,000
Total, salary and related	498,800
Travel:	
Commission:	
7 × 100 days × $16 per day (per diem)	16,100
7 × 20 round trips × ($95 [1] per trip + $20 taxis)	32,200
Hearings outside Washington, D.C.—assume 4 trips with 3 Commission members and 3 staff on each, of 5½ days duration:	
Boston	800
Chicago and Denver	1,700
San Francisco and Los Angeles	2,400
Dallas and Atlanta	1,600
Public stenotypist: 70 days at $60 per day	4,200
Miscellaneous staff travel—assume equivalent to 15 round trips, of 2½ days duration, to confer with a Commission member, 15 × ($95 + $40 + $20) ($40=2½ days per diem; $20 for taxis, etc.)	2,400
Supplies	3,600
Printing expenses: Final and interim reports, stationery, questionnaires, etc	30,000
Total, direct operation	572,800
Witness fees and travel: Assume 50 witnesses to hearings in Washington and 15 witnesses each in the various other cities listed above, for a total of 155 witnesses; assume 1 day's time and 250 miles travel (round trip) each: Rates: 0.08 per mile and $4 per day ($12 if overnight) 155 × ($4 + 250 miles × 0.08 per mile)	3,700
Contracts:	
Hazardous product identification—study of the incidence of injuries and relationship to design of the product. A contract with an independent research organization, of appropriate competence, plus provision (contract or reimbursement) for public health agencies (Federal, State, or other) to provide data to the research organization:	
Basic contract	200,000
Public health support	100,000
Industry self-regulation—study of the development and effectiveness of voluntary standards in the production of safe products, including the role of the ultimate consumer in the development of the standards (both what his role has been and should be). A contract, or possibly 2, with appropriate research and consulting organization	150,000
Common law protection—a study of the protection against hazardous products afforded at common law in the States, including the relationships of product warranty, and the possibility of manufacturers liability statutes. A contract, or possibly 2, with appropriate law schools, their faculty, or legal research and consulting organizations	200,000
Federal, State, and local relationships—a study of Federal, State, and local laws relating to the protection afforded the consumers against hazardous products, including scope of coverage, effectiveness of sanctions, adequacy of investigatory powers, uniformity of application, the quality of enforcement. A contract, or possibly 2, with appropriate law schools, schools of Government, their faculty, or legal research and consulting organizations. These might or might not be the same as those doing the study of common law	250,000
Total, contracts	900,000

[1] Assumes the 7 Commission members will make round trips to Washington, for their meetings, that will equal round trips from Chicago, on the average.

Consultants: Assume 100 man-days at $100 per day	$10,000
Reimbursements:	
Federal agencies for personnel details, per sec. 5(c). Assume 3 professional man-years as GS–12 ($11,000) with overhead charges of 90 percent	63,000
General Services Administration—financial and administrative services, per sec. 5(d):	
Rent	24,000
Financial and administrative (payroll, communications, etc.)	22,500
Equipment	7,500
Subtotal, all items	1,603,500
Contingencies:	
5 percent normal	80,200
17 percent to allow for 90 days after Jan. 1, 1969, per sec. 4(e)	272,600
Total	1,956,300

Mr. KEITH. Mr. Chairman, you mentioned going out of business in 1969. I don't recall where I saw that. But you are not trying to convey the impression that it is a 2-year study, are you?

It seems to me it is to go out of business as of January 1, 1969.

Mr. HOLLOMON. That is correct.

Mr. KEITH. Actually, to all intents and purposes, it is about a 1-year study.

Mr. HOLLOMON. A year and a half.

Mr. KEITH. You will not get the legislation, probably, as promptly as July 1.

Mr. HOLLOMON. We would hope so, Mr. Keith.

Mr. KEITH. If it has waited this long for its genesis, it can wait a month or two longer, knowing how the Congress operates. I am sure this committee will take early action.

Mr. WATKINS. Mr. Chairman?

Mr. MOSS. Mr. Watkins.

Mr. WATKINS. My good colleague and friend, Congressman Keith, has brought out the seriousness of the money situation. I believe this is very important. We do have to have all of these details which have been referred to.

Mr. MOSS. We will have the report supplied by the Department.

Are there further questions?

If not, Dr. Hollomon, I want to thank you, Mr. Ryan, Mr. Jensen and Mr. Christenson for your appearance here this morning.

Mr. HOLLOMON. Thank you.

Mr. MOSS. Our next witness will be Dr. Philip R. Lee of the Department of Health, Education, and Welfare.

Would you please more fully identify yourself, Dr. Lee, and your associates, for the record?

STATEMENT OF DR. PHILIP R. LEE, ASSISTANT SECRETARY FOR HEALTH AND SCIENTIFIC AFFAIRS, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE; ACCOMPANIED BY DR. RICHARD E. MARLAND, DIRECTOR, INJURY CONTROL PROGRAM, BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL; WILLIAM WHITE, CHIEF, LIAISON SERVICES, INJURY CONTROL PROGRAM; AND THEODORE ELLENBOGEN, ASSISTANT GENERAL COUNSEL

Dr. LEE. Mr. Chairman, I will be accompanied by Dr. Richard Marland, Chief of the injury control program in the Bureau of Disease Prevention and Environmental Control; Mr. William White, Chief of the Liaison Services, injury control program in the Bureau of Disease Prevention and Environmental Control, and on my left, Mr. Theodore Ellenbogen, who is the Assistant General Counsel.

For the sake of time, Mr. Chairman, I could briefly summarize my statement, rather than reading it, covering both the Department's position with respect to the flammable fabrics legislation which is before this subcommittee, and also relating to the Consumer Protection Commission.

Mr. Moss. Is there any objection to that procedure?

If not, you may proceed.

Dr. LEE. Briefly, Mr. Chairman, the Department strongly supports H.R. 5654, which is before you for consideration, to amend the Flammable Fabrics Act of 1953.

In my statement I make really three essential points. One is the nature of the problem from the health standpoint. There are many people—we estimate 2,000 to 3,000 a year—who are killed as a result of burns of this type.

Second, there are many more people—Representative Quie and also Acting Under Secretary Hollomon cited the figures, approximately 150,000 a year—who get nonfatal burns in accidents of this type.

But it isn't just the numbers. The nature of the burn injury is very important. Unlike many other types of accidental injuries, burns produce severe and often disabling injuries which require prolonged hospital care, plastic surgery, and severe psychological stress, not only on the individual patient but on the family as well.

It is really one of the most trying types of illness for a patient to undergo when he has had a severe burn, particularly a second- or third-degree burn.

As a physician, I have been involved in the treatment of patients with this kind of problem. I can understand your own statement about the friends of yours who were burned to death. I know the treatment of patients with burns is also very difficult and emotionally very trying on the physician as well as on the patient and the family. It is a complex medical problem.

The third point that I make in my testimony relates to the role of the Department, and particularly the role of the Public Health Service, in determining the nature of the problem.

Since the establishment of the Division of Accident Prevention initially, and now with the reorganization of the Public Health Service and the establishment of an injury control program, we have

focused on a number of problems related to accidental injury. Actually, the Division of Accident Prevention was not established in the Public Health Service until 1961. It has been only in recent years that scientific knowledge has developed that indicates that accidents are not, in fact, acts of God but that there are causes and effects, and these can be scientifically investigated.

That has been the primary role of the Public Health Service. It has been involved in the past in the investigation of traffic accidents and also in the investigation of burns accidents as we have indicated.

The investigation of burn accidents is aimed at determining causes—not only what physical factors are involved, and what fabrics are particularly hazardous, but also what human factors are concerned. As Dr. Hollomon indicated in his testimony, the individual is very much involved.

There are human factors, there are environmental factors, and factors directly relating to the fabric. All of these elements are investigated.

In my testimony I detail a number of studies currently being supported on the nature of the problem.

We don't have yet, in our view, adequate knowledge of the multiple factors. It wouldn't be necessary to have hearings of this type if we did. It wouldn't be necessary to be supporting legislation that would help to stimulate further research to develop standards that would help solve some of these problems that are before us.

Again, with the activities of the Department in research and in what I would call a public information and professional information role, we work with industry, and with a number of outside groups, to define the nature of the problem.

When we gain information, we exchange that information with people who need to have it, such as those in industry who are producing the fabrics. There have been several conferences in this field.

There is a continuing working relationship between the Public Health Service and industry, also with universities and hospitals, as I indicated, and State and local health departments with respect to this problem.

In summary, we strongly support the proposal. We do believe that the Department has a major and significant role to play, and we think that it will be assisted materially by this legislation. It is, I think, a reasonable approach to the problem.

The bill, as Dr. Hollomon has indicated, will not provide an immediate solution. It will provide the Federal Government with the necessary tools, broader research, investigation and standard-setting authority to help reduce the number of victims of hazardous, flammable fabrics.

With respect to the National Commission on Product Safety, Mr. Chairman, I think that our views strongly support those which Acting Under Secretary Hollomon expressed, and which you also expressed. This, too, is a complex problem.

We know that the necessary work could be done by Executive order or it could be assigned to several branches of the Government, HEW, the Department of Commerce, or others. But after examining the problem in some depth, as Dr. Hollomon indicated, it was our conclusion that the proposal originally made by Senator Magnuson is, in

fact, the best approach to the problem; that an independent commission would provide the best way to examine the complex issues involved.

We would strongly support the work of such a commission and would hope that necessary action would be taken by the Congress so that the commission could be put to work and we could begin to get some of the information that is necessary.

Dr. Hollomon, I think, clearly presented the difficulties of a piecemeal approach to legislation with respect to individual products, such as lawnmowers.

(Dr. Lee's full statement follows:)

STATEMENT OF HON. PHILIP R. LEE, M.D., ASSISTANT SECRETARY FOR HEALTH, AND SCIENTIFIC AFFAIRS, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Mr. Chairman and members of the subcommittee, I appreciate the opportunity to testify today on the bills before your subcommittee which are designed to provide greater protection to consumers from potentially hazardous products.

I welcome your action as a representative of the Department of Health, Education, and Welfare. I welcome it also as a physician who has had intimate knowledge of some of the things we will be talking about today.

One major issue for discussion here is H.R. 5654 and a number of identical bills aimed at expanding the Flammable Fabrics Act of 1953. We wish to urge early Congressional enactment of H.R. 5654.

Acting Under Secretary Hollomon has described the major problems in the existing law. Let me turn my attention to the need for the expansion of the law and the role of the Department of Health, Education, and Welfare in its implementation.

All of us, I am sure, are fully aware of the fact that many fabrics will burn. They will not merely ignite, but sometimes they will burn so rapidly, so intensely and so destructively that escape is well nigh impossible.

But I suspect the American public is only dimly aware of the destructiveness and frequency of such fabric fires. Of the estimated 1,000,000 people burned in the home each year, clothing ignition is involved in about 150,000 cases. Thousands more were burned in fires involving bedding, drapes, upholstery and other household fabrics.

At the University of Michigan, 1,500 severe burn cases have been analyzed since 1964. Of these cases, about 40 percent involved clothing ignitions.

In 1961, a research project was sponsored by the Public Health Service in cooperation with the Tennessee Department of Public Health. Of the 308 burn records studied, 105 patients suffered injuries because their cloting caught on fire.

The death toll alone is shocking—an estimated 2,000 to 3,000 each year.

Deaths from fire rank third—behind traffic accidents and falls—as the chief cause of accidental deaths and injuries in this country.

Many of the victims do not die, but suffer second- and third-degree burns involving 10, 20, and even 30 percent of their bodies. They suffer anguish that can scarcely be described—let alone endured. If they survive, many of them are permanently disabled or disfigured. Often the survival is achieved at the cost of medical and surgical treatments reckoned not in hundreds but in many thousands of dollars—and not in days or weeks but in many months of hospitalization. Every year 100,000 persons are hospitalized for burns, occuping 2 million hospital bed days. Another 3.6 million visits to physicians' offices for treatment of burns are made each year.

In Birmingham, Alabama, the Public Health Service and the Jefferson County Health Department are conducting a retrospective study of burn patients. Of the 1,395 cases analyzed, 179 were listed as due to ignited clothing. Of these 179 clothing ignitions, 37 percent required skin grafts and extensive surgery. Only six percent of those whose clothing did not ignite required extensive surgery.

Perhaps one of the most tragic aspects of these fabric burns is that a large proportion claim as their victims those who are least able to help themselves—the aged, the disabled, the poor, our very young children.

Even though my professional colleagues have remarkable new medical techniques to save the lives of fabric burn victims, and equally remarkable techniques of plastic surgery to repair some of the damage, we can scarcely point with unadulterated pride when we realize that many of those injuries could have been prevented if people had been adequately warned and protected—if more adequate flammability standards had been in effect.

We, of course, are taking steps to help meet the problem. As Acting Under Secretary Hollomon mentioned in his testimony, the Department of Health, Education, and Welfare and the Department of Commerce are working together in an effort to determine the involvement of textiles in burn deaths and injuries. In Denver, the Public Health Service has been conducting extensive field investigations on burn cases. The purpose of these investigations is to document the physical agents and human factors in burn cases involving clothing and fabrics. When available, samples of the clothing being worn at the time of ignition, or duplicate items, are obtained and submitted to the Bureau of Standards for flammability tests. Results of these tests are added to the Public Health Service analysis of methods of prevention, hospital costs, medical treatment and rehabilitation.

Little interest in burn injuries had been shown by industry or Government for a number of years after passage of the Act in 1953. The Public Health Service, which had established an Accident Prevention Division in 1961, requested the National Fire Protection Association to cosponsor a Conference in 1962 on Textile Flammability. This interest grew out of an analysis of the accidental injury problem, which indicated that fires involving clothing and fabrics were an important segment of the total burn problem. The purpose of the conference was to define the nature of the problem of burns resulting from the ignition of clothing, or other materials, such as bedding, draperies, upholstery fabrics and household furnishings. A second conference was held last December at the New York Academy of Medicine, with the purpose of developing a plan of action, using all present knowledge and resources to make flame-retardant fabrics more readily available to the American public.

From the New York Conference evolved the proposal to establish an Information Committee on Fabric Flammability. A preliminary meeting to implement this recommendation was held in New York on February 23 of this year. Eventually, we hope, that committee can serve as a clearinghouse for gathering information on the subject and funneling it to those most vitally concerned.

In addition the Public Health Service has contracted with the University of Michigan Hospital to set up a National Burn Information Center. This unit is collecting case management data on serious burns, their treatment, and their costs as measured in hospitalization, after-effects, and mortality. Cooperating in the program are 9 major burn centers, including the University of Michigan Medical Center and St. Joseph's Mercy Hospital in Ann Arbor; the University of Cincinnati; the Medical College of Virginia and St. Philip's Hospital in Richmond; Cook County Hospital in Chicago; and Brooke Army Hospital in San Antonio. From this study we expect to define better methods of treating burn cases, more realistic appraisals of total cost, and hopefully, more effective methods for prevention. Our new contract for 1967 will allow the Michigan group to investigate cases involving clothing ignition.

We could do much more, but additional legislative authority is sorely needed.

Under H.R. 5654, the Department of Health, Education, and Welfare would be charged with conducting studies and investigations of the deaths, injuries, and property losses caused by fabric fires and with making an annual report to Congress and the President on standards revisions which appear necessary. This mandate for action will provide for a critical review and assessment of the problem. The resulting baseline will be used for measuring morbidity and mortality trends, and will help to evaluate the effectiveness of existing standards. This total effort should stimulate industry to provide better and safer fabrics in the marketplace.

Through the Injury Control Program of the Public Health Service, we can intensify the surveillance operations of health and safety experts who can investigate all the circumstances surrounding fabric fires, determine which fabrics contributed to them, and recommend preventive actions.

Through this and related research, we can—I am confident—determine which products represent the most serious hazards, which require special warnings to the potential consumer, and which perhaps should be banned from the marketplace.

We can promote research on flame-retardant finishes and fabrics.

By defining the problem, we can stimulate the industry to develop materials which are not merely attractive, economical, comfortable, and stylish—but also safe.

Let me assure the Subcommittee that there is no disposition on the part of the Department to be a source of unreasonable harrassment of the fabric industry. We realize its economic problems and appreciate its contributions to the Nation's economy. And we are sure that leaders of that industry realize our obligation to protect—to the fullest degree possible—the health and safety of our people.

We believe that H.R. 5654 provides a reasonable approach to solving the problem of death and injury due to fabric burns. The bill will not provide an immediate solution but it will provide the Federal Government with the necessary tools—broader research, investigation, and standard-setting authority—to help reduce the number of persons who are the victims of hazardous flammable fabrics.

At the same time, we wish to support House Joint Resolution 280, introduced by Mr. Moss, to establish a National Commission on Product Safety.

In his message to the Congress recommending measures for consumer protection, President Johnson pointed out that "the march of technology that has brought unparalleled abundance and opportunity to the consumer has also exposed him to new complexities and hazards." Most of the consumer products on the market today are items which have come into use only within the past three decades. Many of these items were developed within the past ten years. Today we live in an era of rapidly expanding technology, with new products being introduced on the consumer market almost every day.

The President has noted that the findings of a Commission on Product Safety could aid us to "move from a patchwork of regulation to the comprehensive network of safeguards the American consumer deserves."

The need for such a protective network has arisen obviously from spectacular advances in our technology—advances which have given us new tools, new comforts, new and unquestionably useful household products. In tens of millions of American homes, these products are easing our work, reducing drudgery, and brightening our leisure hours.

Increasing numbers of consumer products involve both heat and power. The American home of today is more highly mechanized than were many factories of a generation or so ago. The application of electric energy to lighten household tasks is almost endless. The availability of portable heating devices for use on the move and in recreation is a typical phenomenon of our rising prosperity and increasing leisure time. Today, we can brush our teeth, shine our shoes, carve our meat, and even scratch our backs with power equipment designed for these purposes.

But many household products can be hazardous if improperly designed, or not carefully used. These products—heating appliances, cooking devices, power tools for our home workshops, electric carving knives—will be involved in an estimated one million injuries to Americans this year.

The power lawn mower offers an excellent example: clearly, this new device has been a boon to millions of American homeowners. But this year, barring some miracle, we estimate that about 100,000 Americans will be injured while using it.

We estimate that some 125,000 Americans will be injured while using home machinery in their basement workshops.

One type of the major sources of household injuries is the washing machine equipped with a wringer. This commonplace and useful device exacts an estimated injury toll of 100,000 per year, most of the victims being children.

Heating devices are involved in an estimated 125,000 injuries a year, including 30,000 associated with furnaces, 35,000 with space heaters, and 60,000 with floor furnace grates. Heating devices are potentially hazardous not only because they can inflict burns, but also because they often are involved in carbon monoxide poisonings. Unvented space heaters, with their associated risk of poisoning, have too long been tolerated in American homes.

The devices involved in these injuries—some of which are fatal—are not necessarily faulty in design. In many instances, the injuries result from improper use of the product. But there are many devices which are designed without adequate consideration for safety—without adequate consideration of the manner in which they are likely to be used or misused—and without adequate warnings to the purchaser.

After carefully examining a number of these problems with officials of other Departments and agencies, we do not believe that we today possess the necessary information to formulate specific legislative proposals on the variety of products which present unreasonable hazards. We do not believe that any governmental agency has all this essential information. But we do feel it is essential to get the information, to study it, to analyze and integrate it, and to come up with practical recommendations. This should be done not as piecemeal study, hitting some spots and overlooking others, but as a comprehensive, coordinated program.

This necessary coordinated study can be conducted best through the establishment of the National Commission on Product Safety as recommended by the President.

In summary, Mr. Chairman, we urge the enactment of the amendments to the Flammable Fabrics Act, H.R. 5654, and the establishment of the National Commission on Product Safety, H.J. Res. 280. If these steps are taken, I can pledge the full support of our Department in implementing your decisions.

Dr. LEE. Before concluding, Mr. Chairman, if the committee has no objection, we would be pleased to put on a short demonstration of fabric flammability which might help to answer some of the questions that Mr. Blanton raised regarding why we see a need for this type of legislation.

Mr. MOSS. Is there objection?

Hearing none, you may proceed, Dr. Lee.

Dr. LEE. Our counsel is here and could refer to the questions presented about the blanket, as raised by Mr. Quie.

Mr. KEITH. What was the point again?

Dr. LEE. When Mr. Quie described the situation with respect to the blanket which was turned over to the Food and Drug Administration, and asked why that wasn't covered under the Hazardous Labeling Act. We didn't have an answer at that moment.

Mr. Goodrich is here and I think can provide information on that question.

Mr. WHITE. Gentlemen, you have been given a guide. This will be a brief demonstration to show you some of the burning characteristics and some of the materials that are and are not on the American market today.

Our Fabric Reference Book is this thick (indicating) and we wouldn't attempt to show you all of these. We have pulled a few samples for you to examine while this is being presented.

First, we have a piece of ordinary cotton broadcloth and a piece of cotton that has been treated chemically. I will touch the flame to the cotton fabric and you can watch the spread of the flame across the fabric.

You will also notice after it is consumed and the flame goes out that there is an afterglow. We have been told by the technical people in the field that the afterglow has an even higher temperature than the original flame.

Next, this is from the same bolt of material. The difference is it has a chemical applied at the finishing plant. This happens to be an organic chemical designated THPC, which is a phosphonium chloride.

I will show you again that while you hold the flame there it appears to burn, but once you remove it the flame does not spread.

I will apply it again to the fabric. The flame goes out and it forms a char. This is a flame retardant fabric as a result of the chemical applied in the finishing plant to ordinary cotton.

Mr. KEITH. May I ask a question?

Mr. Moss. Mr. Keith.

Mr. KEITH. At some point it was brought to our attention that overseas buyers had an opportunity to buy products that were less flammable than others, whereas, domestic purchasers were not so privileged.

Is this one of those that is not available in this country?

Mr. WHITE. In very limited quantity. There are a few items on the market treated with this process. Hospital supply companies stock sheets with this application and there are some garments sold by one of the leading retail chains through their catalog, garments that are processed with this particular chemical application.

Mr. KEITH. What is the effect of laundering?

Mr. WHITE. This is supposed to be a durable flame retardant. The company that makes this indicates that this material could have repeated washings and still be flame retardant.

The designation happens to be THPC–100, and the designation, as we have been told, is that this would withstand 100 washings and still be flame retardant. We have not proven that.

We have taken sheets in a nursing home in Arkansas that had this, plus the next process that I am going to show to you, APO–THPC, and subjected those to 75 washings and still retained good flame retardant. This is the one-chemical additive. Next will be a two-chemical additive.

Mr. KEITH. There is nothing in the statute that would prohibit the sale of these products in this country, but it is just that the manufacturer has not attempted to advertise them and sell them?

Mr. WHITE. I think it is a more complex problem than that, sir. There is not consumer demand. There is not general information to the consumer on these. The price is a good bit higher than ordinary cotton.

Mr. KEITH. Roughly, what is the cost of impregnating the cotton with that flame retardant?

Mr. WHITE. The best estimate we have is that a sheet normally selling for $3 would be about $4, but this would vary in terms of quantity of production and volume of sales.

Mr. KEITH. To the best of your knowledge, are there any adverse effects upon the sheet; particularly as it affects the one whose flesh comes to it? Would there be any irritant involved?

Mr. WHITE. We have found no indication of this in our Arkansas nursing home study. We did have patients who were subjected to long periods of bed care using sheets that were treated with THPC and APO, which is a combination of phosphine oxide and phosphonium chlorides.

There were two skin reactions during the year of the study and the physician in charge of the case took the patients off of these sheets. They were treated for their skin reactions and after they were well they were put back on the treated sheets. The reactions did not recur.

We were told by the physician in charge that we could not attribute the skin rashes to the chemical treatment. Also, there have been studies in the Buffalo General Hospital and other institutions where essentially the report showed no toxic reaction to the human skin.

Are there any other questions at this point?

Mr. Moss. No. You may proceed.

Mr. WHITE. On your next page you will see a piece of heavier cotton which is a twill. This is used primarily in industrial clothing and heavier fabrics. You will find that the process here involves two chemical treatments. This is the APO–THPC, which is the treatment we used as recommended by the Department of Agriculture in our Arkansas study.

Again, the one on my right is not treated, and you can observe the slower rate of flame spread because it is a heavier material. It is a tight weave. It will burn quite readily. This is a basically cotton material.

You will also notice after the flame goes out the afterglow, which, again, is intensely hot.

On my left, you have a piece of material from the same bolt of cloth treated with APO–THPC. It does not support the flame and it has no apparent afterglow, or very little.

Dr. LEE. I might add one more comment to your remarks, Mr. Keith. Even in our own Public Health Service hospitals, we have not yet used these treated sheets.

The Surgeon General has just approved a recommendation by the group in injury control that this be done so that we will be implementing this in the very near future. Since this is so, even with the information available to the Department, it is not surprising that they have not been more generally used in the market.

Mr. KEITH. What you are trying to prove in this demonstration, as I understand it, is that it is possible to take steps, at some expense which we have earlier discussed, to overcome a hazard which currently exists.

What Mr. Hollomon declined to do for products as a whole was what you have just done here.

You have mentioned, in your testimony, lawnmowers. All of us are very familiar with the hazard there. Can you give us any similar and parallel demonstration as to what you might be able to do in the field of lawnmowers?

Dr. LEE. I might say first, Mr. Keith, the purpose of this demonstration is twofold. One is to indicate how we approach the problem and what some of the things are that we have to do to define the problem. One is this type of study.

I could ask Dr. Marland if that would be feasible with respect to other products.

Dr. MARLAND. Actually, you have selected, Mr. Keith, a very propitious example. Mr. White has just concluded a series of liaison activities with the Outdoor Power Equipment Institute, which includes lawnmower manufacturers.

Would you describe the results of these liaison meetings?

Mr. WHITE. Specifically to the point, Mr. Keith, the lawnmower manufacturers and designers have been working with us because as a health agency we supply the information on injuries that are incurred through the use of the machine.

The extensive studies done in a six-county area of Iowa, plus other studies around the country that number some 18 or 20 different injury studies, have helped to define the problem.

One thing that we assumed was that people were getting hurt from material thrown out the discharge chute of the lawnmower. We found

out on careful study in the field and in the laboratory that the projectiles come from between the two rear wheels and they hit the operator in the legs, as a rule, and through the addition of a guard that would cost maybe 15 or 20 cents on the machine you could eliminate, essentially, this injuiry to the operator.

Second, in 1962, when we started with the industry, only 5 percent met engineering standards under the then ASAB–71 standard.

Today, we have 95 percent of them meeting this standard and in several instances retooling costs $200,000 to $300,000 for one company. We will have compulsory testing to meet the standards and improved standards next year.

There has been an apparent improvement in the injury experience. From the standpoint of design, the manufacturers, once they are shown the cause of the injury and the scientific information available, are willing to cooperate with us in making these changes.

Mr. KEITH. You mentioned compulsory compliance with an improved standard.

Mr. WHITE. They will compel their members who belong to this association.

Mr. KEITH. This is a voluntary standard?

Mr. WHITE. Yes, sir.

Mr. KEITH. But people do not have to stay members of this association?

Mr. WHITE. That is corect, sir.

Mr. KEITH. They do, of course, advertise what they can do with their modifications and they improve their products accordingly?

Mr. WHITE. Yes, sir.

Mr. KEITH. What you would try to do by Government law and regulation is to protect the public's interest in compliance by statute rather than by means of this voluntary association?

Mr. WHITE. In effect, this would be true, sir.

Dr. LEE. Not with respect to lawnmowers. This just relates to flammable fabrics. The lawnmowers come under the Commission and would be more thoroughly reviewed by the Commission.

The administration is not proposing any legislation relating to lawnmowers.

Mr. KEITH. The Flammable Products Act, in your view, is plain enough and simple enough to demand legislation at this time rather than waiting on a Commission report?

Dr. LEE. Yes, sir. We think the problem is clearly enough defined. As we have indicated, and Dr. Holloman indicated, there is much more that we need to learn. One of the things that would be accomplished through the legislation would be a clear congressional mandate to expand the research efforts that are now being carried on. We all feel this is a very important element in this bill.

Mr. WHITE. The next item, if you will turn the page in your reference book, is a piece of fiberglas fabric. This is drapery material that is now available on the market and competitive in price with other popular fabrics. It is inert. It will not support combustion.

The material sometimes is treated with a sizing which is slightly flammable. But essentially the fiberglas material meets all existing requirements on flammability and does not burn. It is relatively inert.

They have not developed any material suitable for clothing worn next to the skin over extended periods at this time, although experimental garments have been made of fiberglas.

The next item happens to be one that was mentioned by Congressman Quie earlier. We, of course, were interested in the report of an injury, though a minor injury in this case, which could have been serious. We asked our representative in the Illinois area to get a piece of the material from the blanket that was used by the victim at the time she reported the fire. Although this one is not from the identical blanket, it is from the identical lot of blankets, made by the same manufacturer, and is identical in structure and weight.

This is 88 percent rayon, 12 percent acrylic. It is not unusual. These have been on the market for years. They, of course, are not covered under the present act. But I want you to watch the flame spread.

We had this sent to the Bureau of Standards and asked that flame tests be applied to it. The average burning time of five swatches, about this size, was 1 second.

Mr. KEITH. What is the volume of sales of this material per year, do you have an idea?

Mr. WHITE. I have no idea, but it is considerable. It is a very popular blanket. I think this particular one was $3.95, or in that price range. It is very popular.

Mr. KEITH. It seems to me that you have highlighted two products here. The synthetic material is obviously very hazardous and subject to exposure that would make the possibility of danger to human life quite great.

On the other hand, cotton is used very extensively, and is known to be flammable, but is an essential ingredient in our society. There are alternatives to the flammable synthetic blanket. If we had an arbitrary action on the part of a Government agency using the second demonstration or the last demonstration, you might generate sufficient enthusiasm within your agency that they might do as they did in the cranberry crisis and penalize consumers, and producers as well, needlessly throughout the Nation, just because of overzealousness.

This is, I think, the reason for the congressional concern, and I am sure the industry concern.

Mr. WHITE. Proceeding to the next page, you will see a different type of material, called modacrylic. This is a synthetic fiber that is inherently flame retardant. It is used frequently for draperies and other decorator type fabrics. This happens to be Verel, manufactured by Tennessee Eastman.

You will notice instead of burning it tends to shrink away from the flame and with higher heat it will melt. But it does not support combustion. It is not presently used extensively in clothing, and probably will not be.

The last item that is shown in the book is a flame retardant nylon called Nomex, which is a new product of the Du Pont Corp. It has a fleecy or nap finish that you can feel. I will put it in the holder and apply the flame. You will notice that it does not support combustion nor does it allow the flame to spread.

Nomex, instead, forms a char. It is available in many other styles and types of fabrics.

With your permission, I would like to show you a couple of these things.

This is a dress made of Nomex, an experimental dress, I might add, not available on the American market. It is an attractively tailored garment. The color is one of the two basic colors the fiber comes in, but we have been told that they now are able to dye these and they can be offered in a variety of colors next year.

I would be glad to pass this along.

Mr. Moss. I regret that we will have to adjourn the hearings for the day because of the second bell on a quorum call on the floor.

The nature of the pending legislation makes it a certainty that any attempt to continue hearings this afternoon would be futile. We would be repeatedly interrupted by quorum calls.

Accordingly, the committee will adjourn until 10 o'clock tomorrow morning, when we will meet again in this room.

(Whereupon, at 12:30 p.m. the subcommittee adjourned, to reconvene at 10 a.m., Thursday, April 6, 1967.)

FLAMMABLE FABRICS ACT AND PRODUCT SAFETY COMMISSION

TUESDAY, APRIL 11, 1967

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to notice, in room 2123, Rayburn House Office Building, Hon. John E. Moss (chairman of the subcommittee) presiding.

Mr. Moss. The committee will be in order.

This morning, in a continuation of the hearings on a series of bills dealing with amendments to the Flammable Fabrics Act and the establishment of a National Commission on Product Safety, we will be pleased to hear from the Honorable Paul Rand Dixon, Chairman of the Federal Trade Commission. Mr. Dixon, will you introduce those who are with you?

STATEMENT OF HON. PAUL RAND DIXON, CHAIRMAN, FEDERAL TRADE COMMISSION; ACCOMPANIED BY JOHN V. BUFFINGTON, ASSISTANT TO THE CHAIRMAN; JOHN N. WHEELOCK, EXECUTIVE DIRECTOR; AND HENRY D. STRINGER, DIRECTOR, BUREAU OF TEXTILES AND FURS, FEDERAL TRADE COMMISSION

Mr. PAUL DIXON. Mr. Chairman, accompanying me to my left is Mr. Henry Stringer, who is the Director of our Bureau of Textiles and Furs. To my right is my assistant, Mr. J. V. Buffington, and to his right Mr. John N. Wheelock, the Executive Director of the Federal Trade Commission.

As Chairman of the Federal Trade Commission, the agency Congress has designated to administer the Flammable Fabrics Act of 1953, I am happy to discuss with you the various bills which are being considered at these hearings.

In the notice of March 24, 1967, of the hearings, 12 bills are listed. As to some of them, the Commission has been requested to make a report to the full committee with such comments as we might desire to make; as to other bills listed on the notice, no such requests have been received.

In lieu of the requested reports, I respectfully ask this statement be received, and also that it be considered as the reports on any other bills listed in the notice on which no reports as yet have been requested but may be asked for sometime during the present session of Congress.

Six of the bills listed are similar. These include H.R. 5654, which was introduced by Chairman Staggers under date of February 16, 1967, and H.R. 5780, H.R. 5938, H.R. 6025, H.R. 6114, and H.R. 6421. I shall direct my remarks in respect to this group of bills to H.R. 5654, but they will be equally applicable to the other five bills.

H.R. 6142 and H.R. 7471 are similar in nature and purpose to remove certain products from the application of Flammable Fabrics Act. H.R. 5474 is designed to make bedding subject to the Flammable Fabrics Act. House Joint Resolutions 280, 340, and 357 are resolutions to establish a National Commission for Product Safety.

As we interpret H.R. 5654, the effect of the bill would be to broaden the application of the Flammable Fabrics Act by removing certain articles of apparel and parts of clothing from their present exemption from the act, to make interior furnishings subject to the act where the Secretary of Commerce determines that a standard of flammability should be established for such products, to provide that the Secretary of Commerce shall, under the rulemaking authority granted him, establish standards of flammability with respect to clothing and interior furnishings, to establish recordkeeping requirements showing the disposition and end use of products subject to the act or claimed to be exempt therefrom, to clarify the provision prohibiting importation of flammable articles, and to provide for investigations in the interest of the public safety by the Secretary of Health, Education, and Welfare and the Secretary of Commerce.

Section 2 of the act would be amended by H.R. 5654 to remove present exclusions from the act as to hats, gloves, and footwear, and to remove the exclusion of interlining fabrics from the act so that all these products would be subject to the act.

Other definitions necessary to effectuate the broadening of the act are contained in the proposed amendment to section 2, including the term "interior furnishings" which would apply to furnishings used in homes, offices, and places of assembly made in whole or part of fabric or related material. "Related material" would include paper, plastic, rubber, synthetic film or synthetic foam intended for use for wearing apparel or interior furnishings.

Section 4 of the act would be amended by H.R. 5654 to authorize the Secretary of Commerce to prescribe and promulgate flammability standards for articles of wearing apparel as well as fabrics and related material used in the manufacture of such material.

Additionally the Secretary of Commerce would be authorized to establish standards for flammability for various types of interior furnishings after notice and opportunity to be heard and after publication in the Federal Register, where the establishment of such a standard is necessary for the public protection.

This procedure differs from the method used in the establishment of the present commercial standards utilized for testing articles of wearing apparel and fabrics under the Flammable Fabrics Act, as it now stands. Under the present act, commercial standard 191–53, "Flammability of Clothing Textiles," and commercial standard 192–53, "General Purpose Vinyl Plastic Film," are voluntary standards written in large part by those to be regulated by them.

Under the proposed amendment to section 4, final authority for promulgating and amending appropriate standards would rest in the

Secretary of Commerce rather than industry members. Such procedure would be in accordance with conventional procedures established under the Administrative Procedure Act. We believe that this procedure would be much more appropriate than the present method for establishing flammability standards.

Amended section 4 also sets forth certain criteria which the Secretary of Commerce shall consider in promulgating standards of flammability and provisions as to the effective date of the standards.

Under amended section 4 the Secretary of Commerce would make a specific determination of the need for standards to be established for particular interior furnishings, and would then hold hearings to determine the type of standards which would be appropriate with respect to the particular category of interior furnishings involved. In other words, the Secretary would, by this procedure, determine whether or not specific interior furnishings should be subject to the act. The Secretary of Commerce would also make appropriate changes as to standards applicable to articles of wearing apparel.

The present standards were developed in 1953 and have been valuable in preventing what might be termed as extreme hazards of flammability of products to which they might be applied. However, they have not been successful in preventing many annual deaths and injuries arising from flammability of certain types of clothing and from what might be termed in the bill as "interior furnishings" and "related material."

The Commission is presently engaged in a survey of fire marshals with respect to the flammability of certain types of articles, including those textile articles not presently subject to the act. We have, to date, received replies from approximately half of the officials surveyed. The survey revealed that statistics with reference to injury and death from burning are poorly kept and without any standardized form or system of reporting.

Indications from this survey are to the effect that the articles from which the greatest number of deaths and injuries result are items of bedding and upholstered furniture. On the basis of the inquiry, we have received reports of 204 deaths and 1,747 injuries because of the ignition and burning of bedding. The survey also contained reports of 44 deaths and 2,168 injuries from the ignition of upholstered furniture. These reports were generally for the past year, although, here again, there is no standard means of reporting, and different fire marshals reported for different periods.

As a result of the survey, one death was reported from burning of carpeting, which was ignited by burning grease, and one death and one injury from the ignition and burning of curtains. It should be emphasized that these figures are incomplete and to a degree conjectural in view of the lack of uniformity in gathering statistics and of the fact that many fire marshals do not maintain records of this nature.

Additionally, many of the persons reporting used subjects such as, as for example, "careless smoking" or "children with matches" without indicating what material was ignited. From the same survey we were able to extract 130 instances where death was due to the burning of clothing, even though the survey was not directed to this end.

The members of the Commission's staff who have been concerned with the administration of the Flammable Fabrics Act advise me that in all probability most of the injuries and deaths referred to above resulted from articles which would pass the present flammability tests under the act.

For example, it is readily apparent that a fabric which would not present any unusual hazard when used in an article of clothing by a person who is wide awake could present a substantial hazard to a sleeping person if it should ignite and burn. The Secretary of Commerce would undoubtedly need to explore the question of appropriate flammability standards for such items as bedding and upholstered furniture which result in a substntial number of deaths and injuries every year.

H.R. 5654 would amend section 5 of the present act so as to require reasonable maintenance of proper records of commercial transactions concerning commodities subject to the act, or as to which an exemption or exclusion from the act is claimed. This particular amendment is important to the Commission inasmuch as the Commission has experienced difficulty in tracing fabrics under the present act, which contains no specific statutory recordkeeping requirements. It is readily apparent that the disposition of flammable products is a matter which may in many instances involve the public safety.

H.R. 5654 would amend section 9 of the act to make the prohibition against the importation of flammable fabrics applicable to the importer rather than to the exporter as is the case under present section 9. Since the importer and not the foreign exporter is subject to the Flammable Fabrics Act, this amendment is clearly in the public interest. The bill also makes technical amendments to sections 3, 6, 7, 8, and 11 of the act. These are clarifying amendments which bring these sections into conformance with the other amendments of the bill.

The bill would add an entire new section 14 which authorizes investigation and research. It provides that the Secretary of Health, Education, and Welfare in cooperation with the Secretary of Commerce would annually study and investigate deaths, injuries, and economic losses resulting from accidental burning of products, fabrics or related materials and submit an annual report to the President and Congress.

This new section also authorizes the Secretary of Commerce to conduct research into the flammability of products, fabrics and materials, conduct feasibility studies on reducing flammability, develop flammability test techniques, and offer appropriate flammability test training; he would also be required annually to report to Congress on the result of his research activities.

We would suggest one change in H.R. 5654. We suggest that paragraph (d) of section 2 be made to read:

"(d) The term 'article of wearing apparel' means any costume, article of clothing or accessory worn or intended to be worn by individuals."

This would eliminate questions which have arisen as to the application of the act to such items as artificial corsages, and so forth.

H.R. 5474, another of the bills which is to be a subject of this hearing, would give the Federal Trade Commission the same powers to prevent the manufacture and sale of dangerous flammable bedding material

that it now has under the Flammable Fabrics Act with respect to articles of wearing apparel. In general, the bill seeks to accomplish this purpose by inserting the words "or bedding" at each point at which the phrase "any article of wearing apparel" now appears in the act.

The Commission supports the principle underlying H.R. 5474 in view of the indication of the dangers from bedding material. We feel, however, that the act should be amended much more broadly. Moreover, as stated in our report of June 2, 1964, to the chairman of the full committee, on H.R. 10445, 88th Congress, 2d session, a bill which is the same as H.R. 5474, 90th Congress, the Commission is doubtful whether the standard of flammability as now set forth in section 4 of the act could properly be applied to assess the flammability of bedding material.

Under these circumstances we are of the opinion that the proposed amendment to the Flammable Fabrics Act as contained in H.R. 5654 whereby appropriate standards of flammability for various types of interior furnishings, including bedding, would be established by the Secretary of Commerce would be more in the public interest.

Another of the bills to be discussed at this hearing is H.R. 6142 (which is the same as H.R. 7471); it would limit the Commission's authority to consider the manner in which clothing is actually worn in enforcing flammability standards.

My belief is that the effect of this bill is to prevent the issuance by the Commission of any regulation under the existing Flammable Fabrics Act pertaining to the flammability of sweat shirts which sometimes are worn inside out. It was brought to the attention of the Commission's Bureau of Textiles and Furs, which administers the Flammable Fabrics Act, that there was an increasing practice among adolescents of wearing sweat shirts with the fleece side exposed. The manufacturers had not previously considered the fleece inner side of sweat shirts as an "uncovered or exposed" part of an article of wearing apparel as defined in the rules of the Commission, so as to be subject to the testing requirements of the act under the rules and regulations of the Commission.

As a result of this situation, the Commission now has under consideration a proposed regulation which would require the testing of the fleece side of the material to determine if it is dangerously flammable under the commercial standards specified in the act.

The manufacturers of sweat shirts have advised us that fire retardant finishes are being developed which in time will resolve this issue.

I might say also, Mr. Chairman, that I think that very shortly with respect to this subject matter we will have promulgated a new rule in this respect putting this type of garment clearly under the act but not to be effective until the first of the year, and I have personally been told by representatives of industry that they feel confident that on or before that date they will have perfected a very cheap process of fireproofing the sweat shirt which will not cause it to disappear off of the market because of increased cost, and I hope that this is true because as I read that bill that has been put in here it would be to limit the application of the act only to those sweat shirts intended to be worn reversed.

There are some sweat shirts on the market we are told that actually are advertised and sold this way. The other is the common old sweat shirt we have all worn as kids growing up that obviously is worn with the fleece inside, but we know on surveys and whatnot that to the modern kid this must be just an invitation to them and they wear it inside out. This must be fashionable, and it is so. That is all there is to it.

Certainly we are not in favor of H.R. 6142 which would limit or restrict entirely the Commission's jurisdiction in this area. Therefore, we oppose the enactment of H.R. 6142.

Furthermore, under the provisions of H.R. 5654, as we have attempted to point out, the flammability standards may be broadened, changed, or modified by the Secretary of Commerce so as to provide an appropriate standard for any unusual situations which might develop such as those involving sweat shirts being worn inside out. But may I reiterate that because of the fine spirit of cooperation disployed by the manufacturers of these shirts, it is my personal opinion that the entire matter will be settled amicably so that there would be no necessity for enactment of H.R. 6142.

The final group of bills or resolutions which, according to the notice, are to be the subject of these hearings, are House Joint Resolutions 280, 340, and 357. They all pertain to the establishment of a National Commission on Product Safety. The Commission endorses these resolutions, because we are of the opinion that the patchwork of existing laws designed to protect the public from the hazards of dangerous products is seriously inadequate and that a comprehensive reveiew by a National Commission on Product Safety, such as is contemplated in these resolutions, is urgently needed.

However, it is to be noted that the resolutions specifically provide that the term "household products" as used therein does not include products regulated under the Flammable Fabrics Act. We agree that this is a proper exemption. It may be noted in the President's message of February 16, 1967, on the protection of the American consumer, that while the President recommends that Congress enact legislation establishing such a commission, he also recommends, as we have hereinbefore pointed out, legislation to broaden and strengthen the Flammable Fabrics Act by closing the gaps now existing in that law.

In line with this, we are convinced that the duties which would be imposed upon the Federal Trade Commission, the Secretary of Commerce, and the Secretary of Health, Education, and Welfare by the provisions of H.R. 5654 should result in giving broader protection to the public against the dangers of flammability. Because of this, we see no reason why a National Commission on Product Safety should study this same problem.

The Federal Trade Commisison has gained considerable experience in administering the Flammable Fabrics Act. For example, since January 1, 1961, the Commission has issued 46 orders under the provisions of this act. During the period from April 1962 to date the Commission has also accepted 261 assurances of voluntary compliance under this act. The orders pertain to such fabrics or wearing apparel as wood fibers, napped fleece fabrics, silk illusions, scarves, dresses, leis, bridal illusions, silk squares, and rayon fabrics.

With the promulgation of new standards, as provided in H.R. 5654, satisfactory flammability tests could be made of bedding, mattress tickings, and other possibly flammable materials which, because of the limitations of the existing law and of the tests of flammability, are not subject to the provisions of the Flammable Fabrics Act.

Although we cannot support our position with definitive statistics, we know that fires frequently are generated by the burning of interior furnishings, draperies, furniture, and carpeting which are as dangerous as fires arising from wearing apparel. I need not recall to your memory the horrible destruction which arose from the multimillion dollar fire that destroyed McCormick Place in Chicago which, as I understand, was fed to a large extent by the wallpaper.

Recently, I am informed, a fire was caused by the ignition of a baby's cotton receiving blanket when the mother was lighting a cigarette. Fortunately she was able to remove the blanket and there was no injury. There is little question but that such blankets, with a highly brushed surface, are dangerously flammable even under the tests set forth in the present act; however, the Commission has been unable to take action against them because it would not appear that these blankets come under the provisions of the existing law.

The staff of the Commission has found that cotton and rayon pile bed blankets which have raised surfaces are highly flammable although not covered under the existing act.

I might add that the Department of Health, Education, and Welfare estimates that 2 million people are burned in the United States from all causes each year and about 100,000 of these victims require hospitalization. Undoubtedly many of these fatalities and injuries are related to textiles and interior furnishings.

Just a few words now about the proposed amendment to the Flammable Fabrics Act which would add a new section 14 authorizing investigations and research. It is the opinion of the Commission's Bureau of Textiles and Furs that it would be most desirable to have all children's clothing made flameproof by applying a chemical finish to all combustible fabrics or by having such clothing made of nonflammable material.

The statistics already collected by the Department of Health, Education, and Welfare show many instances of children being burned because of wearing flammable clothing.

Therefore, we suggest that the Secretary of Health, Education, and Welfare, in cooperation with the Secretary of Commerce in its study and investigation of death and injuries resulting from the accidental burning of products, as provided by section 14 of H.R. 5654, keep the object of flameproof clothing for children constantly in view.

When there is a breakthrough by science in the development of a suitable means of providing such safety to our childen, at a reasonable cost to their parents, appropriate recommendations may be made to Congress for this type of legislation in addition to that proposed in H.R. 5654 and similar bills.

While we can give no assurance that enactment of H.R. 5654 will lead to immediate and startling reduction in the rate of death and injury from flammable products, we believe that such enactment will greatly strengthen the effectiveness of the Flammable Fabrics Act and again I reiterate the strong approval of this bill by the Federal Trade Commission.

I am authorized by Commissioner MacIntyre to inform you that he concurs in the statement that I have made except for the material appearing on page 9 and the first half of page 10 regarding sweat shirts which could be worn inside out. As I understand it, Commissioner MacIntyre does not concur in either the Commission's position on H.R. 6412 (which is the same as H.R. 7471) regarding sweat shirts or the proposed regulation which would require the testing of the fleece of sweat shirts to determine the flammability of such fleece.

In other words, I interpret that Mr. MacIntyre is disturbed about this application to the sweat shirts at this time.

Mr. Moss. Mr. Chairman, I want to thank you for the statement. With the exception of the reservation by Commissioner MacIntyre relative to the Commission's position on H.R. 6412, the other Commissioners all concur in this statement you have given?

Mr. PAUL DIXON. Yes, sir. They do, sir.

Mr. Moss. Mr. Keith.

Mr. KEITH. Thank you, Mr. Chairman.

Good morning, sir. I am a little curious, why, if this legislation is necessary now, its necessity wasn't brought to the attention of Congress several years ago.

Mr. PAUL DIXON. Well, maybe it's an accumulation of information. Maybe it's the increasing awakening, awareness of the responsibility of Government with respect to the safety of consumers generally. There is no doubt that, with the passage of the Flammable Fabrics Act and with the adoption of the voluntary standards by Congress and writing them into the law, that this was a limited type of approach to a problem then that Congress was aware of.

Four seconds' burning time which was reduced on flat fabrics down to 3.5, the movement for instance on that standard, one-tenth or five-tenths or 1 point, and you begin to talk about literally the inclusion under the act of hundreds of thousands of yards of fabric.

The question comes as to just how far should the Congress go in a procedure looking toward safety. This was with respect to the original bill which only had to do with wearing apparel, which was rather limited.

Now, this bill would remove all of the restrictions which we support and support fully and, until a new standard would be developed by the Secretary of Commerce, the old standard would apply. It is just a question of how far you should go, if you want to say in leaning over backwards or how far should one go reasonably in requiring protection. I think it has been maybe long overdue.

Mr. KEITH. This question of reasonableness is very difficult for any agency to evaluate. To illustrate I will give you the substance of a reply to a question I asked of another witness before this committee. An agency of the Department of Health, Education, and Welfare had detected a residue of fluoride in fish protein concentrate which inhibited their approval of this very valuable product.

Another agency of HEW is crazy about fluoridation of public water supply to help teeth, but they found out that mottling of teeth may be caused by excessive quantities of fluorides.

I asked this witness: "If you were to find that one person has mottled teeth as a result of this and 99 people had stronger teeth because of this residue, would you still feel that you would have to deny this product to the consumer?"

He said, "Yes, I would." I do not believe that was reasonable, but that was his position. As you are aware HEW has changed its position. The point is that when an agency is given authority to set a standard, it may not always exercise that authority reasonably.

I know that wherever possible we should have a government of laws and not of men, and that we should provide adequate recourse to the courts to protect the rights of those who are regulated.

I know that we should as far as possible have a government of laws and not of men, and that we should as far as possible have recourse to the courts to protect.

Mr. PAUL DIXON. In any rulemaking procedure under the Administrative Procedure Act there is adequate review in the court. Of course, it is not the same kind of procedure, as you members are aware, as of an adjudicative matter. It is rulemaking in its broadest sense, but it must be tracked very carefully under the Administrative Procedure Act passed by the Congress in 1946 and there is that safeguard here to keep from arbitrariness occurring.

Now, of course, I always come back to another thing. I know how difficult it must be to Members of Congress to have to continually be facing up to a problem that doesn't quite stand still, and if Congress is gong to have to continue to write in the floorboard test, we might say it would mean the problem is going to come back to you.

Going the way you proposed in this bill there are the protections of the Administrative Procedure Act, and I think even a greater protection of that is that if somebody down the street does something that you consider unreasonable, you are going to have him up here pretty quick, I think.

Mr. KEITH. Well, I don't want to argue philosophy with you, but there are some difficulties in that approach.

Mr. PAUL DIXON. Either one of them has difficulties.

Mr. KEITH. That is correct.

I have the impression that the provisions of the Administrative Procedure Act may not apply to all of section 4. Is that act generally applicable to the major features of section 4 that have to do with the flammability standards of wearing appareal and fabrics?

Mr. PAUL DIXON. Yes, sir. The answer is "Yes," sir.

Just a moment. I am getting a disagreement here. I may correct the answer. You were talking about the proposed bill, were you not, sir? You weren't talking about the old bill, the bill we are operating under now?

Mr. KEITH. You mean the law. This is a bill. We are talking about legislation. That is the law.

Mr. PAUL DIXON. The legislation today was adopted by the voluntary courses under the voluntary standards procedure, and once it is adopted, is written into law by Congress so that no Administrative Procedure Act applies to that at all now, but under H.R. 5654, the new procedure that is proposed, it would apply.

Mr. KEITH. I see the point that you are making.

Mr. PAUL DIXON. This would be an amendment to the bill.

Mr. KEITH. I understand that, but in view of some disagreement on your part and on mine, we will clarify this in correspondence between your agency and the committee prior to our executive session because I think it is imperative that we do make clear to the consumer and the country just what recourse there is.

Let's take a specific case. It was admitted in testimony before this committee last week, if I recall correctly, the flameproofing might increase the cost of fabric about a third; if cloth costs $3 a yard, it may cost $4 a yard if it is made flame resistant.

You have many, many millions of yards of cloth produced. Is it conceivable that you might establish standards that would require that all cotton cloth to be used for clothing purposes be required to be of a flame-resistant material?

Mr. PAUL DIXON. The present law, of course, doesn't contemplate that. That is the present law. By the proposed bill this could only be done upon an announced reason by the Secretary of Commerce and hearings to develop a proposed rule looking toward that end result.

I can readily see the fear that would come into one's mind if he is in the cotton-producing industry that if someone went to the ultimate in this thing and said, "No cotton fabric of any sort can be worn unless it is fireproof," that it could cause quite a problem.

Apparently when Congress first addressed itself to this problem, you set a standard that in my opinion—and that is the reason we are supporting this bill here—is not realistic as of today. For instance, I suppose you are generally familiar with the way these things are tested. They take little swatches of the stuff 2 by 6 inches and on a 45° incline position, after completely drying it, freeing it of moisture, then impinge upon it a flame for 1 second like this. It is a beam and it is back. If it ignites and burns the required length of distance here if it is a flat fabric within 3.5 seconds, and if it is in the raised surface, 4 seconds.

Just think. One-tenth of a second and it can be sold without anything on it. One-tenth of a second passes or two-tenths or five-tenths or 1 second. You have a sweater on or a shirt, and that is burning, and it's just a question of seconds, and if you can't get it off, you are going to get burned. Where should it be? Remember, every time you raise this one-tenth of one-half, you are picking up hundreds of thousands of yards of fabrics and placing it under the law. Should it be absolute or should it be placed in here somewhere? I don't know how you evaluate a human life.

Mr. KEITH. I don't know either. I can recall the time that a bridge was under construction in my district and it was reported that 19 people were poured into the concrete in the course of the construction of that bridge. Of course, it was just a rumor.

It is conceivable that in any construction project men will be injured or even killed. There are those people who would argue that you shouldn't build such a project. In any tribunal sitting to determine the reasonableness of a particular course of action there are people that would say that if you save one or two lives, it is worth the expenditure of hundreds of millions of dollars.

Mr. PAUL DIXON. And also we don't worry as much about the loss of property as we do lives, but probably we might have saved untold wealth that might have been saved if some of the furnishings of hotels, nightclubs, places of assembly had more strict requirements as to flammability.

Mr. KEITH. One last question, have you given any consideration to whether it might be much easier for foreign countries to comply with

the process required to make a product less flammable than it would be for our industry.

In a socialist society, from which we oftentimes buy many products, they could perhaps afford to do this much more easily than we and make our competition even more difficult than it is now.

Mr. PAUL DIXON. It would be a new wrinkle if it was. We are having problems coming from countries outside this country. They are not too careful about it now, sir.

Mr. KEITH. I know that, but they don't have to be.

Mr. PAUL DIXON. That is right. We have no extraterritorial jurisdiction. We have this problem in some imported fabrics right today. We have a real bear by the tail here, and we have this importation of goods from abroad, that don't pass these tests. Maybe they don't have to. They can sell them over there but the big market is over here.

Mr. KEITH. Do you happen to know why the American market apparently isn't interested in the flameproof coats a southern firm is selling in England?

Mr. PAUL DIXON. I don't have any knowledge about that.

Mr. KEITH. Mr. Chairman, I have taken enough time. I recognize that you have the gavel in your hand.

Mr. MOSS. The Chair has been constrained to most liberally interpret the 5-minute rule and has extended it by four times.

Mr. KEITH. I would like to think it was because of the value of the course of my questioning.

Mr. MOSS. I assure the gentleman that was the sole reason.

I think on the question of the export to England the Chair is informed that the English do have requirements for flameproofing of certain types of garments.

Mr. Blanton?

Mr. BLANTON. No questions, Mr. Chairman.

Mr. MOSS. Mr. Watkins?

Mr. WATKINS. Mr. Chairman.

Mr. Dixon, I want to compliment you for your statement. I have read many reports in Washington, and I notice that you are saving stationery. You are using the opposite side of the paper, and I think that is good.

Mr. KEITH. If you will permit me, the press will take twice as many copies because they don't like to turn it over.

Mr. WATKINS. Naturally I am deeply interested in your report, and I am glad to see that the chairman has such a sense of humor this morning and good feeling. I enjoyed listening to my colleague, Mr. Keith, questioning you about the various items. I will assure you, Mr. Chairman, that I won't use 20 minutes.

Mr. MOSS. The Chair would be just as liberal with the gentleman from Pennsylvania.

Mr. WATKINS. Thank you.

I would first like to ask you this: Do you know of any effort by the Commerce Department, your Department or any other Department of Government here that has done anything to warn the buying public about the dangers of purchasing various items that are flammable and dangerous?

Mr. PAUL DIXON. Do you mean one that would be an official expression? I don't believe that we could put our hand readily upon any

broad assertion from my agency as to warning the public. We have felt that when Congress faced this problem in 1951 that the Congress itself had drawn the line and, their having drawn the line, this was a congressional expression.

Now, for us to come along to enforce the law and say, "Well, we think the public is entitled to know that even though it is passed it still could cause you to lose your lives."

Mr. WATKINS. I don't mean that you would name any specific product, but my question is: Do you know of any agency that ever warned the public to be cautious on their purchases?

Mr. PAUL DIXON. We have from time to time put on demonstrations. I recall one that really disturbed me a great deal. It was one back just before Christmas when we were alerted that a considerable number of sweaters were on the market which were highly flammable. I called a press conference and the radio and television people came down there, and I burned four of those things for them, and it was just like a powder keg, and we were working hand in glove with the New York authorities.

We went in and all these goods were seized by the New York authorities.

Mr. WATKINS. That is when a specific item is called to your attention?

Mr. PAUL DIXON. Yes, sir.

Mr. WATKINS. But you have no general program to warn the buyer to check the items that they are buying that could be flammable?

Mr. PAUL DIXON. I think the public generally assumes that when they buy something, that unless there is a warning it is considered safe, and I think they think that our Government sees to this. I think they look upon the maker or the manufacturer of the goods with the sense that he is warrantying that it is reasonably safe. The doctrine of implied warranty is mixed up here somewhere.

Mr. WATKINS. I just wondered if you could name any specific program. I want to talk about my wife who has done quite a bit of purchasing in 45 years of my married life. I went home and asked if she ever checked. I wanted to know whether my sheet would catch afire when I smoke in bed. I found it wouldn't. That sheet was all right. But I found she bought plastic waste baskets. I hope they are excluded. I don't like plastic waste baskets, where the maid threw a cigarette in the waste basket, and it took all I could do to keep the house from burning.

I think we have to have the public aware. I don't think they are. My wife wasn't after all these years of purchasing. I asked her if she ever asked anyone if it was safe, and she hadn't.

I want to go back to page 11 of your report. You say:

H.R. 5654 should result in giving broader protection to the public against the dangers of flammability.

I don't see how the public is going to get any warning from this at all. It is going to be like many laws in that it is going to be written and filed in the files and the public is not going to know too much about it. It might give you more hand to move. You go on down and say:

Because of this, we see no reason why a National Commission on Product Safety should study this same problem.

Why do you just switch from talking about 5654 and get into this other bill and say this is to set up a National Commission on Product Safety? How do you travel just from one subject right into this Commission? I just wondered what brought you into that.

It's not in 5654.

Mr. PAUL DIXON. I think that the Congress and the agencies of the Government that Congress has empowered and required to deal in this subject have enough experience already to pass H.R. 5654 and with respect to the National Commission which we are talking about, I don't think that Commission should go back and study, restudy this same problem, which is what I am saying.

Your first comment, though, as to the results that I predict that would inure to the public, why, I think they are self-evident, if you place more of these dangerous products under the law and you hold them strictly accountable to it, then they will disappear and the public need not know anything about it.

Would you advise the public, "Don't you buy a thing from anybody unless you take it and have it tested"? Hadn't you rather have a system that says that no product shall be sold that flunks this test?

Mr. WATKINS. I don't see a thing wrong in this, but I will tell you that in my family from now on my wife is going to ask that question. I don't think there is anything better than an informed public on anything. I think the public are the people you must keep informed, and I think they must be aware, but they are not.

Mr. PAUL DIXON. But misinformation causes a lot of trouble in your economic system.

Mr. WATKINS. Let's get back to this thing here, Do I understand you to say here that you are in favor of this National Commission?

We see no reason why a National Commission on Product Safety should study this same problem.

Are you opposed to the forming of this National Commission on Product Safety?

Mr. PAUL DIXON. No, sir. I was trying to express this thought here: I couldn't see any reason why they should go back and restudy the flammability problem. But as I envision from the recommendations, in its creation this national commission would go far beyond that. We talk about lawn mowers and electric gadgets. This is far different from flammable fabrics. H.R. 5654 deals with flammable fabrics.

Mr. WATKINS. That is right, and I wondered why you cut in with the National Commission. Yet you haven't told me. Are you or are you not in favor of setting up this National Commission, yes or no?

Mr. Moss. I think I can clarify if the gentleman would yield.

Mr. WATKINS. I would like him to do it.

Mr. Moss. The statement carries the firm endorsement of the National Commission on Product Safety.

Mr. WATKINS (reading):

We see no reason why a National Commission on Product Safety should study the same problem.

Mr. PAUL DIXON. If I can help, if you look at the top of page 11 in my statement:

However, it is to be noted that the resolutions specifically provide that the term "household products" as used therein does not include products regulated under the Flammable Fabrics Act.

Actually, in the very creation of this Commission, as I understood, it was intended that they not go into those products that are regulated under flammable fabrics. That is what I am reiterating.

Mr. WATKINS. Then your answer to my question is you are in favor of this Commission?

Mr. PAUL DIXON. Yes, sir.

Mr. WATKINS. I will ask you another question.

Mr. Chairman, I see you are looking at me.

Mr. MOSS. No; I was just going to supply you with an underscored portion.

Mr. WATKINS. Could you tell me what that would cost to run this Commission in your opinion? Do you have any idea of that?

Mr. PAUL DIXON. To set up a commission and have it make this study and to make this report, I have not considered the cost of it, sir.

Mr. WATKINS. Sir, do you know what they are requesting for this Commission, the money that is being requested of the taxpayers of this country?

Mr. PAUL DIXON. I heard, I believe, someone here last week when I was in attendance comment upon that.

Mr. WATKINS. It is $2 million.

Mr. PAUL DIXON. I believe that is correct, sir.

Mr. WATKINS. And you still say you would be in favor of setting up this Commission at a cost of $2 million?

Mr. PAUL DIXON. Yes, sir. I think it would be worthwhile.

Mr. WATKINS. Well, Mr. Chairman, we could go on at length. I respectfully disagree with you.

Mr. PAUL DIXON. I might point out——

Mr. WATKINS. I have to be convinced by someone. I am trying to get you to convince me and give me something to go on. Right up to now I have nothing.

Mr. PAUL DIXON. I think you have a choice, and it may be a hard choice or it may be an easy one, but it seems to me that if you want to yourselves, sitting as legislative subcommittees and committees, you want to hold these hearings that would be quite extensive, you would have to have the staff and you are going to have to make some tests yourselves. You are going to have to spend money one place or the other if you are going to get a fine factual basis.

If you want to do it here you can come out and legislate into law the final test that you want to adopt or you can, by legislation, delegate this down to the Secretary of Commerce under the AP Act procedure with the reviews and your oversight. If they have estimated $2 million, that is their estimation.

Mr. WATKINS. That is a lot of money. May I interrupt for just a minute?

Mr. PAUL DIXON. Yes, sir; it is.

Mr. WATKINS. It's a lot of money. I want to be convinced, I am going to have to be convinced the departments of Government such as yours and the Public Health and the Commerce Department, these various departments that are involved in this haven't done the job and couldn't do it if it is necessary for a commission.

Mr. PAUL DIXON. Under the law today, under flammable fabrics, nobody could do any more than what we are doing today. We are the sole enforcer. I think we are giving you more than your dollar's worth here.

Mr. WATKINS. I am not criticizing that. Just don't start surmising. I am not trying to be critical of anything that you have done, but I am beginning to believe that the days and hours that I put in here that our departments could combine them all together and get on one subject.

I want to thank you for your report. I am going to study it closely.

Mr. PAUL DIXON. Thank you very much, sir.

Mr. WATKINS. Thank you, Mr. Chairman, for letting me go over 5 minutes.

Mr. Moss. The Chair is very pleased to permit the maximum latitude to all members because this is a most important subject.

I would like to make an observation in regard to the Product Safety Commission. As I indicated in the previous hearings, that is a proposal initiated within the legislative branch, not in the executive or the independent agencies.

As one of the proposals the $2 million represents a figure that has yet to be definitely dealt with by budget projections and we are undertaking to develop such figures. Normally a resolution of this type is introduced with the sum left out and only after hearings have been concluded is there an effort to place in the resolution a figure. We placed in arbitrarily $2 million.

The Chair merely states it so that the record understands it. The record should be very clear that this figure was not urged upon the chairman as a coauthor or upon the Members of the other body as coauthors, but was one which they selected and there is no responsibility at this moment in HEW, Commerce, or the Federal Trade Commission for the figure of $2 million. I am perfectly willing to assume the responsibility I did at the time of introduction and acknowledge that it is mine and not theirs.

Mr. KEITH. I am glad that the chairman has straightened the record out on this score. When I raised it earlier with Dr. Hollomon, he indicated that he supported the $2 million figure and could justify it. He didn't try to indicate that it wasn't a product of his department.

Mr. Moss. The staff is now under instruction to develop a budget estimate, and I think that they will now consult with the departments, because this is an independent Commission undertaking a special study and reporting back to the Congress and the President. Since, however, it is mixed in these hearings, it is necessary that the Commission be burdened with commenting upon these two relatively dissimilar subjects in a single session of testimony.

Mr. WATKINS. Would you yield, Mr. Chairman?

Mr. Moss. Yes.

Mr. WATKINS. The thing that I am getting at is this: I realize that you were kind to explain it to us. I knew that and you knew that I did, but I notice all of these witnesses coming in here and endorsing it and in the end we are going to find this very fine gentleman here endorsing it. I am going to get some rebuttal in on that because I am not too sure of it.

Mr. Moss. We are going to attempt to afford the widest latitude to those who oppose this. The chairman for one is certainly most interested in the most definitively stated opposition to either the Product Safety Commission or to the proposed amendments to the Flammable

Fabrics Act and will listen attentively to all of the opponents to the legislation. I assure the gentleman that both sides will be heard.

Mr. WATKINS. You are the type of chairman that I am proud to be on your committee. Thank you.

Mr. Moss. Mr. Dixon, you have some questions.

Mr. WILLIAM DIXON. Chairman Dixon, the APA procedures I believe you referred to—on page 4—as the conventional procedures. We had and exchange in the record with Acting Secretary Hollomon and his counsel on the reviewability of any standards fixed under the proposed amendments to the Flammable Fabrics Act.

The position that was taken on the record by the witnesses and by Dr. Hollomon and Counsel Christenson was that, as I understood it, we would have review only for arbitrary and capricious conduct on the part of——

Mr. PAUL DIXON. That is court review.

Mr. WILLIAM DIXON. Yes, sir; court review.

I informally asked Mr. Christenson to give me a memorandum measuring the proposed amendment against 89–554 which passed in the last Congress and now incorporates the Administrative Procedure Act, and I would like to have the views of your counsel either working with Mr. Christenson or with me or the two of us together on just how much review would be available to one contesting a Commission order promulgated under the proposed amendment; namely, H.R. 5654.

Mr. PAUL DIXON. We would be very happy to cooperate in any way we can.

Mr. WILLIAM DIXON. Further on that same subject, would you have any opposition to a specific provision in the legislation setting forth judicial review either in amplification of or in addition to the Administration Procedure Act?

Mr. PAUL DIXON. In other words, this would be a rulemaking proceeding. It might be considered redundant by some, but if you want to make it doubly certain, in other words, guaranteeing that the judicial review is guaranteed and the Administrative Procedure Act shall apply here, just from where I sit I can see no objection to placing it in. It is there without it. If you want to put it in, it will be there.

Mr. WILLIAM DIXON. On another subject, I am sure you are aware that in several recent bills there have been advisory councils and advisory commissions. Have you given any thought to having an advisory council, as part of the legislation before the committee at this time, made up of members of the public and industry, to advise with the Secretary in the promulgation of the rules?

Mr. PAUL DIXON. I have given it no consideration because it would be something that he would have more expertise on than I would have, but the advantage of the advisory councils, their purposes, procedures, I would rather for someone there to speak to it than myself because there is where it would be used.

Mr. WILLIAM DIXON. Do you have a compilation of State standards and tests or procedures under those standards? I understand that there is some variance among the States and some may have standards more strict than those which now exist in the Federal Government.

Mr. PAUL DIXON. We could get the best compilation we can get. I am aware of the New York State law which was fashioned upon the present law. We could get that for you if it would be helpful to you. We can do the best we can on it.

Mr. Moss. Mr. Chairman, I am going to ask you to take that assignment for the committee. We will hold the record at this point to receive that compilation.

Mr. PAUL DIXON. We shall do that.

(The information requested follows:)

FEDERAL TRADE COMMISSION,
Washington, D.C., May 12, 1967.

Hon. JOHN E. MOSS,
Chairman, Subcommittee on Commerce and Finance, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: Reference is made to the hearings on H.R. 5654 before your subcommittee.

At the time of such hearings you requested that the Commission, in collaboration with the Secretary of Commerce, report to you on the judicial review aspects of H.R. 5654.

The staff of our Bureau of Textiles and Furs has worked with the staff of the General Counsel, Department of Commerce, on this matter. We have been furnished with a copy of the Department's views on this matter and we fully concur therein.

You also requested that we report to you with respect to state laws on the subject of flammability of textiles. We immediately made a survey among the states. California was the pioneer in this field, having passed a law on the subject in 1945. New Jersey and New York have flammability laws fashioned on the present Federal Flammable Fabrics Act. We are advised that a bill is pending in the Illinois legislature which is fashioned on the Federal law with the exception that the coverage is extended to cover blankets and plush toys.

If we can be of further service please advise.

By direction of the Commission:

PAUL RAND DIXON, *Chairman.*

Mr. PAUL DIXON. You are talking about standards similar to the present standard in the Flammable Fabrics Act as presently drawn?

Mr. WILLIAM DIXON. Yes; and as amplified by the proposed amendments.

Mr. PAUL DIXON. Of course, whatever they have it would be. If they have any statute, you would want to know it. For instance, I am reminded that in the original act, I believe, historical research supports that the Federal Trade Commission supported including bedding in the original act but Congress didn't see fit to put it in the act. This was a decision for the Congress.

Mr. WILLIAM DIXON. Can you tell me at this time whether the Commission would require labeling that performance had been attained so far as meeting standards under H.R. 5654?

Mr. PAUL DIXON. We would not require anyone to do that, sir. In other words, we would approach it, I think, as we have historically have approached it to enforce the law. In other words, if it doesn't meet it, then we take it off the market and see that it is treated or something and then once it is treated it is on the market.

Let it be assumed today that fabrics of wearing apparel that are on the market meet the flammable fabrics test of the law. What is before the committee now is to take away all the present exceptions written in the law, include all products of wearing apparel, and include also household fabrics under the law, and then to let the present standard exist until a new procedure or a new hearing, if reasonably it is thought necessary by the Secretary to develop new standards, either different standards or one standard or whatever it would be. That is what this bill is about.

It is asking Congress itself to remove restrictions and place all these goods under the law. Then as to what the future tests shall be, it is asking Congress to delegate down to the Secretary of Commerce and under the procedures of the APA to come forward with rulemaking, with new procedures and promulgate it, and our job, once all this is done, is of course to enforce the law. That is what it would be.

Mr. WILLIAM DIXON. Thank you, Mr. Dixon.

Thank you, Mr. Chairman.

Mr. Moss. Mr. Keith.

Mr. KEITH. I think that the question posed by counsel here with reference to an advisory council may have some merit in the long run. We have in our efforts to keep this free enterprise system free occasionally delegated to agencies of the private sector responsibility for policing their industries. I think the National Association of Security Dealers, for example, is one which was created by this committee or sanctioned by law to have some regulatory powers, subject to the wider powers of the SEC. That probably isn't possible in this case. There is a halfway point perhaps.

Mr. PAUL DIXON. Food and Drug has had advisory councils.

Mr. KEITH. We have a national seashore on the cape. The oldtime Cape Codders didn't want it. We created an advisory commission to reflect the interests of Cape Cod as to the management of that national seashore. It has been invaluable in keeping an eye on the Federal Government's operation of that seashore to make certain that local interests were respected.

Unfortunately it is of only 10 years' duration, and unfortunately it is just advisory and has no real power, but it is a channel of communication and if they get exercised about something, they can come to their Congressman. It is a representative body that can speak with knowledge.

Incidentally it has been very helpful for the Federal Government to have this communication. It does seem to me that Mr. Dixon, of this committee, has raised with Mr. Dixon, of the Federal Trade Commission, a good point, and I think we should perhaps explore it, Mr. Chairman, in some depth.

Mr. PAUL DIXON. If I may; of course, I don't know of anyone that would shy away from advice that has any kind of law enforcement responsibility. It is sought in many ways. We certainly seek it at the Federal Trade Commission by meeting with various segments of the industries that we must, of our nature, attempt to enforce.

Now, here you are speaking of the advantage of an advisory council, if this bill were to be passed, to the Secretary of Commerce who would ultimately have the responsibility of going forward with the establishment of new standards.

I listened to Dr. Hollomon here last week. I think he rather welcomed the thought myself. I think that is the impression I got on this point in his testimony. I don't know how they could keep from getting this type of advice. However, to keep it on a continuing basis might be valuable to them, but I think that they would be better equipped to voice on it than I am, sir.

Mr. KEITH. I would just like to say that in the absence of such an agency the individual comes piecemeal and is perhaps defeated piece-

meal. If a responsible group sends its representative armed with facts prepared in an orderly fashion, the Federal Government has the benefit of advice from a recognized responsible source, and it certainly is much easier for the industry concerned and for the Government.

Mr. PAUL DIXON. I see a great advantage to the Government from this type of procedure if you have a well-balanced advisory group. There is divergence of thoughts there when they come forward; they do come forward with a majority view—at least, then, the promulgating authority, whether it be Congress or whether it be here, in this instance, the Secretary of Commerce, that it would be advantageous to have this body of, you might say, unbiased opinion.

Mr. MOSS. I have no further questions.

Mr. BLANTON. Mr. Chairman.

Mr. MOSS. Mr. Blanton.

Mr. BLANTON. I have only one questiton of Mr. Dixon.

Did you test materials of wearing apparel other than fabrics under the present act, the present law?

Mr. PAUL DIXON. We have, but not from the standpoint of doing anything about it. We have done this because of various reports we have received. I have been advised by Mr. Stringer that we have from time to time tested many of them. Some of them in many instances would fail to pass the present standard for wearing apparel and the law now applies only to wearing apparel and some of them would pass, but they are still flammable.

Mr. BLANTON. I was speaking of wearing apparel, but I am talking about wearing apparel other than fabrics. We call this act the Flammable Fabrics Act. Did you include all the wearing apparel at present?

Mr. PAUL DIXON. Yes. When we have reason to believe, upon inspection or any way that it comes to our attention that any of these things might be questionable, obviously we test.

Mr. BLANTON. What I was thinking about particularly is fur, a fur coat.

Mr. PAUL DIXON. Well, Mr. Stringer tells me that it is absolutely safe.

Mr. BLANTON. That is pretty good, absolutely safe.

Mr. PAUL DIXON. That is a pretty board statement. We have fake furs now that look as much like fur as fur does itself. They are fabric but they are not fur.

Mr. BLANTON. But the present act does allow you to go into these things rather than to be limited to fabrics, am I right?

Mr. PAUL DIXON. Yes, sir. We believe we have the right. This 192–53 covers vinyl plastic film so that we have the answer just in that, commercial standards.

Mr. BLANTON. This new proposed amendment, Mr. Dixon, would of course expand it to household furnishings.

Mr. PAUL DIXON. That is right, or other products. That is right. It is rather broad.

Mr. BLANTON. Is this limited to inside the house per se or are you going to broaden it out?

Mr. PAUL DIXON. It is defined in the bill. The term "interior furnishing" means any type of furnishing made in whole or in part of fabric or related material and ordinarily manufactured, sold and intended for use in home, offices and places of assembly. The word "in" is there.

I think if it was out in the front yard or outside, you would have a little trouble.

Mr. BLANTON. Getting back to the foreign fabrics mentioned a few minutes ago, it doesn't make any difference under the present or future act of the origin of the material. They still have to pass the present test?

Mr. PAUL DIXON. That is correct, sir.

Mr. BLANTON. Mr. Chairman, that is all the questions I have.

Mr. Moss. If there are no further questions; I want to thank you, Mr. Chairman, and the members of your staff, for your appearance. It has been very constructive and helpful to the committee.

Mr. Moss. I would like to now welcome back to the witness stand Dr. George Silver, Deputy Assistant Secretary for Health and Scientific Affairs, Department of Health, Eduaction, and Welfare, who will be available to conclude the presentation of the Department which was interrupted during the last session of the committee by the quorum bells.

I might take this moment to observe that immediately at 12 o'clock an important matter will be called up in the House and it will be necessary that we terminate the hearing at 12 o'clock in order to permit the Members' attendance.

STATEMENTS OF DR. GEORGE A. SILVER, DEPUTY ASSISTANT SECRETARY FOR HEALTH AND SCIENTIFIC AFFAIRS, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE; DR. RICHARD E. MARLAND, DIRECTOR, INJURY CONTROL PROGRAM, BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL; WILLIAM V. WHITE, CHIEF OF LIAISON SERVICES, INJURY CONTROL PROGRAM; AND THEODORE ELLENBOGEN, ASSISTANT GENERAL COUNSEL

Dr. SILVER. Mr. Chairman, I am accompanied today by Mr. Theodore Ellenbogen on my right, who is the Assistant General Counsel of our Legislative Division; Dr. Richard Marland, Chief of the injury control program of the Public Health Serivce; and Mr. William White, the Chief of the Liaison Services of that same injury control program. On Mr. Marland's left, Mr. William Goodrich, the Assistant General Counsel, Food and Drug Division, is in the audience and available for questions.

Mr. Moss. As I recall when the hearing terminated at the last session, we had just had a demonstration of some fabrics, and you had a number of additional items with you. I wonder if you have those today and if you would care to discuss them for the benefit of the committee members.

Dr. SILVER. Dr. Marland, would you like to continue the demonstration.

Dr. MARLAND. Mr. White has fabrics with him and garments which will illustrate fabrics that are available.

Mr. Moss. I wonder if during the course of that presentation you might explain the reason for the availability in England and not in the United States of certain of the items alluded to in the original testimony. Is there a legal requirement in England for the flameproofing of certain types of fabrics?

Dr. MARLAND. Yes, sir. England, there are performance requirements for fabric described in flammability regulation B.S. 3121, passed in 1959, and has been effective in England since that time.

Mr. Moss. Have you any statistical data indicating the effect upon the prices of fabrics as a result of flameproofing requirements?

Dr. MARLAND. I do not have specific statistics but I could provide at some later time for the record if they are available. Suffice it to say that such garments are more expensive than those that are untreated or not flame retardant.

Mr. Moss. Do you have any statistics to indicate the magnitude of the difference in cost?

Dr. MARLAND. I do not at this time.

Mr. Moss. Would you undertake to secure that information for the committee and, with no objection from the members, we will hold the record at this point and receive that.

Dr. MARLAND. Very well.

(The information requested follows:)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE STATEMENT ON EFFECT OF 1959 BRITISH FLAMMABLE FABRICS LAW ON COST OF FABRICS

The Department has been informed that the British Government does not have available at this time data on the effect of the 1959 British flammable fabrics law on the cost of fabrics. Mr. Brian Young, of the British Information Service, now is attempting to gather these data and they will be forwarded to the Committee at the earliest possible date.

Mr. WHITE. Mr. Chairman, I would like to make a general statement regarding cost. We are talking about two processes. One is the addition of treatment to cotton or, say, loose-fiber fabrics with the addition of the treatment costs, a standard sheet costing about $3 would sell for approximately $4. This has been estimated by some of the people in the textile industry to be the figure at the last hearing. This is not a price on quantity nor does it make any provision for improved technology. The state of the art is rather crude at this time.

The second approach is through the use of inherently flame retardant fibers. These are usually synthetic fibers woven into the fabric and made into decorator materials. These are used primarily as drapes, rugs, and other furnishings. These fiberglass and monocrylics are competitive with other good quality decorator fabrics and materials that are on the market today.

Mr. Moss. Mr. Blanton.

Mr. BLANTON. Mr. Chairman. At this point I know this would take some research, but can you supply us the effect on cotton product sales in England with relation to before the enactment of this flammable products act that they have in England and the market of cotton products in England now, if it wouldn't be too much trouble? I will appreciate it.

Dr. MARLAND. If such statistics are available, we will provide them for the record, sir.

Mr. BLANTON. I would appreciate it.

Mr. Moss. Would the gentleman yield? Wouldn't it be necessary in order for those to be meaningful for this hearing to have the curve showing the historic trend, because you said this was enacted in 1959 for an 8-year period prior so that we would have some cognizance of the trend in synthetics and determine whether it was accelerated as a result of the enactment of this?

Mr. BLANTON. I appreciate your making the point clear, Mr. Chairman, because that is exactly what I am interested in.

Mr. MOSS. Would you undertake to develop that? I imagine if you have a problem, we could probably get that material from the Department of Commerce.

(The information to be furnished follows:)

DEPARTMENT OF COMMERCE,
THE ASSISTANT SECRETARY OF COMMERCE,
Washington, D.C., July 15, 1967.

Hon. JOHN E. MOSS,
House of Representatives,
Washington, D.C.

DEAR MR. MOSS: During hearings before your subcommittee, the Department of Health, Education, and Welfare was asked to furnish information on the effect of British flammable fabrics regulations upon production and sales in the United Kingdom of children's nightdresses and the fabrics from which such garments are made. The Department of Health, Education, and Welfare requested our assistance in obtaining this information and also requested that we report the results of inquiries directly to you.

We have found that information of a statistical nature bearing on these questions is not available for the United Kingdom, nor were we able to obtain other factual information that would indicate the effects of this legislation upon production and sales of nightdresses and fabrics in the United Kingdom.

Our Embassy in London, however, has reported that their inquiries did elicit general opinions that since the effective date of the British regulations, known as The Children's Nightdresses Regulations 1964, there has been a trend away from the traditional cotton wynceyette fabrics (which would require treatment to comply with the regulation) to fabrics of brushed nylon (which would not require treatment). It was also observed that some manufacturers of nightwear had shifted from nightdresses to pajamas. No statistical data to measure the extent of these shifts could be obtained.

The Embassy has advised us of new regulations which will replace the Children's Nightdresses Regulations 1964. These new regulations, cited as the Nightdresses (Safety) Regulations 1967, come into operation September 1, 1967. They extend the regulation to adult as well as children's nightdresses but permit the sale of adult nightdresses bearing labels warning of their flammability. Copies of both the Children's Nightdresses Regulations 1964 (attachment A) and of the Nightdresses (Safety) Regulations 1967 (attachment B) are enclosed.

I hope this information will be useful.

Sincerely yours,

STANLEY NEHMER,
Deputy Assistant Secretary for Resources.

ATTACHMENT A

No. 1153, CONSUMER PROTECTION, THE CHILDREN'S NIGHTDRESSES REGULATIONS 1964
1964

Made, July 23, 1964; laid before Parliament, July 29, 1964; coming into operation, October 1, 1964

In pursuance of sections 1 and 2 of, and paragraphs 3 and 7 of the Schedule to, the Consumer Protection Act 1961, and after consulting with such persons and bodies of persons as appear to me to be requisite, I hereby make the following Regulations:—

Materials to be used

1.—(1) A children's nightdress shall not be made of, or trimmed below the waist or elbow with, any fabric of a kind not capable of satisfying the performance requirements specified in the British Standard Specification "Performance Requirements of Fabrics described as of Low Flammability B.S. 3121: 1959" published on 23rd March 1959.

For the purposes of this paragraph, the reference in clause 3 of the said specification to "B.S. 2963" shall be construed as a reference to the British Standard Specification "Tests for the Flammability of Fabrics B.S. 2963: 1958", as amended by Amendment No. 1 published on 27th November 1959.

(2) Where fabric with which a children's nightdress is made or trimmed contains fibres made of a synthetic substance which will melt with the application of heat—

(*a*) any fabric stitched to that fabric below the waist or elbow of the nightdress shall be of the same kind, or of a kind consisting wholly of fibres which will melt with the application of heat; and

(*b*) any thread with which that fabric is stitched shall be of a kind which will melt with the application of heat.

(3) Nothing in this Regulation shall prohibit the use of elastic or elastic thread for shirring.

Labelling

2.—(1) Where a children's nightdress is made of a fabric which has been treated with chemicals to make it safer from fire, that nightdress shall bear a warning against washing it with soap or soap powder and against boiling or bleaching it.

(2) The warnings required by this Regulation shall be set out in legible and durable characters upon a durable label stitched to the nightdress:

Provided that until 1st April 1965 it shall be a sufficient compliance with this paragraph if the warnings are set out as aforesaid upon a removable ticket attached to the nightdress.

Goods already manufactured

3. As respects the requirements of these Regulations, subsections (1) and (2) of section 2 of the Act (which prohibits sales and possession for sale of goods and component parts not complying with regulations) shall apply in relation to goods and component parts manufactured before the coming into operation of these Regulations notwithstanding anything in subsection (4) of that section (which exempts such goods and parts unless regulations otherwise provide).

Local authorities

4.—(1) The Schedule to the Act shall have effect in relation to goods to which these Regulations apply.

(2) Any test of goods to which these Regulations apply, being a test such as is referred to in paragraph 2 of the Schedule to the Act (which empowers a local authority to purchase goods for the purpose of a test) shall be carried out, at the expense of the local authority, by such person or body as may be authorized by the Secretary of State under this Regulation to carry out such tests.

(3) In relation to goods to which these Regulations apply "local authority" in the Schedule to the Act and paragraph (2) of this Regulation shall mean the council of a county borough, the council of a London borough or the Common Council of the City of London; as respects any non-county borough or urban district which has according to the last published census for the time being a population of 60,000 or upwards, the council of the borough or urban district; and as respects any other area the council of the county; and, in Scotland, the council of any county or any town.

(4) The reference in paragraph (3) of this Regulation to a London borough shall, until 1st April 1965, be construed as a reference to a metropolitan borough.

Interpretation

5.—(1) In these Regulations—

"the Act" means the Consumer Protection Act 1961; and

"children's nightdress" means a nightdress which—

(*a*) has a finished garment chest measurement not exceeding 38 inches, and

(*b*) is of a length which, measured from the highest point of the shoulder to the bottom of the garment, does not exceed 46 inches.

not being a nightdress—

(i) which is so made or designed that is is unsuitable for wear by persons under the age of 13, or

(ii) which is designed as an infant's gown suitable for wear by newly-born babies.

In this definition "finished garment chest measurement" means twice the measurement of the garment across the chest when the garment is laid out as flat as possible without distorting its natural two-dimensional shape.

(2) The Interpretation Act 1889 shall apply for the interpretation of these Regulations as it applies for the interpretation of an Act of Parliament.

Citation and comment

6. These Regulations may be cited as the Children's Nightdresses Regulations 1964 and shall come into operation on 1st October 1964.

HENRY BROOKE,
One of Her Majesty's Principal Secretaries of State.

EXPLANATORY NOTE

(This Note is not part of the Regulations, but is intended to indicate their general purport.)

By the Consumer Protection Act 1961 the Secretary of State is empowered to make regulations imposing requirements, in respect of any prescribed class of goods, to prevent or reduce risk of death or personal injury.

These Regulations impose such requirements in relation to children's nightdresses (as defined in Regulation 5(1)) and accordingly under the Act, subject to certain exceptions, no person may sell or have in his possession for sale a children's nightdress not complying with the Regulations.

Regulation 1 relates to the materials used in the garments and, among other things, requires any fabric used to be of a kind capable of satisfying the requirement of the British Standard for fabrics "described as of low flammability".

Regulation 2 relates to the labelling of nightdresses made of fabrics which have been treated with chemicals to make them safer from fire.

Under Regulation 3 the prohibition on sale of goods not complying with the Regulation will apply to goods manufactured before the coming into operation of the Regulations.

Regulation 4 makes provision as regards enforcement, in particular as to the local authorities responsible.

ATTACHMENT B

No. 839, CONSUMER PROTECTION, THE NIGHTDRESSES (SAFETY) REGULATIONS 1967

Made, May 29, 1967; laid before Parliament, June 6, 1967; coming into operation, September 1, 1967

In pursuance of sections 1 and 2 of the Consumer Protection Act 1961 and of the Schedule to that Act as amended by the London Government Act 1963, and after consulting with such persons and bodies of persons as appear to me to be requisite, I hereby make the following Regulations:—

1. A child's nightdress shall comply with the requirements specified in the Schedule to these Regulations.

2. A nightdress (not being a child's nightdress or an infant's gown) shall either comply with the requirements specified in the Schedule to these Regulations or have stitched to and clearly displayed inside it a durable label bearing the following words set out in legible and durable characters:—

"WARNING—KEEP AWAY FROM FIRE":

Provided that until 1st March 1968 it shall be a sufficient compliance with this Regulation if those words are set out as aforesaid on a removable ticket attached to the nightdress.

3.—(1) Where a nightdress (not being an infant's gown) is made of a fabric which has been treated with chemicals to make it safer from fire, that nightdress shall bear a warning against washing it with soap or soap powder and against boiling or bleaching it.

(2) The warnings required by this Regulation shall be set out in legible and durable characters on a durable label stitched to and clearly displayed inside the nightdress.

4. Until 1st December 1967 nothing in the foregoing provisions of these Regulations shall apply to—

(*a*) any garment suitable to be worn by a newly-born baby; or

(*b*) any nightdress which is of a length which, measured from the highest point of the shoulder to the bottom of the garment, does not exceed 45 inches, and is not a child's nightdress.

5. As respects the requirements of these Regulations, subsections (1) and (2) of section 2 of the Act (which prohibits sales and possession for sale of goods and component parts not complying with regulations) shall apply in relation to goods and component parts manufactured before the coming into operation of these Regulations notwithstanding anything in subsection (4) of that section (which exempts such goods and parts unless regulations otherwise provide).

6.—(1) The Schedule to the Act shall have effect in relation to goods to which these Regulations apply.

(2) Any test of goods to which these Regulations apply, being a test such as is referred to in paragraph 2 of the Schedule to the Act (which empowers a local authority to purchase goods for the purpose of a test) shall be carried out, at the expense of the local authority, by such person or body as may be authorised by the Secretary of State under this Regulation to carry out such tests.

(3) In relation to goods to which these Regulations apply "local authority" in the Schedule to the Act and paragraph (2) of this Regulation shall mean the council of a county borough, the council of a London borough or the Common Council of the City of London; as respects any non-county borough or urban district which has according to the last published census for the time being a population of 60,000 or upwards, the council of the borough or urban district; as respects any other area in England and Wales, the council of the county; and, in Scotland, the council of any county or any town.

7.—(1) In these Regulations—

"the Act" means the Consumer Protection Act 1961 as amended by the London Government Act 1963;

"child's nightdress" means a nightdress which—

(*a*) has a finished garment chest measurement not exceeding 38 inches;

(*b*) is of a length which, measured from the highest point of the shoulder to the bottom of the garment, does not exceed 46 inches;

(*c*) is not so made or designed as to be unsuitable to be worn by a person under the age of 13 years; and

(*d*) is not an infant's gown;

"finished garment chest measurement" means twice the measurement of the garment across the chest (or, in the case of an infant's gown, across the narrowest part of the garment being not less than 3 inches, nor more than 5½ inches, below the highest point of the shoulder of the garment) when the garment is laid out as flat as possible without distorting its natural two-dimensional shape;

"infant's gown" means a garment suitable to be worn by a newly-born baby and having a finished garment chest measurement not exceeding 21 inches;

"nightdress" does not include a man's nightshirt.

(2) The Interpretation Act 1889 shall apply for the interpretation of these Regulations as it applies for the interpretation of an Act of Parliament.

8. The Children's Nightdresses Regulations 1964 are hereby revoked.

9. These Regulations may be cited as the Nightdresses (Safety) Regulations 1967 and shall come into operation on 1st September 1967.

ROY JENKINS,
One of Her Majesty's Principal Secretaries of State

SCHEDULE

Regulations 1 and 2

REQUIREMENTS FOR THE PURPOSES OF REGULATIONS 1 AND 2

1. The nightdress shall not be made of, or trimmed below the waist or elbow with, any fabric of a kind not capable of satisfying the performance requirements specified in the British Standard Specification "Performance Requirements of Fabrics described as of Low Flammability B.S. 3121: 1959" published on 23rd March 1959.

For the purposes of this paragraph, the reference in clause 3 of the said specification to "B.S. 2963" shall be construed as a reference to the British Standard Specification "Tests for the Flammability of Fabrics B.S. 2963: 1958", as amended by Amendment No. 1 published on 27th November 1959.

2. Where a fabric with which the nightdress is made or trimmed contains fibres made of a synthetic substance which will melt with the application of heat—

(*a*) any fabric stitched to that fabric below the waist or elbow of the nightdress shall be of the same kind, or of a kind consisting wholly of fibres which will melt with the application of heat; and

(*b*) any thread with which that fabric is stitched below the waist or elbow of the nightdress shall be of a kind which will melt with the application of heat.

3. Nothing in this Schedule shall prohibit the use of elastic or elastic thread for shirring.

79–071—67——7

EXPLANATORY NOTE

(*This Note is not part of the Regulations.*)

By the Consumer Protection Act 1961 the Secretary of State is empowered to make regulations imposing requirements, in respect of any prescribed class of goods, to prevent or reduce risk of death or personal injury.

These Regulations impose such requirements in relation to nightdresses, and accordingly under the Act, subject to certain exceptions, no person may sell or have in his possession for sale a nightdress not complying with the Regulations.

Regulation 1 relates to the materials used in children's nightdresses (as defined in Regulation 7) and, among other things, requires any fabrics used to be of a kind capable of satisfying the requirements of the British Standard for fabrics "described as of low flammability". The relevant publications, specified in the Schedule, may be obtained from the British Standards Institution.

Regulation 2 requires adults' nightdresses to bear a warning label unless they comply with the requirements imposed in relation to children's nightdresses.

Regulation 3 requires a label in the case of nightdresses made of fabrics which have been treated with chemicals to make them safer from fire.

Regulation 4 exempts certain garments from the Regulations until 1st December 1967.

Regulation 5 provides that goods shall be subject to the Regulations notwithstanding that they were manufactured before the coming into operation of the Regulations.

Regulation 6 makes provision as regards enforcement.

Regulation 8 revokes the Children's Nightdresses Regulations 1964.

Mr. Moss. Mr. Keith.

Mr. KEITH. Could you describe briefly the content and character of the English law on this subject? I think we assumed that it was perhaps substantially as the one before us. Is that so?

Dr. MARLAND. I would read, if you care, a brief summary which is not a quotation which does describe the British act.

Mr. KEITH. Has it been already entered for the record?

Dr. MARLAND. To my knowledge, no.

Mr. KEITH. Pardon?

Dr. MARLAND. Not to my knowledge.

Mr. KEITH. I think it should be heard because what you are sponsoring here apparently is substantially the same as the British statute.

Dr. MARLAND. There is very little similarity between the proposed amendments to the existing Flammable Fabrics Act in this country and that which has been enacted under British law.

Mr. KEITH. How long is your digest?

Dr. MARLAND. There are three very short paragraphs.

All night dresses must satisfy the performance requirements specified in the British standard specification: "Performance requirements of fabrics described of low flammability B.S. 3121:1959." The act is limited to (1) a finished garment with a chest measurement when laid out flat not exceeding 38 inches and (2) one whose length when measured from the highest point of the shoulder to the bottom of the garment does not exceed 46 inches. Further exceptions are garments so made that it is unsuitable for wear by persons under the age of 13 or which is made or designed as an infant's gown suitable for wear by newly born babies.

The regulation deals with labeling only of night dresses which have been treated with flame-retarding chemicals.

You can see that this deals only with the night wear customarily worn by children and does not include the decorative fabrics, the household fabrics, and does not extend to all fabrics worn.

Mr. KEITH. We were perhaps allowed to gather a misleading impression from the response of an earlier witness to a question along these lines. My recollection is that when asked about a Tennessee firm producing flame-resistant coats for sale in Great Britain the response was that they have a flammable fabrics law over there, which indicated to me that these coats were manufactured in this country to comply with the British law. That impression doesn't seem to stand up after what you have just read.

Dr. MARLAND. This is correct. The fabrics that are manufactured or fabrics that are sold in England are made from fibers produced and manufactured in this country.

Mr. KEITH. But it is not by reason of a domestic law in England that requires it? I recall a child's coat which was offered as evidence as to how flame-resistant products are not offered for sale in this country.

Dr. MARLAND. This child's bathrobe which Mr. White has is a type that is not offered for sale in this country. It is made of materials manufactured in this country and it is sold in England. It does comply with their regulation on flammable fabrics.

Mr. KEITH. In other words, I was wrong. The impression given by the earlier witness was correct that if you want to sell a child's coat of this size, it has to be of a nonflammable or flame-resistant material?

Dr. MARLAND. That is correct. This coat, of course, is a bathrobe.

Mr. KEITH. It is my recollection that another coat of a very flammable material was used to show what could happen in this country and couldn't happen in England, is that correct? You had a coat of a lighter red.

Mr. WHITE. Sir, I believe that was a piece of a blanket that was 88 percent rayon and 12 percent acrylic that had been involved in a reported accident case. We had a swatch from that blanket.

Mr. KEITH. Could that be sold in England?

Mr. WHITE. To my knowledge there would be no restriction on it in England. This was a full-sized blanket that the swatch was cut from.

Mr. KEITH. Do you know of any other country that has taken steps comparable to those proposed here?

Dr. MARLAND. No, sir. I know of no other country with similar legislation. I think it is pertinent to point out, however, that the United States enjoys a very unenviable position in regard to the injuries and fatalities stemming from all types of fire and explosion.

They do not categorize them down to the form of death and injury which we would all like and which of course would be possible if we were to have the mandate of Congress to develop these data under the amended Flammable Fabrics Act.

However, the total statistics show that the United States ranks second from the bottom in disability and mortality due to all fires and due to deaths and injuries due to fires and explosions. Only Saudi Arabia has a greater rate.

(Table showing data on accidents and homicides, 1960–62, for selected countries, follows:)

Death rates for specified types of accidents and homicide: Selected countries, 1960–62 (supplied by the Department of Health, Education, and Welfare)

Country	All accidents (AE-138–AE-147)	Motor vehicle (AE-138)	Other transport (AE-139)	Poisoning (AE-140)	Falls (AE-141)	Machinery (AE-142)	Fire and explosion (AE-143)	Hot substance, etc. (AE-144)	Firearm (AE-145)	Drowning (AE-146)	All other accidents (AE-147)	Homicide (AE-149)
South Africa	60.7	27.3	3.0	1.7	6.9	0.6	3.6	0.6	0.7	6.5	9.8	----
United Arab Republic	61.2	2.6	2.0	.7	3.2	.1	14.2	.6	0	6.4	31.4	----
Canada	53.3	20.9	3.2	2.0	9.0	1.3	3.3	.3	1.2	4.9	7.2	----
Chile	71.9	7.6	----	----	----	----	----	----	----	----	----	----
Colombia	48.9	8.6	1.1	1.5	7.2	.1	3.8	.1	.4	8.9	17.2	----
Costa Rica	34.3	6.1	----	----	----	----	----	----	----	----	----	----
Dominican Republic	17.4	4.6	----	----	----	----	----	----	----	----	----	----
El Salvador	27.7	6.8	.7	1.1	7.0	.1	1.4	.6	.9	4.2	4.9	30.3
Guatemala	34.0	9.2	----	----	----	----	----	----	----	----	----	----
Mexico	39.9	3.1	----	----	----	----	----	----	----	----	----	----
Panama	34.4	5.4	1.2	1.6	4.2	.5	1.7	1.3	1.4	6.6	10.5	----
Puerto Rico	32.2	9.2	.5	.5	5.4	.5	1.6	.2	.5	5.0	8.8	----
Trinidad and Tobago	31.3	14.6	1.8	.5	3.3	.5	1.1	1.1	.3	4.3	3.8	----
United States	51.7	21.2	2.3	1.7	10.5	1.1	4.0	.2	1.3	2.9	6.5	4.7
Venezuela	43.0	16.3	1.2	1.1	4.6	.3	2.6	1.2	1.8	5.9	8.0	7.3
Ceylon [1]	29.2	2.0	----	----	----	----	----	----	----	----	----	----
Hong Kong	23.6	5.4	2.1	.7	3.9	.1	1.2	1.0	0	5.5	3.7	----
Israel [2]	29.8	9.0	----	----	----	----	----	----	----	----	----	----
Japan [1]	43.5	11.6	4.6	1.4	4.4	.5	1.6	.4	.1	7.6	11.3	----
Singapore	21.2	8.4	.6	.6	2.8	----	----	.9	.1	4.0	3.8	----
Austria	66.7	26.5	4.0	4.3	15.6	.7	.9	.8	.2	3.5	7.2	1.2

Belgium	53.3	18.7	1.0	2.1	9.1	.2	.4	.4	.1	2.9	18.4	0
Czechoslovakia	47.9	13.6	3.9	2.9	11.5	.5	1.1	.3	.4	3.8	9.9	----
Denmark	46.7	17.7	2.7	2.8	18.0	.2	.8	.1	.2	1.7	2.5	.5
Finland	54.1	17.9	5.4	4.2	12.3	.5	1.4	.4	.8	6.8	4.4	----
France	62.5	19.1	1.3	2.8	14.5	.1	.3	1.4	.5	5.4	17.1	----
Germany [3]	57.6	26.0	2.5	1.4	16.9	.9	.5	.8	.2	2.1	6.2	----
West Berlin	50.5	13.1	1.2	2.7	28.7	.2	.6	.8	----	1.2	2.0	1.2
Greece	31.2	5.1	1.1	1.3	9.2	1.3	.4	1.6	1.0	3.3	7.1	----
Hungary	34.9	6.7	5.3	1.6	10.1	.3	1.2	.3	.7	2.8	5.9	----
Ireland	32.4	8.8	1.7	1.0	9.2	.2	.9	1.6	.3	5.0	3.7	----
Italy [5]	41.2	17.3	2.2	1.1	11.5	.2	.8	.8	.4	2.9	4.0	----
Netherlands	39.2	17.9	2.6	1.0	10.5	.4	.5	.3	.1	3.3	2.6	.3
Norway	47.1	9.0	7.5	1.7	17.9	.3	.5	.2	.6	5.3	4.1	----
Poland	33.9	4.5	4.4	3.2	1.2	.2	.5	.6	.2	3.9	15.2	----
Portugal	39.5	9.6	3.2	1.0	3.6	.3	3.9	.9	.5	7.7	3.8	.9
Spain [1]	30.1	6.7	1.7	.9	4.4	.6	.4	.8	.5	3.0	11.1	----
Sweden	45.7	14.3	3.7	1.6	17.0	.4	1.1	.1	.5	2.9	4.1	.6
Switzerland [1]	60.4	21.2	3.9	2.5	19.3	.5	.8	.8	.5	3.9	7.0	----
England and Wales	38.6	14.3	1.4	3.2	11.9	.5	1.4	.2	.2	1.9	3.6	.5
Northern Ireland	35.3	12.1	.7	2.1	9.8	.7	2.8	.6	.4	2.3	3.8	.8
Scotland	47.9	13.4	2.3	5.4	13.5	.4	2.3	.2	.2	3.7	6.4	.7
Australia	52.2	25.5	2.9	1.7	8.7	.8	2.0	.3	1.0	3.9	5.4	1.5
New Zealand [1]	43.1	13.1	3.6	1.7	12.8	1.6	1.1	.3	.8	3.4	4.7	----

[1] 1959–61.
[2] Jewish population only.
[3] Federal Republic.

NOTE.—Death rates for each type of accident were obtained by applying the percentage distribution by type in a year to the rate for "all accidents." Countries are listed alphabetically by continent.

Source: (1) Demographic yearbook, 1962, tables 4 and 5; (2) Unpublished tabulation of accident mortality by age, sex, and selected country and type of accident; (3) Unpublished tabulation of accident mortality and homicide by age, sex, and selected country; (4) Epidemiology and Vital Statistics Report, 1965, vol. 18, pp. 117–124, World Health Organization.

Mr. KEITH. That is a surprising statement to me, bearing in mind the tinderbox nature of much of the eastern world. Looking, for example, at Hong Kong, you wonder why that whole hillside doesn't go up in smoke and looking at the fleet of junks side by side, dry timber. You are sure of your statistics in this regard?

Dr. MARLAND. Yes, sir. These are worldwide data of which ours, of course, are from the Bureau of the Census and the National Health Survey statistics.

Mr. MOSS. While we are speaking statistically, I wonder if it might be possible to develop the curve of involvement of children in injuries or death from burns since the institution of the new standards in Britain?

Dr. MARLAND. Yes, sir. These data are available to us. Might I very quickly point out that the injury control program, formerly the Division of Accident Prevention in the Public Health Service, was not organized until 1961. The data which we have obtained relating to the injuries and fatalities stemming from the involvement of fabrics, particularly clothing, stem only from that point in time. Prior to that time there were very few if any reasonable sources.

Mr. MOSS. I was asking you for the statistics from England.

Dr. MARLAND. From England. Very well. I understood the United States.

Dr. SILVER. We understand that children in the age group zero to 5 have almost three times as many deaths from this cause as compared with any other 5-year age group.

Mr. KEITH. What the chairman is trying to find out is the effectiveness of this kind of legislation in England.

Dr. SILVER. I understand, but what information we have indicates that it is a very serious problem here.

(The information requested follows:)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE STATEMENT ON EFFECT OF 1959 BRITISH FLAMMABLE FABRICS LAW ON DEATHS AND INJURIES DUE TO FABRICS

The Department has been informed that the British Government does not have available at this time data on the effect of the 1959 British flammable fabrics law on deaths and injuries due to fabrics. Mr. Brian Young, of the British Information Service, now is attempting to gather these data and they will be forwarded to the Committee at the earliest possible date.

Mr. MOSS. I have some statistics which at a later time I will place in the record regarding the deaths and injuries in these areas but I am interested in the experience of England since the adoption of the standards of 1959.

Now, if we can proceed with the demonstration.

Mr. WHITE. Mr. Chairman, I would prefer to come forward so that you could see these materials. We won't burn any more swatches, but I want to show the variety of the flame-retardant materials. This is a special material made with a fiber produced by the Du Pont Corporation. These, of course, are not available on the market. They are far more expensive than comparable cotton sleepers for children.

Mr. KEITH. Why did you say they are, of course, not available on the domestic market?

Mr. WHITE. Because there are no firms today that are producing clothing for children that is flame retardant on the American market.

Mr. KEITH. It must be much more expensive.

Mr. WHITE. That is found in materials sold to the General Services Administration.

The wearing qualities are stated to be six times as long but they are six times as expensive.

Mr. KEITH. A kid doesn't stay still for 6 years.

Mr. WHITE. This is another weave showing the Nomex fiber for a child's dress showing the different types of fabrics produced from this fiber.

Mr. KEITH. What is the cost factor here?

Mr. WHITE. I don't know, sir.

Mr. KEITH. I think you ought to know when you come up here because we have to take that into consideration. Six times is one thing, and a third is something else.

Mr. MOSS. Those figures of six times were supplied to you by the Du Pont Co.?

Mr. WHITE. Yes, sir.

Mr. MOSS. I wonder if you could determine, in seeking comparative costs, the experience that they had in the introduction of the numerous synthetics over the years and, as production increased, what was the cost curve on those fabrics?

Mr. WHITE. Yes, sir.

(The information requested follows:)

Department of Health, Education, and Welfare statistics on cost of several synthetic fabrics at time of introduction and later years of production

Fiber	Denier [1]	Year	Price per pound
Nylon staple	3	1945 (1 year)	$1.50
		1950 (5 years)	1.70
		1967 (22 years)	.96
Dacron polyester	3	1952 (1 year)	1.80
		1957 (5 years)	1.41
		1967 (15 years)	.72
Do	1½	1953 (1st year)	2.25
		1958 (5th year)	1.51
		1967 (14 years)	.72
Orlon acrylic staple	3	1950 (1st year)	1.75
		1955 (5th year)	1.25
		1967 (17th year)	1.06
Nomex	2 natural	1967 (1st year)	6.50
	2 green	1967	9.00
	½ green	1967	9.50
	½ natural	1967	7.00

[1] Fineness of yarn in terms of weight, the lower the denier the sheerer the fabric.

NOTE.—Price quotations: Ray Tyler, DuPont Corp., telephone report, Apr. 24, 1967.

Mr. MOSS. This is something of great significance. Volume reduces cost.

Mr. WHITE. As far as I know that is the only dress of that fiber available. It was just made up as a demonstration of the type of garment that could be made. I asked the cost but it was not available.

Mr. KEITH. I am glad you elaborated.

Mr. WHITE. These are cotton garments that have been treated with a chemical so that they will not support combustion. I think I described in the demonstration the other day that these are not available on the market either but have been treated to show that it can be done.

Mr. MOSS. I notice this is a Sears product. Is this Sears, Great Britain?

Mr. WHITE. No, sir; that is Sears of this country. The garment was bought from one of their outlets and then treated for a demonstration to show that it can be done.

Mr. Moss. What was the treatment cost? Do you have any idea?

Mr. WHITE. We have no figures on treatment costs because all of these are one-garment applications. They are experimental and are prohibitively expensive, I will assure you.

Mr. KEITH. Mr. White, this is altogether the case with our Federal agencies. They come in with an idea but we have to find out the cost. This is not directed to you, but to every agency official. If you are going to ask the Congress and perhaps the country to seriously consider this, you should share with us our concern as to the other details.

Mr. Moss. How many times can this garment be washed, or do you know, without losing its flame-retardant characteristics?

Mr. WHITE. The Department of Agriculture is our source of information on this. They have an experimental plant where they have treated cotton of similar weave and construction, and the figures we get from them show good retention in washing. There is a variation in the way the chemical is applied and the amount applied.

Mr. Moss. The Department of Agriculture then is doing the research in this area?

Mr. WHITE. In the application of the chemicals, that is correct.

Mr. Moss. The staff will request from the Department of Agriculture their estimates of the cost of treating such garments.

(The information requested appears on p. 171.)

Mr. WHITE. Our purpose in showing these fabrics was to demonstrate a variety of materials and weaves that industries could produce that would protect life. The only figures that we have on cost are projections on millions of yards furnished by Agriculture, and I would rather they would testify in regard to cost.

The only other item I have here is one that most people think would be very flammable which happens to be made of a monocrylic. I believe this one is Dynel, made by Union Carbide. It is available on the market today by Sears, Roebuck and priced at $8.95 on the last figures I have seen. Tennessee Eastman is the producer of the fiber Verel. They were requested to give prices to the British firm and purchase was made of the fiber from the plant in Eastport, Tenn., and converted to this garment and others for the British market.

Mr. Moss. Thank you.

Are there any further questions?

If not, gentlemen, unless you have further statements, I want to thank you for returning here. I regret the need for it, but I think it has been of material value to the subcommittee. The committee will now stand adjourned until 10 o'clock on Friday morning, when we will meet again in this room and we will have as our first witness Mr. J. L. Coley and other representatives of the industry.

(Whereupon, at 11:50 a.m., the subcommittee adjourned, to reconvene at 10 a.m., Friday, April 14, 1967.)

FLAMMABLE FABRICS ACT AND PRODUCT SAFETY COMMISSION

FRIDAY, APRIL 14, 1967

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to notice, in room 2123, Rayburn House Office Building, Hon. John E. Moss (chairman of the subcommittee) presiding.

Mr. Moss. The committee will be in order.

This morning we will continue our hearings on the Flammable Fabrics Act and on proposals to create a National Commission on Product Safety. Today we are going to hear from the representatives of industry.

I want to take the opportunity of acknowledging at this point that the delay in the hearing from industry witnesses was at the request of my ranking minority member, Congressman Keith, and he made that request so there would be ample time for preparation on the part of industry.

Our first witness this morning will be Mr. J. L. Coley of Russell Mills, Alexander City, Ala. I believe you are accompanied by Mr. W. F. Franck, Sale Knitting Mills, from Martinsville, Va. and Mr. L. D. Walker of Bassett-Walker.

Mr. COLEY. And Mr. Wentz from Pannill Knitting Co.

STATEMENT OF J. L. COLEY, VICE PRESIDENT, RUSSELL MILLS, ALEXANDER CITY, ALA.; ACCOMPANIED BY W. F. FRANCK, PRESIDENT, SALE KNITTING MILLS, MARTINSVILLE, VA.; L. D. WALKER, PRESIDENT, BASSETT-WALKER; AND EARL WENTZ, VICE PRESIDENT, PANNILL KNITTING CO., MARTINSVILLE, VA.

Mr. COLEY. Mr. Chairman and distinguished members of the House Committee on Interstate and Foreign Commerce, my name is James L. Coley, vice president, personnel and public relations, of Russell Mills, Inc., Alexander City, Ala.

I have with me Mr. W. F. Franck, president of Sale Knitting Co.; Mr. Dudley Walker, the president of Bassett-Walker Co.; Mr. Earl Wentz, vice president of the Pannill Knitting Co.

We are, as you mentioned earlier, industry representatives representing our manufacturers and not any particular other group.

I appear before you to urge your favorable consideration of H.R. 6142 introduced by Mr. Flynt of Georgia.

Russell Mills has produced high quality knit garments for more than 65 years. Our name is no doubt unfamiliar to you for we do not engage in extensive national advertising. Our principal customers are wholesale distributors, mail-order houses, and larger chain groups.

We consider ourselves good corporate citizens and we are vitally interested in adequate consumer legislation. The Flammable Fabrics Act has served an excellent purpose in consumer protection and the establishment of manufacturing standards.

We do not oppose regulatory legislation but we do seek to assure that such regulation not be needlessly punitive to the public. When the requirements of the regulation or its regulatory agency exceed the best interests of the consumer we feel that the consumer and the producer suffer. We do not believe that this is your desire.

We urge favorable consideration of H.R. 6142 because we feel that this act is in the best interests of the public.

We ask that you consider first the advantages of this bill to the consumer. This consumer is a living, breathing person to us. He is the customer for whom we produce the garment and if his self-interest is not met we cannot continue in business. He is our customer and your constituent. We want him served and protected.

How is this act in his best interest? In two very basic ways. First is in the matter of costs, what he has to pay for the garment. Second is in utility, comfort and convenience.

If flammability standards are to be set for apparel other than as it is intended to be worn of necessity the family will have to pay a higher price. If the normally unexposed part of a garment must meet the same standards as the exterior additional treatment will be necessary and in some garments this will amount to a 50-percent increase in sales price.

This forces the head of the family to pay more money for an added quality which he does not need. The low income groups who can stand a rise in cost the least would be hurt the most.

The sweat shirt has long been a staple of the outdoor laborer, the timber, construction, and farmworker. This low-priced garment gives him comfort and freedom of action. To increase its cost, restrict its usefulness, would hit hardest those least able to pay higher prices.

As mentioned earlier this can cuase the consumer to suffer from decreased comfort and convenience. The interior of a garment is planned to enhance its serviceability and versatility. Warmth, fit and absorption are qualities that are plus factors which may be lost if it becomes necessary to chemically treat the inside of a garment or to change the very nature of its structure or fiber content.

We favor standards for the uncovered or exposed part of any article of apparel as it is intended to be worn. We do not wish to subject the consumer to higher prices and the loss of significant quality factors merely to accommodate uses other than those for which the apparel was intended.

The manufacturers of the United States in the case of sweat shirts have met the standards for these garments as they are intended to be worn. They have met an even more exacting standard than that of the Trade Commission. They have met the "test of the marketplace" in utility, cost, comfort, convenience, safety, and protection.

These garments have proven their desirability by their continued growth in popularity and usefulness. In addition to the losses suffered

by the consumer when standards are applied to other than the intended use, the manufacturer suffers also. To set external flammability standards for the inside of a sweat shirt would involve many things.

First would come the additional processes and costly treatments which would be required. The physical appearance and properties of the garments would be effected and there is possibility that changes of fibers being used and the construction of the interior surface might be necessary.

Chemical treatments, substitution of higher priced manmade fibers, or similar changes would greatly increase the costs of production.

Increased costs, new and expensive processes always hurt the small manufacturer the most. There are many small manufacturers who will be sorely penalized if garment standards are based on other than their intended use.

The bill introduced by Mr. Flynt, H.R. 6142, is reasonable and protects the best interest of the public. To set standards for apparel as it was intended to be worn meets the requirements of consumer protection and allows the manufacturers to properly design and produce a garment with high utility at reasonable costs.

At this time, Mr. Franck would like to make a very short statement and then if the committee has questions these other gentlemen would be pleased to join us, naturally.

STATEMENT OF WILLIAM F. FRANCK, PRESIDENT, SALE KNITTING CO., INC.

Mr. FRANCK. Shall I go ahead now?

Mr. MOSS. Yes, certainly.

Mr. FRANCK. Unfortunately, I don't talk quite as fast as my other southern friend here.

My name is William F. Franck. I am president of the Sale Knitting Co., Inc. We have plants located in Martinsville and South Boston, Va. Our principal product is fleeced sportswear, commonly called sweatshirts. I am also speaking for two other sweatshirt manufacturers in our area: Bassett-Walker Knitting Co., Inc., with plants in Bassett, Martinsville, and Stuart, Va. Mr. Walker is the president of that firm. He is on my right.

And Pannill Knitting Co., Inc., with plants in Martinsville and Stuart, Va. Mr. Earl Wentz, vice president of the Pannill Knitting Co., is on our far left. Our three companies manufacture between 60 and 70 percent of all sweatshirts produced in this country. Together we employ in excess of 4,200 people and our combined sales volume in 1966 was in excess of $50 million. This represents shipments of over 60 million garments per year.

I am here to testimy in favor of H.R. 6142 and H.R. 7471 as introduced by Congressman Flynt of Georgia and Congressman Jonas of North Carolina.

On July 13, 1966, the Federal Trade Commission proposed an addition to rule 6 of the Commission's rules and regulations under the Flammable Fabrics Act. This proposal was designated as rule 6(e) and was directed specifically to sweatshirts. The proposed rule in effect stated that wearing a sweatshirt inside out, with the fleeced side exposed, could be considered as "normal" wear, thereby bringing the unexposed or fleeced side of the shirt under the act.

The implementation of this proposed rule would prove costly to our industry as well as to the ultimate consumer. The popularity of sweatshirts has grown tremendously in the past decade. They are now a staple item of wearing apparel in almost every household in the country. I feel sure that there is no other single item of clothing which furnishes as much weight and warmth for the price.

The raised fiber, or fleeced, side of the sweatshirt was devised to provide a soft, absorbent—and underline "absorbent"—and comfortable surface next to the skin as well as to increase the basic warmth properties of the fabric. It is by its very nature designed to be, and is, a covered and unexposed part of the article of wearing apparel. Certainly the fleeced side serves practically no purpose if the garment is to be worn inside out.

We agree with the Federal Trade Commission that there have been some incidents of inside-out wear of sweatshirts by teenagers. We submit, however, that this is simply another of the innumerable teenage fads, and that there is every likelihood that this fad will die as quickly as most.

The main point here, however, is that the Federal Trade Commission agrees that they know of no accidents up until now caused by these sweatshirts. We have been in production of various types of cotton-fleeced sweatshirts for over 30 years and I speak primarily of the Martinsville area.

The sweatshirt itself is probably 50 to 60 years old.

Even if the fleeced side of the shirt is brought under the act, the current test methods are most inconclusive in this matter. The fleeced side complies with the requirements of the act in as many cases as it fails. It appears that the results depend upon just which testing laboratory is performing the test.

Our industry would certainly be the first to want to cooperate if we felt that there was any real hazard in the wearing of a sweatshirt—even in wearing it inside out. Since we know of no proven injuries caused by the igniting of a sweatshirt, we do not feel that a hazard exists. This is borne out by the general public acceptance of this type of garment over the years, and the annual sale of from 50 to 75 million units. This is speaking for the Martinsville area. I would say the total number of units for the country would be in excess of 100 million units or maybe 125 million units.

The treating of this fabric with a permanent flame-retarding chemical would be extremely costly, dangerous to apply to the fabric, and would ultimately increase the price to the consumer. The purchaser of a sweatshirt now gets almost the equivalent warmth of a sweater at about a tenth of the cost. We feel certain that our industry is meeting a vital need in this respect.

If our industry were required to comply with a permanent type of fire retardant to correct a safety problem that we do not feel exists, we would be confronted with an increased equipment cost to the total industry of approximately $5 million on our combined production of 104,000 bales of cotton per year.

There would be a definite physical hazard to our operators—and I emphasize this point—in the handling of the chemicals required, in that inflammation of the skin results when it comes into contact with wet cloth and eyes are exposed to injury from the fumes of the chemicals.

For your information, formaldehyde seems to be one of the main ingredients of the fiber-retardant chemical.

The actual increase in the cost of the garment to the consumer would be approximately 40 percent more than at present. This is calculated on an average price garment.

We appreciate the fact that the Federal Trade Commission has been highly cooperative with our industry in trying to arrive at a fair solution to this difficult problem. We fully understand how the Trade Commission could interpret the act as it now reads to include garments being worn inside out.

We feel, however, that the wording of the act should be clarified and we believe this would be accomplished by the passage of H.R. 6142 and H.R. 7471.

In conclusion, we would urgently request your approval of H.R. 6142, introduced by Congressman Flynt of Georgia and the identical bill, H.R. 7471, introduced by Congressman Jonas of North Carolina.

These two bills would clarify what we feel was the intent of Congress when the act was passed; namely, that the "uncovered or exposed part of any article of wearing apparel" means "the uncovered or exposed part of such article as it was intended to be worn."

I would like to thank you for giving us a chance to make these few comments and we would certainly welcome any questions that you gentlemen might have to offer at this time.

Mr. Moss. Does that conclude the presentation?

Mr. FRANCK. Yes, sir.

Mr. Moss. Mr. Keith.

Mr. KEITH. Thank you, Mr. Chairman. I began to feel as I read your testimony that maybe I had been wrong about your taking all of our plants down south when I saw South Boston, but the next line further identified the location.

Mr. FRANCK. Yes, sir. That is Congressman Tuck's hometown, I guess you may know.

Mr. KEITH. Pardon?

Mr. FRANCK. Congressman Tuck's hometown.

Mr. KEITH. You mean Governor Tuck?

Mr. FRANCK. Ex-Governor Tuck, yes.

Mr. KEITH. I think your testimony is quite complete and answers questions that I had in mind as the problem has been unfolded here, but you state in your testimony that the Federal Trade Commission has never known of any injury, or words to that effect. Is that correct?

Mr. FRANCK. I state that there is no proven injury. We have seen cases whereby you feel that someone is trying to get on the bandwagon for some situation that may exist, but we don't have any one actually this has happened to.

Mr. KEITH. Is anybody here from the Federal Trade Commission?

Mr. COLEY. I have a copy of the hearings which were held back in October of the Federal Trade Commission and I can read from it if you would like. This was a part of the Cotton Council statement: In reply to a request by the council for the Commission's reason for proposing the amendment to rule 6, Mr. Charles F. Canavan, on August 18, serving as Acting Director of the Bureau of Textiles and Furs, provided the following information:

In making a recent investigation under the Flammable Fabrics Act, fabrics used in manufacturing of sweatshirts were tested. The plain surface side of these fabrics was found to pass the flammable fabrics test, but the raised surface side in a number of instances burned in less than 3½ seconds. Our investigation disclosed that the questioned fabrics were used by the manufacturers with the raised surface on the inside.

However, it also came to our attention that there is a current fad among some of the younger set to wear these shirts inside out so that the raised surface side of the garment is exposed.

The Commission, in reviewing the investigation, felt that it should not wait for an accident to happen and has proposed the stated amendment. I do not know of any accident up to now caused by these sweatshirts.

This was entered in their hearing.

Mr. Moss. By whom?

Mr. COLEY. This is part of an overall Federal Trade Commission hearing. This was a reply of Mr. Canavan to the National Cotton Council. There are people here from the National Cotton Council I believe that could verify that.

Mr. KEITH. What is Mr. Canavan's position; do you know?

Mr. COLEY. At that time he was serving as Acting Director of the Federal Bureau of Textiles and Furs, Federal Trade Commission.

Mr. KEITH. If you assume that their research had covered the period of years since the act was passed—just call it roughly 10 years—and you produce about 50 million of these sweatshirts a year——

Mr. COLEY. Yes, sir.

Mr. KEITH (continuing). There have been a half billion opportunities and they apparently couldn't uncover one solid case to support that recommendation.

Mr. COLEY. This is in relation to wearing the shirt wrong side out?

Mr. KEITH. Yes.

Mr. COLEY. Yes, sir, and I believe that the National Fiber Protection Association has also collected some of the statistics and they have found no instance of an accident involving a sweatshirt.

Mr. KEITH. Having worn a sweatshirt and having found the inside quality hasn't the absorbent characteristic that you like to have as you work more and the heat of the day develops, I have taken off the sweatshirt and put it on wrong side out intentionally.

Is that a unique development?

Mr. COLEY. Far be it from me to say that the Congressman is unique, but we find very few examples of this and I believe that studies have been made to show that it is being done more as a fad among teenagers in certain areas, not generally throughout the country.

Do you have a comment on that?

Mr. FRANCK. Actually, the Federal Trade Commission had a survey made along those lines and the National Cotton Council after having heard the results of the Federal Trade Commission hearing had a similar survey made.

The National Cotton Council's survey according to the Federal Trade Commission seemed to be a little bit more extensive and it appears that out of 2,800-and-some-odd children that they interviewed the parents of, they found that about 10 percent of those children at one time or another would wear their sweatshirts inside out, and we have quite a detailed description of that, but that would be about the percentage ratio.

Then of course the garment, everybody understands, is completely safe after it is washed. After it is washed you eliminate the problem so you have to take away a certain percentage of that.

We figure a net exposure of around 2 percent would be what we would be talking about.

Mr. KEITH. Two percent would be——

Mr. FRANCK. These are horseback.

Mr. KEITH (continuing). About 100,000?

Mr. FRANCK. Yes.

Mr. KEITH. That is a substantial number.

Mr. FRANCK. That could be a possible exposure if they were under the right conditions.

Mr. KEITH. Has it been found to the best of your knowledge that there has been any irritation caused by this chemical treatment to the wearer?

Mr. FRANCK. No, sir, not to the wearer. The principal argument that we would like to bring forth is the dangers to the operators who are making the fabric.

Mr. KEITH. I saw that in your testimony.

Mr. COLEY. This garment has not been worn extensively because this is still in the experimental stage so I don't think we would make a positive statement one way or the other when it comes in contact and you have perspiration over a long period of time.

Mr. KEITH. Other than the increased cost that might be incurred by such treatment, what other negative factors could follow from this treatment?

Mr. COLEY. Speaking first from the consumer standpoint, we find that most of these chemicals with which we have been working, remove the soft hand feel of the garment.

Mr. KEITH. Remove the what?

Mr. COLEY. The softness. The hand is the trade term for it, and the comfort and absorption. Is that what you say, Mr. Wentz?

Mr. WENTZ. Yes.

Mr. COLEY. These are the main factors, and the comfort factor, gives it a stiffness or harshness.

Mr. KEITH. I have no further questions, Mr. Chairman.

Mr. MOSS. I wonder if you could explain to me the statement that part of this was eliminated by washing?

Mr. COLEY. I think that was in Mr. Franck's statement. It is a soluble finish that he is talking about. You are talking about removing of the finish?

Mr. FRANCK. I believe I made the comment that we all agreed that after the garment had been washed the ultimate danger, if there were a danger, would definitely be eliminated.

Is that what you had reference to?

Mr. MOSS. Yes.

Mr. COLEY. He is talking about washing the chemical out. Is that what you are talking about?

Mr. MOSS. That is what I wanted to get clear. Is it your contention that if the garment had been chemically treated washing would remove whatever fire-retardant characteristics in it, or was it your intention to infer that in the washing process part of the fleecing would be lost and the possibility therefore of a flair fire occurring would be diminished?

Mr. FRANCK. The later comment is what I had reference to, the fact that you eliminate the sort of fibrous fuzz on the exterior of the fleece once it has been washed and the cloth begins to roll or mat up.

Mr. MOSS. This might interest you. We just did a little polling here. We had two parents side by side here. Mr. Dixon has a son and I have two daughters. We find in our cases we have 100 percent of reverse wearing of the sweatshirts.

Mr. COLEY. Our only comment is we are glad to see that they are wearing them. I would like to amplify this last statement of his. But in the testing before the Trade Commission you do not just simply wash it and test it. You wash it, then brush, and test it, and it is the brushing which causes it to fail to pass present flammability standards.

Mr. MOSS. I am correct that the Trade Commission only yesterday finalized their order which would require treatment of the sweatshirts by January 1, 1968?

Mr. COLEY. This is news to us.

Mr. WENTZ. Is this a fact?

Mr. MOSS. The record will be clarified on that. If I am correct we will publish it as part of the record in support of the order of the Commission.

(The information referred to follows:)

FEDERAL TRADE COMMISSION

Commissioners: Paul Rand Dixon, *Chairman;* Philip Elman, Everette MacIntyre, John R. Reilly, Mary Gardiner Jones

In the Matter of, Amending Rule 6 of the Rules and Regulations Under the Flammable Fabrics Act

TITLE 16—COMMERCIAL PRACTICES

CHAPTER 1—FEDERAL TRADE COMMISSION

SUBCHAPTER C—REGULATIONS UNDER SPECIFIC ACTS OF CONGRESS

Part 302—Rules and Regulations Under Flammable Fabrics Act

On July 13, 1966, the Federal Trade Commission issued a notice of proposed rule making whereby the Commission proposed to give consideration to an amendment of Section 302.6 (Rule 6) of Part 302, Rules and Regulations under the Flammable Fabrics Act. Such notice appeared on page 9684 of the Saturday, July 16, 1966, issue of the *Federal Register*.

The matter proposed for consideration was an amendment to Section 302.6 (Rule 6) of the Rules and Regulations under the Flammable Fabrics Act by adding a new paragraph thereto designated as paragraph (e) of Section 302.6 (Rule 6) specifying circumstances and conditions under which certain raised-fiber surfaces of articles of wearing apparel would or would not be subject to the provisions of the Flammable Fabrics Act and delineating the application of such Act to such products.

The notice provided that interested parties could participate by submitting in writing to the Federal Trade Commission, Washington, D.C. 20580, on or before the 23rd day of August, 1966, their views, arguments, or other data, and that written rebuttal could be submitted until September 13, 1966.

On request of certain interested parties for opportunity to orally present their views, arguments and data, an amended notice of proposed rule making was issued by the Commission on September 15, 1966, and published in the *Federal Register* on September 20, 1966. The amended notice of proposed rule making provided that interested parties could participate by submitting in writing to the Federal Trade Commission, Washington, D.C. 20580, on or before the 12th day of October, 1966, their views, arguments, or other data or by presenting such views, arguments and other data orally on that date at 10:00 a.m., E.D.T., Room 316, 1101 Building, 1101 Pennsylvania Avenue, N.W., in the City of Washington,

District of Columbia. The amended notice further provided that any person thereafter desiring to submit further views, arguments, or data could do so within fifteen days after the date of presentation of oral views.

Pursuant to the September 15, 1966 notice, an oral hearing was held on October 12, 1966. All persons wishing to orally present their views, arguments and data were afforded an opportunity to do so at that time. The views, arguments and data submitted pursuant to the July 13, 1966 and October 12, 1966 notices of proposed rule making have been made a part of the public record and have been considered by the Commission.

After consideration of all views, arguments and data submitted pursuant to the July 13, 1966 and October 12, 1966 notices of proposed rule making and of all pertinent information and material, the Commission has determined to amend Section 302.6 (Rule 6) of the Rules and Regulations by adding a new paragraph thereto designated as paragraph (e) of Section 302.6 (Rule 6) specifying the circumstances and conditions under which certain raised-fiber surfaces of articles of wearing apparel will or will not be subject to the provisions of the Flammable Fabrics Act and delineating the application of the Act to such products.

On the basis of the public record and all pertinent information and material available to the Commission, it is determined that the raised-fiber surfaces in certain articles of wearing apparel, including certain athletic shirts or so-called "sweat shirts", are, because of construction and design, capable of being worn with the raised-fiber surface exposed even though apparently originally designed to be worn with such surface on the inner side. It is further determined that in a substantial number of instances the aforesaid atheltic shirts or "sweat shirts" are worn with the raised-fiber surface uncovered or exposed by a certain segment of the public.

The Commission has receivd a considerable number of protests against the promulgation of a regulation on the subject in question. However, in view of the indications as to the usage of certain athletic or so-called "sweat shirts", it is determined that the public interest requires that the raised-fiber surface of "sweat shirts" and similar articles of wearing apparel which surface is capable of being worn as an uncovered or exposed part of an article of wearing apparel should be subject to the testing requirements of the Flammable Fabrics Act, particularly where such articles are actually worn with the raised-fiber surface exposed by a substantial segment of the public.

On the basis of information made available to the Commission by certain affected groups, the Commission is of the opinion that the articles of wearing apparel in question can be manufactured or treated in such a manner that the raised-fiber surface will meet the standards as to flammability specified by the Flammable Fabrics Act and that products of the type in question may be offered to the purchasing public in such a condition as to meet the standards specified by the Flammable Fabrics Act.

Accordingly, Section 302.6 (Rule 6) of Part 302, Rules and Regulations under the Flammable Fabrics Act is amended by adding a new paragraph thereto, designated as paragraph (e), which reads:

"(e) Where an article of wearing apparel has a raised-fiber surface which is intended for use as a covered or unexposed part of the article of wearing apparel but the article of wearing apparel is, because of its design and construction, capable of being worn with the raised-fiber surface exposed, such raised-fiber surface shall be considered to be an uncovered or exposed part of the article of wearing apparel. Examples of the type of products referred to in this paragraph are athletic shirts or so-called 'sweat shirts' with a raised-fiber inner side."

Effective date: The aforesaid amendment to Part 302, Rules and Regulations under the Flammable Fabrics Act, shall become effective January 1, 1968 and shall apply to all products manufactured or imported after that date.

Authority, section 302.6 issued under section 5(c) of the Flammable Fabrics Act, 67 Stat. 112; 15 U.S.C. 1194.

By the Commission, issued April 3, 1967.

JOSEPH W. SHEA, *Secretary.*

Mr. COLEY. There is one other factor in the question you asked him. There are permanent finishes and soluble finishes. A soluble finish will pass the test, but it washes out. This was in Mr. Franck's statement. This is a chemically treated, fire-retardant finish, but when you wash

it—it varies again with the stability of the fiber and the chemical—the fire retardant is washed away on the soluble finish.

There is a permanent retardant which is more expensive.

Mr. Moss. You use the figure, Mr. Franck, of $5 million. I wonder if you would supply for the record—I wouldn't expect you to give it to us at this point, but just as quickly as you can for the record—a breakdown on that $5 million figure which you cite?

Mr. FRANCK. Yes, sir, be glad to. I can answer for one plant. Would that be sufficient?

Mr. Moss. You used the figure of $5 million.

Mr. FRANCK. $5 million would be for the total industry and it would be composed of increased finishing equipment in the form of patterns to put this solution on, doubling your drying——

Mr. Moss. Would this be based on the assumption or the hypothesis that a certain type of fire-retardant standard would be adopted?

Mr. FRANCK. Yes, sir.

Mr. Moss. Would it be based on the assumption that the most extreme example of fire retardant would be imposed, or would it be something in between, or would it have a difference in the end product of cost?

Mr. FRANCK. I think I know what you have reference to and I will be glad to, if I may, give that to you.

Mr. Moss. I think that type of comparative material would be of importance to this committee. We will seek from experts in this field the independent judgment I think perhaps of the Board of Fire-fighters, perhaps the underwriters testing laboratories, to get some of their evaluations.

In other words, we are not anxious to rush madly here, but we want to move on facts and make our evaluation.

Mr. FRANCK. I would like to answer you in three points if I may. The first one is at present even our regular cotton-fleeced fabric under given conditions, and depending upon who tests, will pass.

I have a letter in my file now from Mr. Canavan, who has passed our own fabrics, but we also know of instances based on the amount in which this is tested it could fail, so we know that this fleeced inside is what you might call a borderline incident.

We also know that there are cases where you can take a piece of fabric that has passed the test, and there is no question about it passing, and if you try to burn it up with a layman's method of holding up two pieces of cloth our piece of fabric burns; it takes over twice as long for it to burn as this other piece of fabric.

The second point, and it would be an intermediate step, and we have been working very closely on this, is we have been in touch with the Federal Trade Commission and keeping them informed because the minute we heard that there was a possibility of our garment being unsafe in any way, shape, or form we took steps to move as quickly as we could.

It takes time for research and we have been working very closely with chemical companies to try to come up with some water soluble retardant that could be an intermediate step and, as you might say, let's get past this technical test which has a lot of misgivings, I think you probably have seen in some of the other testimony that you hear today and tomorrow and previous days.

We worked very hard on this and we thought that we had come up with a solution whereby we could come up with a cheap water soluble solution that would do what we wanted it to. We thought we had it, but every time we get into production on it we come into the problem of the harshness of hand, which is what Mr. Coley was saying.

If we were to succeed in this inexpensive water soluble solution which we have not completed as yet, the cost to the industry insofar as additional equipment and space to put this into a fit would be, I would say, around $2 to $3 million for the total industry. It entails increased patterns, increased napping equipment, because you can't get the fleece on the garment quicker, increased drying.

You have a damper piece of cloth so it takes longer to do. So that would be the intermediate step if we can accomplish it. We have tried hard to and as yet we are not satisfied with the results. Some of us are further along than others, but we are all at this time working on that.

Like I say, that is a solution that we recognize and if there is some way of doing it we are glad to do it, but we don't admit that there is a problem insofar as unsafeness. And the last one is what you asked me and what was in my statement.

I said that approximately $5 million would be the tooling up cost additional to the industry for permanent finish, and we got those figures from a report. I have the report here if you would like to know that for reference in the record. This is by the U.S. Department of Agriculture, Southern Regional Research Laboratory, New Orleans. It is by the gentleman there.

They have put out an article on complete permanent fire retardants, and we used this estimate and their explanation to come up with this $5 million calculation, which would be the same type of equipment but more of it.

Mr. Moss. Now, I think another factor which would be most pertinent in this inquiry would be the total investment by the group of mills producing the fleeced fabrics required for sweatshirt manufacturing, the total investment.

Five million dollars to one industry might be a very significant investment related to the total, while to another it might be a very minor investment, and so this relationship should also be established for this record.

Mr. FRANCK. The $5 million is for the total industry. There are approximately nine major producers in the country.

Mr. Moss. What I am trying to get is the relationship of that increased investment to existing investment so that we have some indication of the magnitude of percentage increase in the cost.

Mr. FRANCK. I can give you a horseback opinion or write it out.

Mr. Moss. I would much rather that you take the time to gather the facts because we are going to be making some legislative judgments on them and I don't think you want us to make them on horseback opinions.

Mr. FRANCK. Yes, sir, I understand.

Mr. COLEY. Would the Congressman like also to reflect in this how this would affect the consumer sales price?

Mr. Moss. Yes, certainly.

Mr. COLEY. In other words, to treat not just the equipment but also the sales involved.

Mr. Moss. That is right and if you are projecting on the consumer sales price the hypothesis on which you base the price increases.

Mr. COLEY. Yes, sir.

Mr. FRANCK. Yes, sir, we understand.

Mr. Moss. Mr. Dixon, do you have any questions?

Mr. DIXON (professional staff member). I have a few, Mr. Chairman.

Mr. Coley, you just touched on one of the points I am interested in. In Mr. Franck's statement he said the cost of the garment would go up about 40 percent.

Mr. COLEY. Yes, sir.

Mr. DIXON. Will you give us the details?

Mr. COLEY. We will get you figures like that. We will get it for you if you would rather have it in a formalized answer. I have some memorandum figures but I would rather give you a formal statement.

Mr. DIXON. The $5 million, in additional equipment, you are going to relate to total investment and it would be long term; would it not?

Mr. FRANCK. Yes, sir. We will give you that in percentage increase plus details.

(The information requested follows:)

SALE KNITTING CO., INC.,
Martinsville, Va., April 27, 1967.

Hon. JOHN E. MOSS,
Chairman, House of Representatives, Subcommittee on Commerce and Finance of the Committee on Interstate and Foreign Commerce, Rayburn House Office Building, Washington, D.C.

DEAR CHAIRMAN MOSS: I would like to thank you and members of your committee for giving Mr. L. Dudley Walker, President, Bassett-Walker Knitting Company, Mr. Earle Wentz, Vice-President, Pannill Knitting Company, Mr. Lem Coley, Vice-President, Russell Manufacturing Company, and me the chance to be heard with regard to our support of H.R. 6142 and H.R. 7471. We believe that both of these bills would clarify the intent of the original Flammable Fabrics Act.

You have requested additional plant-investment figures needed for the application of a permanent fire-retardant finish to sweatshirts, and its relationship to the total plant-investment figures in this industry.

Your second request was what would be the approximate added retail price of a sweatshirt if treated with a permanent fire-retardant finish.

In arriving at the figures outlined below, we have been able to use our own recent cost figures in connection with an expansion and modernization program of our facilities here in Martinsville. It has been estimated that the approximate annual sales dollar for sweatshirts in 1966 was about one hundred million dollars. Of this total, we feel certain that we have approximately 23% of the market. By using our facility cost figures, and applying our known percentage of the total, we are able to arrive at a fairly accurate set of cost figures for the entire industry.

The total plant investment for the sweatshirt industry in the United States would be approximately $52 million. This would be broken down to approximately $6 million in the cose of dyeing and finishing equipment and $46 million for the balance of the operating facilities necessary to manufacture and market our products.

If we, as an industry, are required to treat our merchandise with a permanent fire retardant, then the added investment cost would be approximately $6,800,000. This last calculation was arrived at through information received in a paper published by the U. S. Department of Agriculture, Southern Research Laboratory, New Orleans, Louisiana. This paper appeared in a re-print in the Textile Industry Magazine, dated July 1966, herewith attached.

This $6,800,000 plant-investment cost would be an approximate increase of 113% beyond our present dyeing and finishing equipment needs.

In the event our industry is successful in finding a satisfactory water-soluble fire retardant capable of passing the Federal Trade Commission's test procedure CS 191–53, then the approximate increased plant-facility cost would be $1,600,000. This would represent an increase in dye facilities investment of approximately 27%.

In reply to your second question regarding retail prices, we submit that the approximate cost of a standard basic crew-neck sweatshirt is $14.50 per dozen, f.o.b. manufacturing point. This would carry a retail price of $1.95 per unit. If we are required to add a permanent fire-retardant finish, this will increase the cost approximately $4.25 per dozen. The new retail price would then be approximately $2.60 per garment.

The production cost calculations were arrived at from the same Southern Regional Research Laboratory's paper as re-printed in Textile Industry's publication of July 1966.

We hope that these figures will help you in making your decision concerning how far you should go in providing additional protection to our customers.

We would like to set forth one word of "caution", namely, that we hope you will not be unduly influenced by a concern for a very, very small minority and thus penalize the majority and take away from them their rights of being able to buy a practical garment at a currently moderate price.

If you should need additional information, it will be our pleasure to supply it.

With kindest personal regards, I am,

Very truly yours,

W. F. FRANCK, *President.*

[Reprint from Textile Industries, July 1966]

FLAME-RESISTANT COTTONS

(By K. M. Decossas, B. H. Wojcik, A. de B. Kleppinger, W. A. Reeves, and H. L. E. Vix, Southern Regional Research Laboratory,[1] New Orleans, La.)

The greatest concentration of cotton mills and finishing plants in the U.S. is in five states—North Carolina, South Carolina, Georgia, Alabama, and Virginia. They account for over 85% and 60% of employment in cotton mills and cotton finishing plants, respectively.

Of 8.8. billion yards of cotton broad woven goods produced in the United States in 1963, 7.5 billion yards were finished. Finishing includes bleaching, dyeing, printing, other mechanical finishing, shrinking and sponging, and chemical finishing for wash-wear, water-repellency, flame-resistance, and mildew-proofing.

Statistics furnished by others have indicated a more serious aspect to the continuing and growing interest in flame resistant finishes for textiles.

Although numerous processes for making cotton more flame-resistant have been available, their usage has been limited because of high application costs and undersirable results such as nonpermanency, and changed appearance, feel, and performance of treated product. Early effort was limited to dipping, spraying, or sprinkling of fabrics and articles of clothing with water solutions of salts such as borax, boric acid, diammonium phosphate, and ammonium sulfate, but because these treatments were water soluble they were only temporary. Several such treatments are still valuable for home use where temporary flame resistance is sought for such items as curtains, draperies, potholders, and upholstery padding.

The most widely used flame resistant finish for cotton in industrial applications is the antimony oxide-chlorinated paraffin or vinyl chloride type. These are applied to tents, tarpaulins, and other outdoor products, and are durable through the service life of these products. They are known as FWWMR (flame, water, weather, and mildew resistant) treatments.

In 1951, a program of research on flame resistance of cotton textiles was undertaken by the Southern Utilization Research and Development Division in cooperation with the Army Quartermaster Corps. The first achievement of that research was the development of a simple theory of flame resistance of cotton, application of which aided in development of new and more efficient flame-resistant chemical agent. About the same time, scientists of the Southern Divi-

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[1] One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research Service, U.S. Department of Agriculture.

sion developed the THPC-amide [2] durable flame-resistant finish. Fabrics finished with THPC-amide also exhibit rot, mildew, and some crease resistance. The finish is easily applied by a pad, dry, cure and wash process.

This process was commercialized in 1956 and several finishing mills in the United States and England are now using it for making fire-resistant cotton fabric. Much of the durable flame-resistant cotton fabric produced in this country contains the THPC-amide finish or some modification of it. It is very satisfactory for use on most cotton fabrics of loose weave, and on heavier fabrics. It is very good on fabrics weighing 6 ounces per square yard or more, and on some fabrics of lighter weights and loose construction, for example, 3/3 steep twill of about 4 ounces per square yard. Typical add-ons range from 18% to 28%, depending upon which resin system is used and the durability required. THPC resin systems are amendable to vat-dyed fabrics and may be used as the bonding agent for pigment-dyed fabrics.

It was determined later that chemical fixation of a water-soluable precondensate of THPC and amides in cotton fabric with ammonia and ammonium hydroxide has certain advantages. This technique, referred to as the ammonia cure method, tends to reduce loss of fabric strength associated with the heat cure method because there is very little crosslinking of the cellulose in cotton finished by this method and, to a lesser extent, because the fixation is effected at ambient temperatures. A THPC finish using ammonia cure is in commercial production in England, under the name of Proban.

In October 1956, Southern Division scientists announced one of the most highly effective and durable flame retardants—APO–THPC.[3] This polymer imparts a very durable flame-resistant finish with a relatively low resin add-on, and is satisfactory for use on all-cotton fabrics with the exception of tightly constructed lightweight fabrics and those weighing less than about 3 ounces per square yard. There still exists a need for an adequate flame retardant for light-weight fabrics such as sheers and nets.

The APO-THPC finish is best on fabrics weighing 6 ounces per square yard and above, but is somewhat less than completely satisfactory on print cloth and other lightweight goods weighing more than 3 ounces per square yard. This is due to the fact that satisfactory flame resistance can be obtained with lower resin add-ons (8–12%) for heavier fabrics, but lighter fabrics require higher add-ons (15–18%), which stiffen and weaken the fabric. The finish is effective also on rayon, wool, and silk, and on blends of these fabrics, but not on cellulose acetate, nylon, or polyester fibers.

The APS-THPC [4] finish gives results about comparable to those of APO-THPC. APS is more stable than APO and can be stored longer, but it is not as soluble in water, which limits its concentration for application, and fabrics treated with it initially have a disagreeable odor.

The APO-THPC process was shown to be commercially feasible in 1960 when APO-THPC finishes were applied by more than 10 textile finishing plants to thousands of yards of fabric for military research studies or for customer acceptance studies. During the past two-and-one-half years, almost 300 domestic organizations and approximately 30 foreign organizations inquired about the process. These organizations have widely diversified interests, ranging from textile mills and chemical manufacturers to machinery manufacturers and interior decorators, plus numerous others.

Additional durable flame-resistant treatments for cotton have been developed in research at the Southern Division. Telomers of bromo-form and a phosphorus-containing compound can be applied to cotton from aqueous emulsions for durable flame resistance. Better results were obtained, however, by combining these telomers with THPC, and the combinations (BAP-THPC [5] and PNE-Bromoform-THPC [6]) produced good results on many fabrics.

Another treatment, accomplished in conventional equipment using a water solution of APO containing Zn $(BF_4)_2$ catalyst, yielded a flame-resistant cotton product having added wrinkle, rot, mildew, glow, and some measure of flame

[2] Tetrakis (hydroxymethyl) phosphonium chloride, a methylolelamine urea.
[3] Tris (1-aziridinyl) phosphine oxide and THPC.
[4] Tris (1-aziridinyl) phosphine sulfide and THPC.
[5] Bromoform-triallyl phosphate ester in combination with THPC resin.
[6] Bromoform adduct polymer of allyl phosphonitrilate in combination with THPC resin.

resistance. Phosphonomethylation, the reaction of cotton with disodium chloromethylphosphonate in the presence of sodium hydroxide, produces a relatively stable phosphorus-containing ether of cotton cellulose which is flame resistant in the ammonium salt form.

MANUFACTURING INFORMATION

New Materials

Any variety of cotton is suitable for manufacture of flame-resistant cotton products. Chemicals of commercial grade are satisfactory.

Application Techniques

In general, flame-resistant finishes can be applied to fabric in conventional textile finishing equipment and are particularly suited for intermittent production in equipment already available at finishing plants. It is desirable to apply this finish after other finishing operations.

Recent work has shown that the APO-THPC finish can be applied also to cotton garments and other fabricated articles in standards equipment available in commercial and institutional laundries.

THPC Amide Process

The rpocess is a relatively simple one of padding an aqueous solution of the chemicals into the cotton, curing at an elevated temperature, washing the cotton free of chemical byproducts, and drying. Conventional textile processing equipment is well suited to the process.

For fabric processing, a three-roll padder, well vented roller-type drying and curing oven, continuous washing range, and tenter frame for final drying are needed.

THPC-Ammonia Cure Process

In the THPC-ammonia cure process the procedure is essentially the same but the curing oven would be replaced by a chamber containing a continuous flow of ammonia gas which would chemically fix the flame retardant to the fabric, thus eliminating the heat cure. After passing through the ammonia gas, the fabric is immersed in a solution of ammonium hydroxide to complete the fixation.

APO-THPC Process

At the finishing plant. After padding the fabric through the treating solution, it is dried at a low temperature and cured at an elevated temperature in forced-air roller-type drying and curing ovens or on tenter frames. Curing time can be varied from 2 to 4 minutes depending on fabric weight and construction.

The fabric is washed and softened in either a continuous counter-flow open-width washing range or a winch, and is dried by any conventional method. For sheeting, a higher resin add-on after process washing (15–18%) provides flame resistance durable to repeated laundering and dry cleaning.

Treating solutions are easily prepared using rapid stirring. THPC is dissolved in one-half of the cold water (38–40 F) and triethanolamine is then added. APO, which should be kept cool in storage, is dissolved in the other half of the cold water, and just prior to treatment both solutions are mixed together and an alkylarylpolyether alcohol-type wetting agent is added. Optimum results are obtained if the treatment is applied immediately after mixing of the two solutions. Temperature of the mixed solutions must be kept below 70 F. Ice may be substituted for a portion of the water in both solutions to keep them cool.

In commercial and institutional laundries. The APO-THPC finish can be applied to prefabricated cotton articles in laundry equipment available in most medium or large size commercial, institutional, and garment-rental-service laundries. This procedure is not recommended unless adequate precautions are taken to prevent individuals from coming into contact with APO. (See "Safety Precautions.") The cotton articles, after desizing, are—

Wetted out by dipping into treating solutions in an open corrosion-resistant tank;

Hydroextracted or centrifuged to 70–80% wet pickup;

Dried 20–30 minutes at 180–190 F in a tumble dryer;

Cured 3–5 minutes in a cabinet oven at 285–300 F, or 10–15 minutes in a tumble dryer at 260 F;

Washed in a reel- or home-type washer for 30 minutes with a change of water every 5 minutes;

Dried, and ironed or pressed as required.

The first and final washes should be with cold water and the others with hot water at 140 F. Suitable softening agents may be added in the final wash or as an additional component in the treating solution to improve the hand of the articles after treatment.

Prefabricated cotton articles that have been successfully treated with APO-THPC by the laundry application technique include heavy-duty coveralls, overalls, jackets, work trousers and shirts, seersucker bathrobes, sheets, and pillowcases. Essentially all of these articles have been processed in the same manner. Maximum curing temperature possible (260 F) in steam-heated tumble dryers has been used. This temperature may be adequate, depending upon the article and its intended use. A higher temperature is preferred.

Satisfactory durability of finish for heavy-duty coveralls, having an expected service life of 25–30 laundering-wearing cycles, can be achieved when cured at 260 F if resin add-on is increased 2–3% to compensate for low cure temperature. Such articles as hospital sheets and pillowcases, which have a service life of 100 cycles of laundering-use, need a curing temperature of 285–300 F for optimum durability. Hospital sheets cured at 260 F retained satisfactory flame-resistance through only 50 laundering-use cycles.

Quality Control

Both THPC-amide and APO-THPC flame resistant cotton products have these outstanding features: durable to repeated laundering and dry cleaning; glow resistant as well as flame resistant; form tough, pliable and protective chars when exposed to flames or intense heat; inert physiologically to persons handling or exposed to the fabrics; only slightly heavier than untreated fabrics; and susceptible to further wet and dry finishing treatments. In addition, the treated products have some crease resistance and those from heavyweight fabrics exhibit little, if any, change in hand, texture, and appearance or loss in strength. Because of the higher adds-on necessary for satisfactory flame resistance of lightweight fabrics, these exhibit stiffness and loss of tear and breaking strength. All APO-THPC finished products will yellow upon heating or aging but they are bleachable with sodium borohydride or sodium perborate.

Flame-resistant cotton fabrics should be tested for durability and fire resistance. The commercial white wash laundry cycle as defined by the American Institute of Laundering has been selected as the rating standard for measuring durability. The number of these cycles through which the treated fabric retains its fire resistance determines its durability rating, which is directly related to the fabric's normal useful life. Fire resistance before and after repeated launderings is measured using the American Association of Textile Chemists and Colorists' vertical char test standard 34–1952.

Effect of repeated launderings on breaking strength and tear resistance might also be determined. Other tests that might be advisable for certain product applications are those for mildew resistance, anti-bacterial activity, wash-wear including shrinkage, and anti-static properties.

Safety Precautions

Production personnel must be trained in the application procedure and adequate precautions must be taken to prevent the chemicals, and in particular APO, from coming in contact with the skin. APO is a hazardous substance and must be handled with extreme caution. *It must not come into contact with the skin.* Persons working routinely with the material must be especially careful to avoid direct contact because repeated contact may cause skin sensitization and induce respiratory allergic reactions. In case either APO or APO-THPC treating solution comes in contact with the skin, it should be removed immediately by washing in copious quantities of water.

Although no toxic properties have been encountered with THPC, this chemical should be handled as formaldehyde since it releases formaldehyde. Contact of THPC with the skin should be avoided. For any process involving THPC, good ventilation is necessary because formaldehyde is given off during curing. It is possible that other toxic substances are evolved also. The resins are non-toxic after curing.

Products and Potential Markets[7]

Flame-resistant cotton is being used for apparel, household, and industrial products. Present and potential uses are given in Table 1.

[7] Added protective treatments such as coating of sunlight screening pigment should be used in conjunction with the flame-resistant treatment when applied to fabrics that will be exposed to sunlight continuously or used outdoors.

The flame retardants have been successfully applied to battle oxford, broadcloth, batting, canvas, cotton linters, cheesecloth, duck, denim, drill, flannel, lawn, metalized fabrics, plastics such as urethanes, print cloth, sateen, silk, twill, rayon-cotton blend, wool, and yarn. They are ineffective on nylon or polyethylene, but are effective on nylon-cellulose or polyethylene-cellulose blends containing more than 50% by weight of cellulose. The retardants may be applicable in paint and on paper, straw, and wood, and may have some use on asbestos as binding agents or fabric modifiers.

There is an estimated need in the U.S. for about four million flame-resistant garments per year to be used by workers in the chemical, steel, nonferrous, and other industries. It has been estimated that 1.5 million yards of flame-resistant fabric are need each year for use in steel mills alone. The military market potential for flame-resistant garments is envisioned at 5 million yards per year. The market for flame-resistant cubicle curtains is valued at $5 million per year.

FACILITIES FOR A SINGLE FINISHING LINE

Building, Land, Transportation

For a single 120 yard-per-minute finishing line, including padder, roller dryer, roller curer, washing range, tenter frame, and tanks, approximately 12,000 sq. ft. of processing area are required, as well as 2,050–5,600 sq. ft. of warehouse (APO-THPC and THPC-amide, respectively) for dry storage of chemicals needed for twenty-eight 8-hour shifts (2- to 4-week supply, depending upon number of shifts per day).

Process buildings of the above size should have steel frame, brick and concrete walls, concrete floors and roof, heating, lighting, sanitary plumbing, and sprinklers. Warehouses should be waterproof.

Installation Plans

Because of the many cost advantages of producing flame-resistant cotton fabrics as one of many product lines, consideration should be given to their processing intermittently with other finishing operations. In this way, operations can be performed to the extent permissible in existing equipment at the site, with minimum additional capital investment required. Also, building areas and facilities for receiving, storage, shipping, maintenance, administration, and service operations would be already available.

The site of a flame-resistant cotton fabric processing operation must be chosen to reasonably fit market needs in the foreseeable future plus provision in plant layout for expansion if desired later. The information given herein is applicable to one pad-dry-cure equipment line, operating at a practical rate of 120 yards of fabric per minute. As much as 60.5 million yards of fabric can be finished in this system annually, and varying yardages of flame-resistant fabrics up to that level can be produced intermittently with other finished fabrics in the same equipment, thus minimizing unit processing costs for all finishes involved.

Capital Requirements

Estimated total plant costs for new chemical treating facilities for THPC-amide and APO-THPC flame-resistant cotton fabrics are shown in *Tables 2* and *3*, respectively. For individual situations, these costs can be reduced to the extent that equipment and buildings are already available, and that reconditioned rather than new equipment is purchased.

Finishing cost varies with flame-resistant finish used, size of plant, annual production, chemical prices, present resin add-on, and other factors. Typical fabric finishing costs, using both short-range and possible projected chemical prices, are given in *Table 4*.

Industry sources estimate that cotton or rayon items, such as sheets that retail for $2.75 to $3.50 each, or work garments that retail for $4.50 to $5.50, will each carry a premium of approximately $1.00 to $1.25 after being finished for durable flame-resistance. These durable finishes cost about the same as nonpermanent organic treatments but more than nonpermanent inorganic treatments.

TABLE 1.—*Products and potential markets for flame-resistant cotton fabrics*

Apparel:
- Aprons
- Bathrobes
- Costumes
- Dressing and night gowns
- Hospital gowns
- Housecoats
- Hunting apparel
- Jackets
- Military apparel
- Pajamas and sleepers
- Thermal underwear
- Industrial apparel:
  - Coveralls
  - Gloves
  - Helmet covers
  - Laboratory coats
  - Safety hoods
- Suits:
  - Anti-gravity
  - Firefighters
  - Flight
  - Fuel handler
  - Glass plant
  - Service station
  - Steelworker
  - Welder

Household:
- Bedding (sheets, covers, blankets, comforters, pillowcases, quilts, bedspreads, mattress pads, outer covering of pillows, mattresses, box springs and all other products used on or about a bed or other place for reclining or sleeping, not including furniture):
- Curtains (cubicle and door)
- Draperies
- Mops
- Shade cloth
- Upholstery

Industrial:
- Aircraft uses
- Awnings
- Belting
- Boat covers
- Brattice cloth
- Decorations
- Draw sheets
- Ducts
- Dust collectors
- Fiber board containing cotton
- Insulation
- Labels for sheets
- Protective curtains
- Surgical textiles and supplies
- Tarpaulins
- Tents
- Walk-off mats

TABLE 2.—*THPC-amide flame resistance of cotton fabrics—total finishing plant cost*[1]

Process building (10,975 sq. ft.)	$235,900
Warehouse (5,610 sq. ft.)	44,900
Building subtotal	280,800
Processing equipment:	
(3-roll padder, roller-dryer, roller-curer, washing range, tenter-frame, mixing and storage tanks, and pumps)	595,700
Process and service piping	95,300
Instrumentation	11,900
Auxiliary facilities:	
(Boiler, deaerator, feed pump, water softener)	120,000
Equipment subtotal	822,900
Engineering and construction, and contingency costs	386,300
Total	1,490,000

[1] As an addition to existing facilities—processing rate 120 yards per minute.

TABLE 3.—*APO-THPC flame resistance of cotton fabrics—total finishing plant cost* [1]

Process building (11,545 sq. ft.)	$248,200
Warehouse (2,250 sq. ft.)	18,000
Building subtotal	266,200
Processing equipment: (3-roll padder, roller-dryer, roller-curer, washing range, tenter-frame, mixing and storage tanks, and pump)	643,200
Process and service piping	102,900
Instrumentation	12,900
Auxiliary facilities: (Boiler, deaerator, feed pump, water softener)	140,000
Equipment subtotal	899,000
Engineering and construction, and contingency costs	407,800
Total	1,573,000

[1] As an addition to existing facilities—processing rate 120 yards per minute.

TABLE 4.—*Estimated finishing cost plus general expenses* [1]

	Chemicals	THPC at 70 cents per pound, total
A. THPC-amide finishing of 60-inch wide 8-ounce cotton twill to 16.6 percent resin add-on at 120 yards per minute:		
Per linear yard of fabric	*Cents* 11.1	*Cents* 14.2–15.7
Per square yard of fabric	6.7	8.5– 9.4
Per pound of product	11.8	15.0–16.6

	APO at 75 cents per pound; THPC at 70 cents per pound	APO projected at 40 cents per pound; THPC projected at 40 cents per pound [2]
B. APO-THPC finishing of 60-inch wide 8-ounce cotton twill to 12 percent resin add-on at 120 yards per minute:		
Per linear yard of fabric	*Cents* 13.3–15.0	*Cents* 9.8–11.4
Per square yard of fabric	8.0– 9.0	5.9– 6.8
Per pound of product	14.9–16.8	10.8–12.6

[1] Exclusive of untreated cotton fabric cost and profit.
[2] A long-range projected possible price.

Mr. COLEY. We feel that this is a safe garment now. It is a technicality of the testing that is causing us the major problem.

Mr. DIXON. Did you participate in the Federal Trade Commission rulemaking on this?

Mr. COLEY. Yes, sir.

Mr. WENTZ. Not in the original rulemaking.

Mr. DIXON. They put out a notice of proposed rulemaking.

Mr. WENTZ. Proposed change, yes, sir, but not in the original.

Mr. DIXON. Yes, the change that concerns you here. It is the proposed change which led to the proposed legislation that is before you.

Mr. WENTZ. Mr. Dixon, what has concerned us most of all has been that we would go headlong in a hurry, rush into something that would be too costly. There is not at this present time known to us a good cheap way of applying any chemical to a sweatshirt that would still leave it as a sweatshirt with the properties desired by the customer, and this is something yet to be determined and it is of a technical nature and it could easily be a quite expensive thing as well as a time-consuming thing to do it.

None of us has done it yet, even though we have started to try to come up with an answer to produce a sweatshirt that you or anyone would buy and would easily wear.

Mr. FRANCK. Mr. Dixon, may I make a comment?

Mr. MOSS. Yes, sir.

Mr. FRANCK. Mr. Dixon, I think that you asked also had we participated in the preparation of the so-called amendment with the Federal Trade Commission. Was that as I understand it?

Mr. DIXON. The change in their rules.

Mr. FRANCK. In the change of rules. I don't know what you class as participation. We have had a chance to be at any hearings that they have had and we have been at every hearing they have had pleading for time. They have indicated that they understand our problem and we appreciate the manner in which they have been discussing this with us, but by the same token we are not sure that we will be able to take care of it within a year's time, which is what they more or less indicated they would go along with, and as I understand from Chairman Moss they have stated January 1, 1968, as the deadline date.

Mr. COLEY. The Federal Trade Commission has been most helpful and cooperative in holding these hearings and they are very concerned about this matter.

Mr. FRANCK. We are not trying to buck the Federal Trade Commission. We just see this act as a genuine possible solution to our problem and we feel like the same problem exists with others.

Mr. DIXON. I presume that you run a fire test on the reverse side.

Mr. COLEY. Yes. Without the brushing we have no problem. With the brushing we have a problem.

In other words, if you launder and dry it as you would in your home it passes the test.

Mr. DIXON. What test? Is this an FTC test?

Mr. COLEY. The same flame test. The brushing device is what causes the problem. In other words, you in effect renap the thing, brush up these fibers. There is a piece of laboratory equipment. I have a picture of it here somewhere. But the garment that your daughter or your son is wearing right now could take and cut a swatch of it, bring it to a test in a particular laboratory and test this, and I am confident it would pass, but without the brushing.

If you have to brush it off it will not pass. This is a technicality.

Mr. DIXON. I have never seen any of them brushed.

Mr. COLEY. This is the reason we don't think this is a problem.

Mr. DIXON. I have no further questions, Mr. Chairman.

Mr. MOSS. I have two additional questions. One, I noted that you gentlemen did not comment upon the proposals contained in House Joint Resolution 280.

Mr. COLEY. House Joint Resolution 280 I believe is the one that sets up the consumer commission?

Mr. Moss. Yes.

Mr. COLEY. I am correct in that? I was privileged to listen to some of the testimony the other day and I feel that the subcommittee has had very good advice on this. It has both pro and con. I have not studied it in the depth that you men have and I don't believe I would be competent to comment on it.

Mr. Moss. And you have not commented upon the bill which would give to the Secretary the authority to promulgate rules and regulations and amendments to the Flammable Fabrics Act. You have commented upon the legislation by Congressman Flynt.

Do you have a position as an industry on the other two categories of legislation pending before this subcommittee?

Mr. FRANCK. We came here only with the two bills that I had reference to, H.R. 6142 and H.R. 7471. We did not come prepared to make any comment on the others. I think I am going to make this comment just because it is me I guess, but I firmly believe that sometimes our Government gets involved in too many controls and I come from a State that feels that way.

We would certainly like to not see it overdone in things that may be inconsequential. That is my own personal opinion.

Mr. Moss. Can you give an opinion, coming from that State, on the possibility that as States increasingly concern themselves with standards in this area you could be faced with a multiplicity of standards, divergence, confusion.

Mr. FRANCK. All I am saying is I am hopeful our Federal Government is cautious in whatever laws they pass. I think they have done very well in many, many laws.

Mr. Moss. I think my State has had a record of proposing some rather stringent requirements from time to time and there seems to be an increasing tendency in the States to enact standards in these areas and you might wake up to find that you are faced with 50 different standards.

Do you think that might be a more desirable situation than to have a single national standard?

Mr. COLEY. I would like to comment as an individual. My opening statement was that we favor flammable legislation. We think that the act has been a good act. We think that the significance of this particular act of which I testified is the fact that it reads into the act the thing that the Congressman would like, stating definite rules of reason.

A garment should be tested as it is intended to be used; an automobile would not be tested as to whether it will actually pierce someone if they break it up and use it as a weapon.

In other words, let's keep it within their point of reference. We think that a safety standard on any item is the manner in which it is to be used—I am speaking of Russell Mills—any manner in which it is intended to be used is the basic point from which we would like any standards to be set.

Mr. FRANCK. I concur.

Mr. Moss. Of course it would probably be unnecessarily argumentative to state that it is necessary to watch them grow up, but I find

there is a very strong tendency on the part of the young not always to wear things as they are intended. In fact, exactly how are they intended to be worn.

If there is a fad on for sweatshirts and it flares up overnight and you find that everybody has to have a sweatshirt and they are all wearing them wrongside out, what is the intent of the manufacturer in meeting that threat which has evolved from that fad?

We can all think back to the fads that flare across this country much more rapidly, we will say, than the flare we see on the face of clothing. What is the intended mode? Is it the mode of the moment? Whose intentions are we dealing with? That of the designer, or that of the wearer?

If the marketplace is the testing spot then the mode of the moment is he test and the intent and not the manufacturers. So it isn't a simple matter even to take the proposal by my very good friend Mr. Flynt, who used to serve as a member of this committee.

I think we would have to go a little beyond that to determine who has the control on this test as to how it ought to be worn. I have seen some odd fashions, and I think we have quite a number of them at the moment.

Mr. COLEY. I think the Congressman's question concerning H.R. 5654 opens up a whole area of concern. Is there anything else?

Mr. MOSS. There isn't and I want to thank you gentlemen for your appearance. We will hold the record open to receive the additional information requested.

Mr. COLEY. Thank you very much.

Mr. FRANCK. Thank you, sir.

Mr. MOSS. Now it is a very pleasant experience for me to introduce a colleague of many years standing, Congressman Bryan Dorn, who has some of his constituents here.

Bryan, would you come forward and acquaint us with your folks?

STATEMENT OF HON. W. J. BRYAN DORN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF SOUTH CAROLINA

Mr. DORN. Thank you, Mr. Chairman. I won't sit down because I have another appointment downtown, but I do want to say that I could well introduce every man in this room this morning. I have been associated with these distinguished gentlemen over the years trying to protect our great textile industry of this country and the jobs and security of its employees.

I do want to say that we are all grateful to you, Mr. Chairman, and to Mr. Keith, for your kindness in staying here today to hear all of our friends. We know what it means to sit most of Friday after a pretty rough week on the floor and we are grateful.

I might say also that we appreciate your splendid staff here on the committee. They are doing an outstanding job.

It is my great pleasure to present to the subcommittee this morning one of the leaders, one of the great leaders, of the textile industry, a man who is at the present time serving as vice president of the American Textile Manufacturers Institute.

Two weeks ago he was elected president of the American Textile Manufacturers Institute and will take over this office in October of this year.

Mr. Chairman, Mr. Dent represents the great textile industry of this country all the way from Maine through Texas and I might say those areas of the country that furnish the fiber for this great textile industry which includes wool and cotton from your great State. He represents approximately 85 percent of all production in this country, totaling approximately 17 billion square yards annually.

So it is my great pleasure to present to the subcommittee a warm personal friend, a great man, Mr. Fred Dent, president of Mayfair Mills in South Carolina. Thank you.

Mr. Moss. Thank you very much.

Mr. Dent, I wonder if you would identify those who are accompanying you at this time.

Mr. DENT. Yes, sir, I certainly will, Mr. Chairman. I would like first of all to thank your colleague, Congressman Dorn of South Carolina, for his kind remarks.

Mr. Moss. I might add that Congressman Dorn was not only a colleague for a long time, but for quite a number of years he was a neighbor and his daughter and my daughters attended school together.

Mr. DENT. Thank you. On my left is Dr. Stam, vice president of research of the J. P. Stevens Co.; Mr. Richard Feis, technical director of Cone Mills; Mr. John Field, president of Cone Mills; and on my far right Mr. Milton Eisenberg of the firm of Strasser, Spiegelberg, Fried, Frank and Kampelman, outside counsel; and Dr. Rowland Kirks, counsel of the American Textile Manufacturers Institute.

And we have members of the committee concerned with flammability in the audience. I would like to ask them if they would stand, all members from the textile industry.

Mr. Moss. Gentlemen, we welcome all of you.

STATEMENT OF FREDERICK B. DENT, VICE PRESIDENT, AMERICAN TEXTILE MANUFACTURERS INSTITUTE; ACCOMPANIED BY JOHN FIELD, CHAIRMAN, COMMITTEE ON FLAMMABILITY; RICHARD FEIS; DR. PAUL STAM; AND MILTON EISENBERG AND DR. ROWLAND F. KIRKS, COUNSEL

Mr. DENT. I am Frederick B. Dent, president of Mayfair Mills of Arcadia, S.C., and I appear before you today as first vice president of the American Textile Manufacturers Institute, the trade association which represents companies producing approximately 85 percent of the more than 17 billion square yards of textiles produced annually in the United States.

I. THE TEXTILE INDUSTRY

Approximately 951,000 men and women are directly employed by the textile industry and an additional 1,396,000 in the related apparel industry. Another 2 million American workers produce the wool, raise the cotton, manufacture the manmade fibers and supply the other raw materials and equipment used by textile manufacturers.

This industry is one of the oldest in America. The industrial revolution was started by the textile industry. The fabrics we produce and distribute have been in common use for generations and are contained in tens of thousands of products.

The annual national expenditure for clothing alone is estimated by the Department of Commerce at about $30.5 billion or about 7 percent of the total of all personal expenditures. The annual national expenditure for such items as rugs, curtains, draperies, blankets and articles of furniture containing fabrics also is in the many billions of dollars.

While it is difficult to give exact figures, it is obvious that the value of all products containing fabrics now in the economy is many billions of dollars. There is not a household nor an individual in America that does not use a score of such items in the routine of daily living—when we sleep at night, dress in the morning, work during the day, or relax in the evening after we return home from earning our daily bread.

This vast industry represented by the members of the ATMI is as conscious as any group of its public responsibilities. Our members are constantly seeking ways of improving the quality of our products to deliver even better values to the consumer and have welcomed the opportunity to join together with other public and private groups in cooperative efforts to meet whatever problems and challenges have arisen over the years.

The industry's concern with improving the quality of its products has included concern with their safety. When highly dangerous sweaters—the so-called "torch sweaters"—appeared in the market in the early 1950's, we supported legislation to outlaw these products. This legislation has accomplished its purpose and "torch sweaters" have been completely eliminated from the market.

We stand ready to deal just as forthrightly against any other fabrics which do not offer adequate protection to the public.

In his testimony before this subcommittee, Assistant Secretary of Health, Education, and Welfare, Dr. Philip R. Lee, referred to the conferences on textile flammability which have taken place under the sponsorship of the Public Health Service.

The textile industry has been a full participant in these conferences. As Dr. Lee noted, the last such conference was held in December 1966 at the New York Academy of Medicine.

As a matter of interest, we have available copies of the speeches presented at that conference which we think would be of great value to the members of the subcommittee and the staff and we would like to make them a part of the record for those who would like them.

As a result of this December conference, a proposal was made to establish an information committee on fabric flammability. A meeting to implement this recommendation was held in New York on February 23 of this year. The industry is represented on this committee with other interested or private groups and Government agencies.

We share the hope Dr. Lee expressed in his testimony that eventually this "committee can serve as a clearinghouse for gathering information on the subject and funneling it to those most vitally concerned."

Under present law, the Secretary of Commerce has the responsibility for recommending changes in existing flammability standards at any time the standards become inadequate for the protection of the public. This responsibility has been delegated to the National Bureau of Standards and we have worked closely with the technical personnel of this agency on fabric flammability problems.

A committee of the ATMI met just this past week with members of the National Bureau of Standards who have particular responsibility in this area. The purpose of this meeting was to ascertain whether there were any areas requiring immediate or prompt action to protect the public from hazardous fabrics.

We wanted to know whether any problem had risen for which new or revised standards or controls would be appropriate. The ATMI's representatives made it clear at this meeting that if such a situation existed, we would cooperate to the fullest extent in making certain that the problem was met. No such situation was presented.

II. NEEDED: MORE SCIENTIFIC INFORMATION

This does not mean that fabrics in common use today do not burn. The contrary is true. Almost 70 percent of total mill consumption in the year 1966 consisted of cotton and rayon. Another 24.6 percent consisted of man-made fibers, largely nylon and polyesters. All of these fabrics representing the major part of the total production of the textile industry will burn readily if ignited.

But so will almost any other substance under certain conditions including substances which are commonly found in our homes: the newspapers and magazines we read, the wood in our homes and household products, cardboard boxes and containers, liquids such as lighter fuel and gasoline, and, of course, matches and cigarettes.

The relevant question is not whether fabrics burn, but the extent to which this fact presents an unreasonable risk to the public.

There has been some research into the extent to which specific fabrics have been associated with injuries and deaths involving burns. But this research has been meager and very little reliable data is now available.

We agree with Dr. Hollomon's statement in his testimony before this subcommittee that "if there is one fact that stands out clearly in statistical information on death and injury due to specific flammable materials, it is how little we really know about the subject."

A similar conclusion was expressed by Dr. Robertson, Chief of the Fire Research Section of the National Bureau of Standards, at the December 1966 Conference on Textile Flammability.

In referring to the problem of casualties associated with fires involving clothing. Dr. Robertson stated:

> Although the National Fire Protection Association, the National Safety Council and the Public Health Service publish information which may be used to estimate the overall size of the problem, information on the circumstances leading to the accidents, and character of combustible material involved, is, unfortunately, not available.

Of course it would be incredible if there were not some cases of injury or death associated with clothing and other fabrics catching on fire. Measured against the number and volume of such products, the percentage of such cases cannot be considered substantial.

Let me make it clear, however, that the industry would like to eliminate all such cases. We welcome any contribution that can be made towards the development of a feasible process for accomplishing this objective and towards convincing the American consumer, who will ultimately have to pay the cost, that an additional investment in safety is warranted.

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I state categorically that if modern science and technology can develop techniques for fireproofing textiles in a manner which would give the public the products they desire at prices they will pay, the textile industry would immediately and without question utilize these techniques.

There are some flame-retardant processes and materials available at the present time and our industry is producing flame-retardant fabrics to meet whatever demand exists for them, primarily for industrial and commercial uses where working conditions create abnormal fire hazards.

These processes and materials, however, are expensive, are in limited supply, and in most cases adversely offset other desirable fabric qualities, such as durability, feel, and color. The cost of some of these materials and processes is prohibitive.

Others are still in the experimental or developmental stage and the industry understandably must exercise care in using new fibers or in chemically treating billions of yards of fabric before such materials and processes have been fully tested against harmful side effects and have become commercially feasible.

Moreover, there are many lightweight fabrics in use today, in great demand by consumers, on which present durable flame-retardant processes cannot be used at all. This is true of the fabrics used in such items as shirts, blouses, women's dresses, lingerie, nightwear, and underwear—fabric which constitute an important part of our industry's total production.

The limitations in the usefulness of any extensions of present flammability standards was noted by several speakers at the 1966 Conference on Textile Flammability. Dr. Robertson of the National Bureau of Standards, for example, very candidly stated that:

> At present we have no basis for predicting a reduction in the burn accident experience if, for instance, a decision was arbitrarily made to characterize fabrics as hazardous when they burn in times less than 20 seconds rather than the 3½ seconds required by the present Federal law.

In other words, it was his conclusion that the public could not be assured greater protection even by the use of fabrics which would burn at only one-sixth the rate of fabrics now on the market.

Nevertheless, our industry has and will continue to experiment in the development of new flame-retardant fabrics for clothing and other products.

We would welcome an increase in the demand for such fabrics by safety-conscious customers willing to pay the extra cost of fire-retardant fabrics and products. We have no doubt that an expanding market for safe products, in the long run, will benefit business as well as consumers.

III. THE DEMONSTRATIONS BEFORE THE SUBCOMMITTEE

Following Dr. Lee's testimony, Mr. William White demonstrated the flame-retardant character of four separate types of products, including one chemical treatment for cotton and three synthetic fibers.

Obviously, if any of these were satisfactory in all respects, consumer demand would arise and manufacturers would rush to fill this demand. Even today, research is continuing in an effort to develop products which will be salable.

Let us examine the systems presented by Mr. White.

First, an untreated cotton sheeting was burned and was compared to a chemically treated similar fabric. It is quite true that the untreated fabric burned and the treated one did not. As Mr. White said the added cost would have been 33⅓ percent.

In addition, according to Mr. George Drake, of the Department of Agriculture's Research Service, who also spoke at the December 1966 conference:

> The APO–THPC finish is best on fabric weighing six ounces per square yard and heavier. It is somewhat less than completely satisfactory on print cloth and other lightweight goods weighing less than four ounces per square yard.

He goes on to say:

> . . . but lighter fabrics require higher add-ons (15–18 percent) which stiffen and weaken the fabric.

Mr. Drake was discussing a finish developed in 1956, and which is still the best available for the purpose. Cotton bedsheets weigh about 4 ounces per square yard, which would place them in Mr. Drake's, "less than completely satisfactory" group.

Second, Mr. White compared a cotton twill fabric to a modacrylic, or "VEREL" fabric. The synthetic, after being available to the market for well over 10 years, has never yet been able to gain wide public acceptance, even with the merchandising skills of a major manufacturing company. The reasons must be its price of about $0.75 per pound compared to about $0.28 for cotton, its relative lack of strength and wear life, and its sensitivity to heat (which makes it difficult to launder and dry without harming its feel).

Third, Mr. White showed a piece of Fiberglas fabric which would not burn. Fiberglas can be and is being used in certain items such as curtains, draperies, bedspreads, and interlinings. It cannot be used in contact with the skin, as the brittle fibers break off and cause severe irritation.

We understand the Federal Trade Commission is planning to suggest that producers of Fiberglas curtains warn their customers not to launder them with clothing or other items as even this may be enough to cause skin problems.

Fourth, we were shown a green dress specially made of nomex nylon. This is a special high-temperature-resistant product which was developed for specialty uses such as dragchutes, flight uniforms, et cetera, where its high strength and heat resistance would justify its extremely high price of $9 per pound, compared to about 28 cents per pound for cotton. After mentioning this price, any discussion of the fiber's shortcomings would be academic.

The above are examples of today's four best durable flame-retardant methods. All represent the result of extensive research, but their severe shortcomings fully justify Mr. White's statement to the subcommittee that the present state of the art in fire retardancy is crude.

IV. EDUCATING CONSUMERS: THE COST OF SAFETY

The extra cost to consumers of fire-retardant fabrics under existing conditions can only be roughly estimated. In one of the demonstrations before the subcommittee last week, as I have noted, it was indicated that a flame-retardant sheet would cost $4 compared to $3 for a conventional sheet.

This is an increase of 33⅓ percent in the cost of a single sheet. In addition, our experts estimate that a flame-retardant sheet will wear out about twice as fast as a conventional sheet.

This means that it would cost a consumer $8 for the service he now gets out of a $3 investment in a sheet. When we consider that more than 150 million sheets are produced annually, it is evident that we are dealing in substantial sums of money—in this case alone, an added cost to consumers of $750 million annually.

Indeed, if a similar factor were applied to the cost of all of the clothing and furnishings containing fabrics purchased by consumers—almost all of which now will burn—the total increase in the cost of living to consumers would be in the billions of dollars annually, with the heaviest burden of this increase falling on lower income families.

Some of these figures must be considered hypothetical since we do not now have the technical ability for flameproofing all fabrics and further research and development may result in cost reductions. But these estimates give some indication of the kind of selling job which will be needed before consumers willingly pick up this tab.

Some of the problems of selling safety to consumers were discussed at the December 1966 Conference on Textile Flammability. Mr. Henry D. Stringer, the Director of the Bureau of Textiles and Furs of the Federal Trade Commission, pointed out in his remarks:

> Safety is one of the hardest things to sell that I know of. I have heard that an experiment was made in a lady's dress department where the same dresses, some with a fire retarded finish and others with conventional finish, were put on sale. The women were fully advised of the safety factor, yet they invariably bought the dresses with the conventional finish because they were cheaper. Such is human nature.

Another speaker at the Conference, Mr. P. J. Fynn, chairman of the Technical Committee of the National Retail Merchants Association, and an official of one of the Nation's largest retail chain stores, described the experience of his company in attempting to sell customers flame-proofed garments. In his words:

> "Some time ago during a flare-up of nationwide publicity about apparel burn cases, we created a particular garment in a flame-proofed version and promoted it vigorously in our stores with special displays. Because of the hard realities these garments were necessarily priced about one dollar higher than comparable non-treated garments. A few weeks later the special price was removed and the stock was mixed with the regular garments because no one was buying the safety garments at the premium price.

Along these same lines, Mr. Louis Segal, the chairman of the Committee on Wearing Apparel of the National Fire Protection Association who also serves as the California State fire marshal, another participant in the Conference, pointed out:

> Currently, the primary effort of our committee is to foster and encourage a vigorous program of public education regarding the hazards of flammable clothing. We are convinced that herein lies the only hope for an immediate, significant reduction in clothing fire casualities.

Consumer education should include another dimension—the need for exercising more personal care in our daily lives. The principal cause of burns is human negligence. Statistics maintained by the Division of Accident Prevention of the U.S. Public Health Service make it evident that personal negligence is the major factor in accidents caused by fire and explosion.

These statistics indicate that improper use of a petroleum product to start a fire is the leading cause of home conflagrations that result in deaths and injuries to children. Faulty wiring and defective stoves or flues are also contributing factors.

Burns caused by hot substances, corrosive substances, steam or open flame account for some 400 deaths per year, primarily among preschool children and elderly persons.

Infants frequently are burned from being placed in extremely hot bath water, or turning on hot water taps when left unattended while being bathed, or from crawling over hot floor grates or while using hot stoves and space heaters for support. Children have been burned by parents spilling hot coffee and other hot beverages on them. This is also true of ashes from lit cigarettes or the hot tip of the cigarette itself. Children have been burned by sparks from trash fires, open flames of stoves, unscreened fireplaces, contact with pilot lights of space heaters, or by sticking metal objects in wall sockets.

We cannot do too much to educate parents to use better judgment and to exercise a higher standard of responsibility when their children's safety and very lives may be at stake.

V. THE BLANKET PROBLEM

Since so much publicity, including a demonstration before the subcommittee by Mr. White, has been given to the subject of the flammability of blankets, we would like to comment on this subject to put it in its proper perspective.

For a number of years approximately 75 percent of the total blanket production of the textile industry has consisted of napped blankets made from cotton or rayon blends with the same flammability characteristics as the blanket used by Mr. White in his demonstration.

Each year for the past 10 years approximately 40 million such blankets have been sold to consumers, which means that during the past 10 years in excess of 400 million blankets have been distributed to the American public.

While in a flame test, the ignition and burning rate of these products is dramatic and sensational, there have been practically no reported cases of accidents associated with blankets from any source.

When 75 percent of the production of an important segment of our industry which must be responsive to public demand is channeled into such products, it is evident that the products are satisfactorily serving the needs and desires of consumers. It is inconceivable that such products have been hazardous to the public without our industry being on notice of flammability accidents or being subjected to civil law suits.

These facts are fully substantiated by a letter of June 17, 1964, from Mr. White to the staff counsel for the Senate Commerce Committee on this very subject.

In this letter, Mr. White reports that investigation by the Public Health Service "does not reveal a single case where the receiving blanket can be identified as an agent involved in the burn injury." There is no evidence of which we are aware which suggests any change in this situation since that report by Mr. White.

VI. SOME COMPARISONS

I was amazed to read in the testimony of Dr. Hollomon that over 1 million injuries each year are associated with 12 types of appliances used in an around the household—and that four of these, power mowers, washing machines, cooking utensils, and power tools, accounted for over 400,000 injuries annually.

I was also surprised to learn from Dr. Hollomon's testimony that at least one group of experts has found many such products "to be unreasonably hazardous for home use."

Dr. Hollomon, while pointing out that there were no reliable statistics on injuries due to specific flammable fabrics, indicated in his testimony that the Public Health Service estimates that 150,000 persons suffer burn injuries annually. Certainly this is a significant number even as applied to burns from all causes, but fortunately it does not begin to approach the figures given for injuries from appliances.

VII. DEFINING OUR OBJECTIVES

Furthermore, I know of no group of experts who have ever found textiles and other fabrics in common use today to be "unreasonably hazardous" from any point of view.

In the keynote address at the December 1966 Textile Fammability Conference, Dr. Richard A. Prindle, Assistant Surgeon General and Chief of the Bureau of State Services of the Public Health Service, defined the purpose of the Conference to be "to develop a plan of action, using all present knowledge and resources, to make flame-retardant fabrics more readily available to the American public."

Dr. Prindle reiterated the same point in another part of his address in these words:

> Let the housewife determine for herself what she wants for herself, for her family, or for her home, and above all, allow her the privilege of deciding whether she can afford to buy assured safety.

Dr. Robertson, in a similar vein, expressed the hope that industry "will continue research on and the development of flame-retardant treated clothing materials which will be economically, esthetically and usefully acceptable to the public."

This same emphasis on expanding consumer choices was stressed by other speakers.

None of the many participants in the Conference representing government agencies, the academic world, the medical and public health professions, the legal profession, industry and other groups concerned with this subject, recommended new legislation to accomplish the purposes outlined by Dr. Prindle.

Indeed, as Dr. Prindle himself stated in answering his own question as to whether "we need a law?"—"I hope not. Cooperation is preferable to coercion."

On the basis of the foregoing considerations we believe it is reasonable to suggest that any legislation on this subject should satisfy the following criteria:

(1) It should recognize the limited data now available on this subject and the need for factual data on the extent to which specific fabrics have been associated with injuries and deaths involving burns.

(2) It should recognize the need for more experimentation and research in the development of fire-retardant processes for fabrics and the limitations of the present state of the art.

(3) It should recognize that whatever problems of fabric flammability may exist are not significantly different from those involving other common household products.

(4) It should result in promoting an increase in the choices available to consumers and not in the removal from the market of products which for generations have provided satisfactory service and utility to consumers at reasonable cost.

VII. THE LEGISLATION BEFORE THE SUBCOMMITTEE

Within these limitations, and in the light of these criteria, the ATMI supports the provisions of the bills before the subcommittee which would authorize and require a study and investigation of deaths and injuries resulting from accidental burning of products, fabrics or related materials.

Mr. KEITH. Was there some particular reason you left out the paragraph you skipped in the paper?

Mr. DENT. Yes, sir, there was. It was not the intent of the witness to infringe on the prerogatives of the subcommittee.

We also support the provisions of these bills which would authorize research into determining the specific products, fabrics, and related materials requiring flammability protection consideration; the conduct of feasibility studies on reduction of flammability of these products, fabrics and related materials; the development of flammability test methods and testing devices to cover these items; and the offering of appropriate training in the use of these flammability test methods and testing devices to cover these items.

We believe that duplication of effort and inconsistency can be avoided by providing that such investigation and research be carried on under the auspices of the proposed National Commission on Product Safety, but are not opposed to any supplemental or special programs in the specific area of fabric flammability.

However, the fact that there is existing legislation with regard to flammable fabrics should not be an argument against inclusion of this subject in the work of the Commission if our objective is to avoid piecemeal solutions to the problems of consumer safety. We do not know any more about whether fabrics in common use today pose an unreasonable risk to the public and what action is justified on this subject than we know about other commonly used home products.

In general, we would also support a voluntary administrative mechanism for feasible revisions of flammability standards whenever it is demonstrated that such revision would provide additional protection to the public.

We are concerned, however, about language in these bills which would put the cart before the horse by delegating the power to issue mandatory standards before the necessary research and investigation have taken place.

Mr. MOSS. Would you defer for just a moment at this point? Would you cite for me the section of the proposed bills which delegate the power to issue mandatory standards before the necessary research and

investigation have taken place? I thought we were dealing with an act contemplated in administrative procedures.

Mr. EISENBERG. If I may reply, Mr. Chairman, one reference we might make is to section 3 of the proposed legislation which would amend section 4 of the present Flammable Fabrics Act to provide in section 4(a):

> The Secretary of Commerce shall prescribe and publish in the Federal Register flammability standards (including conditions and manner of testing) for articles of wearing apparel, and fabrics and related materials used in the manufacture of such articles.

Now, subsection (b) which deals with the subject of interior furnishings rather than wearing apparel, in contrast to subsection (a) does provide for minimal procedural safeguards.

Subsection (a) dealing with wearing apparel standards has no procedural requirements and would allow the Secretary by its literal wording to issue what is described as mandatory standards for all articles of wearing apparel without any particular procedures being defined in the statute.

The only provision in the legislation we have been able to find which relates the issuance of new standards to the research and investigation which the bills would authorize is the proposed subsection (c) of section 4. That subsection does provide that before amending a standard which has already been issued under this proposed legislation, the Secretary shall consider the report prepared pursuant to section 14(a) of the act, which is the section dealing with investigation and research.

Mr. DIXON. Your quarrel is that section 4(a) does not provide for any administrative procedures?

Mr. EISENBERG. I don't believe it provides any procedures, Mr. Dixon. It simply states that the Secretary shall prescribe and publish such standards as he deems necessary. It doesn't even say that, but simply that he shall "prescribe and publish standards for articles of wearing apparel * * *."

Mr. DIXON. And I would like to get your concern with (b). You have now an opportunity for "presentation of views." I don't know where the term "presentation of views" came from, but I understand that it can be equated with "hearings" within the meaning of the rulemaking interpretations of the courts under the Administrative Procedure Act.

Mr. EISENBERG. It may be within the meaning of rulemaking, but there are quite different procedures for agency decisions which must be made on a record and agency proceedings for rulemaking. The procedures that are set forth—and they are only applicable to standards for interior furnishing—have no application by the language of the bills to standards for wearing apparel.

Mr. DIXON. Excuse me. We don't need to go into the fine points of judicial review here. You can be assured that the staff is considering and I am certain that this committee will consider whether there are ample safeguards within the meaning of the Administrative Procedure Act, that APA procedures will be related to this legislation and if necessary additional judicial review provisions can be considered.

Mr. Chairman, I don't think we need to go through this here. I believe you wanted to make that point.

Mr. Moss. I think it is very clear, as the chairman indicated the other day that he wanted the staff to consider the preparation of amendments for an advisory panel and to assure judicial review on this. I think that that was very clearly set forth on the record during the hearing of the departmental witnesses.

Mr. KEITH. I share the concern that the witness has expressed and which has been corroborated by his counsel. It should be clear in any law which we pass that the Administrative Procedure Act should certainly have applicability to apparel as well as to furnishings, and it was interesting that the Government witness last week wouldn't say that the act would assure prior hearings or judicial review.

Mr. Moss. It is particularly clear that the committee intended that that would be the case. With all deference to the Department and the agencies this committee will draft the bill.

You may proceed.

Mr. DENT. I am not aware that anyone participating in these hearings has suggested that additional mandatory flammability standards are warranted or feasible under the existing state of our technology.

If such standards were to be made more stringent today, the effect would be either to remove from the market fabrics or products which have provided safe and satisfactory service to generations of Americans or to substantially increase the cost of these items to the public.

Such action would serve to frustrate, rather than further, the objective of increasing consumer choice.

A voluntary program, in our judgment, is much more likely to assure that flame retardant fabrics will be made available to the public when the technology permits without depriving consumers of the privilege of deciding for themselves what products they should buy and at what price.

The time may come when our technology will permit all fabrics to be made flameproof without impairing their quality, utility, or variety and without substantially increasing their cost. Our industry would welcome such a development.

The research and investigation which is contemplated by the legislation now being considered could hasten such a day. But no objective observer with knowledge of the facts can reasonably contend that that day is now upon us.

This does not argue against an administrative mechanism for revising or issuing new flammability standards which is voluntary and which will assure fair procedures to all interested parties.

The present procedures of the Department of Commerce for the adoption of voluntary product standards could be given statutory recognition and application for this purpose. We have prepared an amendment to the bills under consideration which would accomplish this objective. It is submitted with my statement as attachment No. 1 (p. 133). I shall not read it unless it is your desire for me to do so.

This amendment would provide an administrative mechanism for updating flammability standards on the basis of our developing knowledge and experience.

In our judgment, it would serve to foster a truly cooperative endeavor in which Government, industry, and consumer groups would be working together in a partnership for progress.

Such a procedure would be more appropriate to the accomplishment of the objectives of this legislation than an immediate grant of broad powers to the Secretary of Commerce to issue mandatory standards with a minimum of procedural safeguards.

Coercion could stifle the process of cooperation and experimentation which it is hoped will be stimulated by the investigations and research contemplated by this legislation. It is true that the present law contains a criminal sanction, but this is because the present law is limited to identified substances which were known to be highly dangerous to consumers at the time the law was written. Such criminal sanctions are not justified for the enforcement of standards which have not been written for fabrics or products which at present cannot even be identified.

We also believe the subcommittee should review carefully the record keeping requirements contained in these bills. They appear to us to be unworkable and could become oppressive, particularly to small business firms.

Other procedural and due process issues may be raised by some of the language in these bills.

For example, no provision is made for the orderly disposition of inventory and the 6-month time period provided before new standards become effective could not be met without severe losses.

The criteria for new standards appear to be vague and we are surprised by the omission from the bill of any provision for judicial review or required procedures before the adoption of standards for wearing apparel.

In many respects, the regulatory provisions of these bills go far beyond those in recently enacted consumer protection legislation. Legislation such as the Fair Packaging and Labeling Act and the Traffic Safety Act and even the Child Protection Act, generally contain explicit provisions for judicial review and hearings similar to those under the Administrative Procedure Act.

None of these laws contain the stringent criminal penalties and forfeiture and seizure provisions which would be applicable under these bills.

In addition, they generally provide for Federal preemption, the exclusion of items for export, and much more flexibility in the adoption of regulations, and exemptions, and in the requirements for recordkeeping, than is provided in the bills before the subcommittee.

And, of course, in comparison to what is proposed for products under the proposed National Commission on Product Safety, the regulatory provisions of these bills are unique.

Most of these problems would become academic if the subject of flammable fabrics was included in the jurisdiction of the National Commission or if voluntary procedures were substituted for the mandatory power proposed in these bills. This we strongly recommend.

If, despite the lack of scientific information on this subject, the problems of technology and the problem of substantially increased cost to the consumer, which we believe would make a delegation of mandatory authority at this time unwarranted, discriminatory and unfair—if despite these considerations, Congress in its judgment determines that there is some compelling necessity for an immediate

delegation of mandatory power, we submit that as a minimum the following safeguards should be written into the law:

Express provision for judicial review of any mandatory standards or amendments promulgated by the Secretary.

Express provision for application of the Administrative Procedure Act to the proceedings before the Secretary and statutory assurance that representatives of industry and other affected groups will participate in the drafting of new or amended standards.

A requirement that any new or amended standards be based on the results of the investigation and research to be conducted under the legislation.

Explicit provision permitting the orderly disposal of inventory and stock in the trade before new standards become effective, and a more reasonable period of time, normally 18 months, before new standards become mandatory.

The limitation of criminal liability and seizure and forfeiture penalties to cases involving violations of standards set forth in the basic law.

Explicit provisions for Federal preemption.

Explicit provisions negating any extraterritorial applications of the act.

Explicit provisions allowing regulations other than mandatory standards, such as labeling, to be utilized.

Explicit provisions limiting the recordkeeping requirements to such records as are reasonably necessary and feasible to show compliance with the law.

More explicit criteria to prevent the promulgation of mandatory standards which would outlaw from the marketplace fabrics and products in common use for generations.

(Material referred to in Mr. Dent's statement follows:)

ATTACHMENT No. 1

PROPOSED AMENDMENT

Section 10 of the bill to amend the Flammable Fabrics Act is amended by changing the title to read "Investigations and Voluntary Flammability Standards," and by adding at the end thereof the following additional subsections:

"(c) Whenever the Secretary determines on the basis of the investigations and research conducted under subsections (a) and (b) of this section that any fabric, related material, or product may be so highly inflammable as to be dangerous when used for the purpose for which it is intended, he shall invoke the Procedures For The Development Of Voluntary Product Standards (15 C.F.R. Part 10) for the purpose of determining and publishing an appropriate flammability standard (including conditions and manner of testing) or an amendment to any existing flammability standard for such fabric, related material or product.

"(d) If, (1) after one year after the date on which the Secretary invokes the Procedures For The Development Of Voluntary Product Standards as provided in subsection (c) of this section, he determines that such a standard or amendment will not be published pursuant to the provisions of such subsection (c); or (2) if such a standard or amendment is published and the Secretary thereafter determines that it has not been effective, he shall promptly report such determination to the Congress with a statement of the efforts that have been made under the voluntary standards program and his recommendation as to whether Congress should enact into law a flammability standard or an amendment to any existing flammability standard for such fabric, related material or product.

"(e) Any flammability standard or amendment thereto published pursuant to the provisions of subsection (c) of this section, shall become effective eighteen months from the date on which such standard or amendment is published, unless

the Secretary determines for good cause shown, that an earlier or later date is in the public interest.

"(f) No flammability standard or amendment thereto published pursuant to the provisions of subsection (c) of this section shall be interpreted to preclude the continued use or orderly disposal of any fabric, related material, or product in inventory or with the trade as of the date on which such flammability standard or amendment becomes effective."

NOTE.—Section 3, subsection (c) of Section 4, and Section 11 of the bill would be stricken; other sections would be appropriately re-designated, and conforming changes would be made where necessary in the language of other provisions of the bill. These changes would result in adding to the Act a voluntary mechanism for the adoption of additional flammability standards and amendments without interfering with the sanctions for violation of the standards contained in the present law. Striking subsection (c) of Section 4 would eliminate the broad record keeping requirements in this section of the bill but would not interfere with the proposal under Section 4(a) of the bill to authorize the Commission to "prescribe such rules and regulations, including provisions for maintenance of records relating to fabrics, related materials, and products as may be necessary and proper for administration and enforcement of this Act.")

Mr. DENT. Even if all these safeguards were written into the legislation, it is the position of the American Textile Manufacturers Institute that voluntary measures are preferable to coercion and are more likely to promote consumer protection.

We would strongly support a primary effort designed to develop accident statistical data specifically defining those areas of fabric use and fabric type which might cause detrimental effect to the consumer.

We would also endorse a program of consumer education directed at making all consumers more safety conscious in their purchases and in their use of all common household products, including fabrics.

In addition to this, we recognize the need for continuing research on problems of flammability, the establishment of scientifically accurate and workable flammability standards, and the investigation of potential commercial application of the state of the art as it is unfolded before us by the scientist.

We all share in the desired objectives of this legislation. However, we ask that the language of these bills be carefully reviewed in the light of the evidence before this subcommittee so that the substance as well as the stated purpose of any measure enacted will be based upon fact and need and be in the public interest.

We thank you for the privilege of appearing before you and testifying on this subject.

Mr. MOSS. Any questions?

Mr. KEITH. Yes, Mr. Chairman.

Are there not many manmade fibers that have very little flammability that are competitive in price and quality?

Mr. DENT. Mr. Keith, in the pricing of fibers the two cellulosic fibers, cotton and rayon, constitute the largest volume of fiber consumption in this country and both of them are priced well below the synthetic fibers which are man made. They are all more expensive than these two.

Mr. KEITH. They are all more expensive.

Mr. DENT. That is correct.

Mr. KEITH. How much more expensive?

Mr. DENT. I believe that on the next price level you would find polyester fibers, which is priced today at approximately 72 cents a pound as compared with 28 cents for cotton.

Mr. KEITH. And what about the qualities other than flammability: qualities such as strength, warmth, and texture?

Mr. DENT. In the manmade fibers?

Mr. KEITH. Yes. Maybe I am giving you an opportunity to comment on a subject that might come back to haunt you or to haunt another industry. Perhaps it isn't pertinent to this, but I do feel that when the committee takes this bill into consideration we are going to have to figure what other adverse or beneficial factors are involved.

Mr. DENT. Our industry selects as the raw material for end products those fibers which in the opinion of fiber technologists, fabric manufacturers, and the merchandizers of the end product result in products which the consumer most desires and each fiber has different properties to contribute to the overall resultant consumer product.

Mr. FIELD. Mr. Keith, I am John Field.

Mr. KEITH. John Field.

Mr. FIELD. Field, F-i-e-l-d. While I was introduced as the president of Cone Mills, I am here today in my capacity as chairman of the ATMI Committee on Flammability. I think I might be able to help you a little bit on this question of price.

I have some data here, and these prices were effective in December of 1966. I am quoting them from a speech. Cotton was considered at that time at 22 cents. You heard it in our testimony at 28 cents. Cotton varies up and down depending on grade, and when we are talking about 28 cents we are talking about after the waste factor goes out, et cetera.

Mr. KEITH. You are talking about California?

Mr. FIELD. Yes, sir, but they make good cotton. Rayon was at that time about 28 cents a pound. High modulus rayon at about 36 cents a pound. Cellulose acetate at 41 cents a pound. Polyester at that time was 72 cents a pound. Competition has since brought it down to the present price of about 65 cents a pound.

Acrylics are 77 cents a pound. Nylon was then 78 cents a pound and modacrylic fibers were about 78 cents a pound.

All of these fibers with the exception of the modacrylics will burn or melt, but I thought I would just add that to it. It might be helpful in giving you a little better picture of prices.

Mr. Moss. Would the gentleman yield?

Mr. KEITH. Certainly.

Mr. Moss. We are talking now of the price of the raw fiber before it is woven into the cloth before any processing, is that correct, raw material from which the fabric is made?

Mr. FIELD. Yes, sir; we are talking about the price of fiber before it is touched.

Mr. Moss. Cotton and rayon you have identified as being the lowest in cost.

Mr. FIELD. Yes, sir.

Mr. Moss. But isn't it true that increasingly in recent years the industry has attempted to give to cotton certain characteristics of manmade fibers in the finishing of it?

For instance, the shirt I have on is advertised as one that doesn't requiring ironing. It has certain finishing characteristics that have added I assume to the cost of it. I can buy wool that doesn't shrink. That adds to the cost of it.

We will take a common article of wearing apparel. After there have been changes in the fiber in the finishing, in the manufacturing process, to create an end product, what do the cost comparisons show at that point?

Mr. DENT. I think we should go back to the beginning of your question. You suggest that we have tried to convert cotton to the properties of manmade fibers.

We, on the contrary, have tried to produce an end product which would satisfy a consumer demand. Your wife wished a shirt which would wash and wear. She did not wish a cotton shirt with a synthetic property.

Mr. Moss. Let's go back, because I think I am a few years older than you are and I recall the first wash and wears in which they used synthetics. I remember doing a little traveling around this country when I put a couple of them in the brifecase in case I had to stay overnight and rinse it out. I think plenty of people have done the same thing. I didn't like it for its other characteristics.

The cotton shirt does not do the same thing. It seems to have better characteristics in my judgment. But what you are saying to me is that the synthetic quality had no impact upon the industry's effort to produce cotton with a somewhat similar characteristic?

Mr. DENT. Of course everything has an impact. I was trying to say that at the end of World War II resin treatment was applied to cotton fabric to give it a wash and wear property. Polyester fibers came into volume production only after World War II and they gave enhancement to the objective the industry was seeking, but I think that the trend toward this carefree characteristic was already in motion.

Mr. Moss. Didn't it go through a phase of blending of the fibers and then finally you evolved a cotton product that would achieve it without blending?

Mr. DENT. Blending is a very important part of the industry today.

Mr. Moss. It is still in the fabrics.

Mr. DENT. Yes, sir.

Mr. Moss. Let's take a case of a man's broadcloth shirt. It seems to me as I recall over the years in getting in this wash and wear we went through first synthetic characteristic and then we had a blending characteristic, and then we had a cotton shirt characteristic.

Am I correct?

Mr. DENT. That is absolutely correct and today there are both blended and 100 percent cotton shirts that——

Mr. Moss. That have the same characteristics.

Mr. DENT. That have the carefree characteristics.

Mr. Moss. Then the cost to the consumer must necessarily take into consideration the cost of giving to these low-cost fibers the characteristics of some of the other treated fibers, isn't that correct?

Mr. DENT. Yes, sir.

Mr. Moss. And does the treatment necessary to create those characteristics add significantly to the cost?

Mr. DENT. Yes, sir, the cost of chemical finishes is a very important part of the cost of consumer items.

Mr. Moss. Thank you. I thank the gentleman for yielding.

Mr. FIELD. Mr. Moss, if I may comment on this a little bit, I am getting the impression that in the shirt you are wearing, which some

of our experts could probably tell you what it is—I couldn't—that you are getting the impression that today an all-cotton shirt and what is today called durable press or permanent press is something prevalent and active in the marketplace.

Mr. Moss. Is something what?

Mr. FIELD. Prevalent and actively sold in the marketplace in an all-cotton state. As to the durable press shirts today, there are very few available in the marketplace in all cotton and I think our experts would tell you that those that are on the marketplace in all cotton are so weak in strength as compared with the blended shirts or the regular cotton shirt without the durable press that that is why they are not on the marketplace.

The durable press process or breakthrough that came several years ago had brought on pants first, then shirts, et cetera, but practically the entire production of it consists of blends of polyesters and cotton, polyesters and rayons, or other blends.

There is practically none of it in the marketplace in all cottons. I just thought maybe I should clarify that, or maybe I misunderstood you.

Mr. Moss. Unless I read the label wrong the one I have on is called cotton. It is quite possible I have been blaming the laundry as being extremely harsh in their treatment of my clothing, primarily because they are poorly mechanized and sometimes they sort of pull them apart, but maybe I have been giving the blame to the wrong source.

Mr. FIELD. I have a pretty rough laundry too, but in this particular case our experts will tell you that an all cotton so treated in a shirting weight fabric is so weak that it probably shouldn't go into a good shirt.

Mr. Moss. I am glad to know that.

Mr. KEITH. Now that the cat is out of the bag, I own a half dozen shirts. My wife does my laundry and I only have one that I really enjoy and I just happen to have it on today.

It is 100-percent cotton.

You say on page 6:

> At present we have no basis for predicting a reduction in the burn accident experience . . .

You are quoting from a Dr. Robertson. Could you furnish us with the entire statement from which this quotation was taken for the record?

Mr. DENT. Yes, we certainly can.

Mr. KIRKS. Mr. Keith, that is included in this entire record of that conference which we wish to leave for the use of the committee and the staff. Not only Dr. Robertson's complete statement, but all the others that are referred to in our testimony are set forth in the entire text here. We will be happy to present that to the committee.

Mr. Moss. The committee will receive the material for the files until we have an opportunity to examine them and determine whether or not they will be included in the record.

(The material referred to may be found in the committee files.)

Mr. KIRKS. Certainly.

Mr. KEITH. It may be that you referred to it earlier in your statement, but on page 7 you make reference to the APO–THPC. What is that?

Mr. DENT. Dr. Stam, would you reply to the technical question?

Dr. STAM. Those letters are an abbreviation for rather complex chemical names. The THPC stands for tetrakis-hydroxymethyl phosphonium chloride. You might note that THPC has been given the status of a trademark which is owned by one of the manufacturers of that particular chemical compound for the record.

APO is a different chemical identified chemically as tris aziridynl phosphine oxide.

Mr. KEITH. Thank you very much. I really understand it perfectly well.

Dr. STAM. Mr. Keith, just to relate it, the reference sample that Mr. White showed in his demonstration he identified as being treated with that particular combination.

Mr. KEITH. I recall. Thank you.

On page 12 you say in the middle of the page:

> While in a vertical frame test, the ignition and burning rate of these products is dramatic and sensational, there have been practically no reported cases of accidents associated with blankets from any source.

Is this really true?

Mr. DENT. We go on to mention the fact that the manufacturers would have been subjected to civil lawsuits and other types of action which would have given indications, and to our knowledge these have not developed. That is the basis for that statement.

Mr. KEITH. I think it is safe to say that there would have been law suits.

On page 13 you state in the middle of the page:

> Dr. Hollomon, while pointing out that there were no reliable statistics on injuries due to specific flammable fabrics, indicated in his testimony that the Public Health Service estimates that 150,000 persons suffer burn injuries annually.

Do you intend to have us believe that he in effect meant to say "estimates that 150,000 persons suffer such burn injuries annually?"

Mr. DENT. Yes, sir, but not necessarily related to flammable fabrics. They may have been caused by other reasons.

Mr. KEITH. Then you don't really mean "such," referring back to flammable fabrics?

Mr. DENT. That is corrrect.

Mr. KEITH. Which is correct?

Mr. DENT. As we understand it, it is burn injuries from all causes.

Mr. KEITH. Not such specific——

Mr. DENT. That is my understanding.

Mr. KEITH (continuing). Flammable fabrics.

Mr. DENT. That is my understanding.

Mr. KEITH. On page 17 you say:

> I am not aware that anyone participating in these hearings has suggested that additional mandatory flammability standards are warranted or feasible under the existing state of our technology.

I sort of got the other impression from the Government witnesses.

Mr. DENT. I am not aware of any new standards that were recommended. Largely the authority to establish these has been requested.

Mr. KEITH. Without them being warranted or feasible?

Mr. DENT. That is what the bill provides.

Mr. FIELD. I think it is also saying, Mr. Keith, under the existing state of technology that no one has suggested that these new standards are warranted. One of the major problems here of course is the lack of technology, the highly technical subject that we are dealing with, the inability to really do what you people would desire and we would too if it could be done.

Mr. KEITH. On page 18 you say about seven or eight lines from the bottom:

> It is true that the present law contains a criminal sanction, but this is because the present law is limtied to identified substances which were known to be highly dangerous to consumers at the time the law was written.

Are there any additional identifiable substances that might be included as the result of further development in the industry?

Mr. DENT. I am not aware of any. Are any of the industry people aware?

Dr. STAM. Are you referring to the feasibility of flame proofing additional items beyond which are now commercially flameproof, sir?

Mr. KEITH. Yes; and I am referring to other identifiable fabrics that by reason of their flammability we need to take cognizance of in our standards.

Dr. STAM. Your phrase, "By reason of their flammability" probably to our knowledge dictates the answer should be no. We are not aware of products which are on the market that should be included in the mandatory meeting of standards in order to protect the public from undue hazard.

Mr. KEITH. You don't think there are any products that are being manufactured, consumer goods in the textile business, which need to be identified by statute or administrative order in order to further protect the public?

Let's just say, to give a specific instance, that we had to enact the present law because sweaters or cellophane dresses were found to be so hazardous as to require legislative action. What I am wondering is whether there is anything else, potentially or presently, on the market on which we should take action? Do you recognize a hazard that you would like to bring to our attention?

Dr. STAM. I believe, sir, that this is the exact need for the statistics to which this legislation is directed. We do not have a verified basis to say that a specific type of fabric is unsafe for the public.

On an overall basis we know there are a certain number of injuries that hopefully as technology develops can be avoided in this advance of the art, but those are not now known to the industry to the best of my knowledge.

Mr. FIELD. Mr. Keith, I would like to answer that question more positively by saying that we would not be making anything, we have said in our statement, that in our opinion was really hazardous to the public. We experiment and work on a lot of things in industry that never go into production, and we are not in the business to burn people.

We are in the business to protect them. So anything in this marketplace today by our industry we would stand behind it as saying we think it is adequately safe.

Mr. KEITH. Is there any industrywide association that tends to police this kind of venture informally?

Mr. FIELD. I wouldn't say really police it. All of our membership of ATMI, which, as has been mentioned, is 85 percent of the industry, is very keenly aware of the problems of flammability. I believe, Dick Fels mentioned to me, there are probably about 500 testing machines, for example, in active use today. Do we have a regulatory police department for the industry and the association?

No. It is up to each party to see that they do the right thing. I will say, however, that most of us that are active in the marketplace are pretty well familiar with everything that is being sold by not only ourselves, but others.

Mr. KEITH. Every once in a while, as was pointed out the other day by my colleague, Mr. Watkins, some product does get on the market that is really hazardous and undoubtedly gives great stimulus to the Federal Trade Commission and HEW to act.

Mr. FIELD. I can only assure you, sir, that it certainly would never be purposely done by our industry.

Mr. Moss. Would you yield at that point?

Mr. KEITH. Certainly.

Mr. Moss. You talked of your industry. You are talking of the American Textile Manufacturers Association.

Mr. FIELD. We are here to represent them, yes, sir.

Mr. Moss. Do we have significant imports of wearing apparel and fabrics that are utilized in upholstery and draperies and floor coverings brought into this country?

Mr. FIELD. Not being too directly involved in the upholstery and rug business I am not really familiar with that. I would say in the wearing apparel end of things, I think you are familiar with the fact that we think there are entirely too many imports.

Mr. Moss. And would you ascribe to the imports the same care and concern that you have just voiced on behalf of your association?

Mr. FIELD. I would think that at present that regulation is just as applicable to imports as it is to us.

Mr. Moss. Remember, we are talking here of a bill that relates not only to wearing apparel, but to all fabrics.

Mr. DENT. Mr. Chairman, last year approximately 3 billion square yards equivalent was brought into this country from abroad. Most of these products were brought in for one purpose, which is to circumvent the labor standards and wage standards in this country.

Most of them have little novelty but are merely reproductions of products produced in this country. We cannot certify to their flammability or lack thereof, but since they are trying to meet the high standards set in this country it is safe to assume that the majority of them are not a problem, although no one can give blanket endorsement.

Mr. Moss. I think the case of the sweaters that flared so badly just a few years ago, they represented the imported product, if I recall correctly.

Mr. FIELD. I think they were both imported and produced in this country, too.

Mr. DENT. For consumer protection we would endorse keeping these out of this country.

Mr. Moss. This committee is not vested with the jurisdiction to accommodate you. Mr. Keith.

Mr. KEITH. We are a committee on interstate and "foreign" commerce in name only.

One final question. You talk about explicit provisions for Federal preemption. I would like to know whether there is much State law in existence on this subject? Have the States done an adequate job?

Mr. DENT. Let me pass that to counsel on the existence of State laws.

Mr. EISENBERG. We would be glad to submit to the subcommittee a list of State statutes. I believe the chairman has already requested one of the Government agencies to prepare such a list. I do not believe—although I am not an expert on States' activities in this area—that there has been very much legislation on the State level, but there are several States, including California, and I believe New Jersey and Illinois, which do have flammable fabric acts.

To our knowledge none of them goes beyond the provisions of the present Federal law.

Mr. KEITH. Where is your office?

Mr. EISENBERG. Here in Washington.

Mr. KEITH. I don't think personally it is necessary for you to furnish this list.

Mr. MOSS. That has been requested by the committee and is being prepared by the agency.

Mr. KEITH. I have no further questions.

Mr. MOSS. I have many questions, but I am not going to ask them at this time because the counsel has been instructed to consult in this effort to deal with some of the points raised on pages 20, 21, and 22.

I can assure you as far as I am concerned the matter of inventory would be certainly taken into consideration in the draft of any legislation. When we passed the auto safety legislation last year we afforded them an opportunity, particularly in tires, where there was a large accumulation of inventory, for the orderly liquidation of inventory before the act would become effective. I am not overly an advocate of the persuasiveness of the case that you made for voluntary standards. Perhaps that comes from possibly 19 years of legislating where we have dealt with voluntary standards, particularly the format proposed by you in the amendment where you have first the finding of a need, the language would make it clear that it would be somewhat urgent in nature, then the promulgation of a voluntary standards, and if at the end of the year of the operation of that standards, if I am correct, it was not being satisfactorily observed, then the Secretary could propose to the Congress enactment of a statutory requirement.

Is that correct?

Mr. EISENBERG. That is substantially correct. I would just like to make one modification. The Secretary could propose statutory action at any time after the standard was issued. The 1 year has reference to the time period which we were allowed for the promulgation of voluntary standards and reduces to 1 year the 2-year time period provided in the present Federal regulation.

Mr. MOSS. Mr. Dixon has some questions he wants to ask at this time.

Mr. DIXON. In view of the size of the organization it is assumed that you do get some complaints about fabrics and their shortcomings, whether they be complaints related to fire, or durability, or anything else.

Is that correct?

Mr. DENT. In my experience of 20 years we have not received a single complaint based on fire or flammability. We have received complaints on quality levels because our industry is constantly making quality improvements.

Mr. FIELD. Mr. Dixon, Mr. Dent may have been speaking for his his particular company rather than the industry. I think he was.

Mr. DIXON. I mean in the industry. How about the industry?

Mr. FIELD. In the industry the answer to your question is yes. As a matter of fact, we have a very discriminating group of customers that serve the public and they don't hesitate to complain when something is wrong. There have been occasional complaints on flammability.

As we state, cloth will burn. Certainly in an industry that is producing 17 billion yards of cloth, most of it going into wearing apparel, there are going to be some actions and I am sure, for example, there have been some on blankets, even though in that particular area we haven't heard of it.

There have not only been some complaints since the present Flammable Fabrics Act was passed; there have been quite a number of civil law suits. By quite a number, it is meaningless as related to the whole exposure of the total involved, but there have been law suits. There have been settlements out of court. There have been court trials, et cetera, so the answer to your question is yes, there has been some.

Mr. DIXON. Let me follow that up. I stated at the outset, in substance, that because of the size of the industry obviously there have been complaints. I am glad you come up with this flammability aspect because that is what the question was directed to. Do you have records, and have you responded to particular complaints?

Mr. KIRKS. On flammability?

Mr. DIXON. Yes, related to flammability.

Mr. KIRKS. The answer is "No."

Mr. DIXON. You have no records?

Mr. FIELD. Do we have records as an industry of everything?

Mr. DIXON. Complaints arising from flammability.

Mr. FIELD. The question has come up with every company that would make up this industry.

Mr. DIXON. Suppose you tell me what kind of records you do have on flammability.

Mr. FIELD. I would think—I can only speak for my own company—as an industry we do not have any complete records on this subject.

Mr. DIXON. Would it be company by company?

Mr. FIELD. Company by company I would assume they do have knowledge and information.

Mr. DIXON. None with the industry; is that correct?

Mr. FIELD. As a whole, no, sir; there has not been sufficient quantity of it to deem it advisable to require that. This is one of the big problems with the whole thing we are dealing with here, lack of information. But we have had complaints on flammability within the industry on things I can't call them inflammable, because they will burn, but things as heavy as men's work clothing, twill pants catching on fire.

When you get into the details of these complaints, we find that practically all of them came from personal negligence. They have often come from spilling of oil, kerosene, lighter fluid, or Lord knows what else on the clothing.

Mr. DIXON. There is no industry compilation and you have to go company by company; is that correct?

Mr. FIELD. Yes, sir.

Mr. KIRKS. We might amplify that too, Mr. Dixon, by saying to our knowledge there is no complete compilation in the Government's hands or any other private source that will properly identify I think what you are seeking.

Mr. DIXON. Thank you, Mr. Chairman.

Mr. MOSS. Gentlemen, I want to thank you for your appearance and for your presentation. As I indicated, the counsel for the committee have been in touch with you for discussion of some of the specific items that have been identified for further consideration in the committee's work.

Mr. DENT. We thank you for the opportunity to appear and will be glad to cooperate with the staff in any way.

Mr. MOSS. Thank you. The committee will recess now until 2 o'clock, at which time we will hear Mr. Schindel, and Mr. Broun, and Mr. Segall.

(Whereupon, at 12:35 p.m., the subcommittee recessed to reconvene at 2 p.m., the same day.)

AFTER RECESS

(The subcommittee reconvened at 2 p.m., Hon. John E. Moss, chairman of the subcommittee, presiding.)

Mr. MOSS. The committee will be in order.

I am happy to note the presence in the audience of my distinguished colleague, Mr. Keith, which makes it possible for us to proceed under the rules of the House.

Our first witness will be Mr. Philip W. Schindel, executive director, Variety Stores Association, New York. Mr. Schindel.

STATEMENT OF PHILIP W. SCHINDEL, EXECUTIVE DIRECTOR, VARIETY STORES ASSOCIATION

Mr. SCHINDEL. Mr. Chairman, thank you. My name is Philip W. Schindel. I am executive director of the Variety Stores Association whose member companies operate over 8,000 general merchandise stores which are located in all parts of the country.

The Flammable Fabrics Act was sponsored by retailing. The companies I now represent which have stores in New Jersey were among the retailers who asked Jerseyites, former Congressman Gordon Canfield and the late Charles Wolverton, who was then chairman of this Interstate and Foreign Commerce Committee, to pass this law that is now on the books.

Congresswoman Florence P. Dwyer, as a member of the New Jersey Assembly, gave the enactment of the Federal law great impetus by successfully shepherding a virtually identical bill through her State legislature.

We agree with the President that it is time to take a new look at this law which has done so much to eliminate the hazards which gave impetus to its enactment—torch sweaters and other dangerously flammable clothing. It is time to consider extending its coverage to babies' receiving blankets, to bedding, upholstery fabrics, rugs, and drapes.

It is as supporters of this prospective legislation that we offer several suggestions which are designed to make the pending bill, H.R. 5654, more effective.

First, we suggest that there should be a specific protection for all covered merchandize legally produced and in the stream of commerce before the effective date of any changes in flammability standards or coverage. These goods should be exempt from those changes and permitted to clear through all channels of distribution, except of course, when any item is found to be dangerously flammable.

For example, if the flammable standards of wearing apparel should be changed, that which has been considered safe for 13 years would not be subject to retroactive standards. Similarly, newly covered merchandize which was produced prior to coverage should be exempt.

A precedent for such a provision is found in the packaging law passed last year which states, "nor shall any regulation under this Act preclude the orderly disposal of packages in inventory or with the trade as of the effective date of such regulation."

Second, we want to make sure that the recordkeeping in section 4(c) of H.R. 5654 applies to producers and those introducing covered goods into commerce and not at the retail level.

As we understand it, retailers will always be protected by guarantee provisions from their suppliers and will not be required to keep end use records. This is so vitally important that it warrants specific language in the pending bill.

The problem comes into focus when one considers a large counter with plies of short lengths of material, premeasured and marked with a large enough pinticket to hold the folds of material together. Customers select what they want and take it with their other purchases to a checkout counter at the front of the store.

It is impossible for the retailer to "maintain proper records showing the nature of the transaction and acquisition, disposition, and intended end use of the fabrics, related materials or products involved." Who knows what a woman will do with a fabric after she gets it home?

Even exempt merchandize requires similar detailed records as the bill is now written, so please make it clear that invoices or receiving records will be sufficient "record-keeping" for merchandise for which standards or coverage are changed and which we thrust will be permitted to continue through distribution channels.

Third, the main thrust of new coverage deals with "interior furnishings" which are defined as "any type of furnishings made in whole or in part of fabric or related material and ordinarily manufactured, sold or intended for use in homes, offices, and places of assembly."

The expanded definitions of "fabric" (sec. (f)) and of "related material" (sec. (g)) and of "product" (sec. (h)) are very broad.

There is no question about the proposed inclusion of baby blankets, bedding, upholstery fabrics, carpets and draperies. But is not the proposed definition unnecessarily broad? There seems to be no need or desire to cover decorative accessories, party goods, holiday decorations, and such.

It is suggested that a more precise definition of "interior furnishings" be considered—one restricted to fabrics used in "interior furnishings."

If I may I would like to include a brief observation which is not included in my prepared statement which was generated by the testimony given at the opening session of this hearing a week ago last Wednesday.

The impression was given that in the proposed area of expanded coverage, interior furnishings, there would first be a statement of need and the types of merchandise within the broad area would be specified for which it was intended to develop standards of flammability.

In other words, the entire field of interior furnishings would not automatically be included, but parts covered bit by bit.

Now, if this is correct, should not the amendment clearly state it? Related to this is the question concerning those items of clothing for which the exemption would be deleted. Does the wool, fur, flammable fabric and textile section of the Federal Trade Commission lose its right to use practical judgment?

For example, does it mean that the sweatshirts would be automatically outlawed because youngsters have taken to wearing them inside out, and the wrong side might not pass the present test until after a washing or two? One would hope that it is intended that the loss of the exemptions for nonexposed surfaces of clothing and fabrics and interlining would not be automatic, but would be based on demonstrated need.

Our fourth point is our final one. We admit to serious apprehension about the deletion of the specific standard of flammability from the law and the delegation of authority to make or change standards to an agency of the Government.

We read that an official of HEW in a recent speech seems to suggest a number of different flammability tests for different products. We visualize the problems of overlapping fringe merchandise in each test group. This underscores the urgency of our request that we retailers not be required to keep "end use" records.

We are familiar with the problems which the National Bureau of Standards has had and apparently is still having in its work to revise TS191–53, the standard of flammability now in the law. In mid-1965, we are informed, a Technical Subcommittee of the Standing Committee for Flammability of Clothing Textiles proposed changes in this standard. The full Committee saw problems and sent it back for further study.

When revised, the full committee will again consider it. The full committee represents the textile industry, commercial testing laboratories, insurance, consumer, and Federal interests.

We appreciate the fact that Congress does not want to become involved with the technical problems of standard setting or standard modernization.

We considered how protectionist minded standards setters could disrupt and curtail competition from imports.

We have wondered whether use of the United States of America Standards Institute or of some newly formed board or committee should be proposed.

After pondering all the alternatives, we have concluded that we cannot at this time suggest a better alternative than the Department of Commerce and the National Bureau of Standards which is provided in the pending bill.

NBS is experienced. It was given special responsibility in the very sensitive area of undue package proliferation by the packaging bill—a delegation which we supported in testimony on that subject and a delegation on which an impressive start has been made.

So with a concern that is natural and understandable on a question so important, we ask only that it be made mandatory that "distributors" be represented on all NBS Standards Committees having anything to do with the merchandise covered by the Flammable Fabrics. Act.

This will give retailers an opportunity to take part in standards development, more fully determine in advance the effect of new or changed standards on the lowest and most popular priced merchandise, and add a consumer-oriented marketplace dimension to the deliberations of technicians, scientists, and other specialists.

As original sponsors of the Flammable Fabrics Act, we favor its updating and the extension of its coverage.

We have suggested, we have requested, these four amendments:

(1) Protection of goods in the stream of commerce from changes in coverage or in standards.

(2) Exemption from record keeping at the retail level, except for guarantees.

(3) A tightening of the definitions of merchandise to be newly covered.

(4) The specific addition of distributors to NBS Fammable Standards Committete.

We appreciate this opportunity to submit testimony.

Thank you.

Mr. Moss. Thank you, Mr. Schindel. Mr. Keith?

Mr. KEITH. I have no questions, Mr. Chairman.

Mr. Moss. I have just a few. In looking over the summary on page 4 in the first recommendation you would exempt, would you not, the urgent situations which might be uncovered?

Mr. SCHINDEL. Oh, yes. I would indeed and we say so. Anything that proves really dangerous, no question.

Mr. Moss. On the matter of record keeping, other than the end use, there is very little additional record keeping that could be imposed upon you than which you normally as a matter of prudent business practice maintain at the present time; isn't that true?

Mr. SCHINDEL. Well, the reason we included the point, sir, is that we talked this over with counsel for committee in the other body and they weren't sure. They weren't quite sure what the language meant.

Mr. Moss. I don't think you should be burdened with end use record keeping at the retail level. As you point out, it would be very difficult.

Mr. SCHINDEL. Yes, sir.

Mr. Moss. Particularly, let's say under a clearance sale procedure, sometimes almost grab bag operation, it would be impractical to expect.

Mr. SCHINDEL. Well, sir, may we go further than end use? There were other things specified in the pending bill, and in our business today with checkout operations it is impossible for us to keep any records on the floor of the store except what we record on a cash register.

Mr. Moss. My point was really that, other than end use, your records are normally, in a retail establishment today, very complete.

Mr. SCHINDEL. For our records we insist on either a specific guarantee from the vendor on the back of each invoice, or as mechanization comes into the picture and we get punch card invoices, we require a continuing guarantee.

That is about as much as we can handle. From our invoices we can tell from whom and what we buy.

Mr. Moss. On page 2 you make the statement in the third paragraph from the bottom in the last sentence:

> There seems to be no need or desire to cover decorative accessories, party goods, holiday decorations, and such.

Are plastic flowers flammable?

Mr. SCHINDEL. I understand that some of them have been found to be so.

Mr. Moss. Some are and some aren't?

Mr. SCHINDEL. I understand that to be the fact.

Mr. Moss. It isn't at all unusual today to buy a party package, birthday party package, an anniversary package, or aHalloween package. Do you want those exempted? Should those be subject to some reasonable standard of flame retarding treatment? Many times these are of paper and the cost here for a degree of flame retardation is not excessive.

Mr. SCHINDEL. The little rolls that have been placed around the table at birthday parties ever since we were kids, and when you pull the ends and the cap goes off and you bring out a paper hat and some favors and things like that, we have never heard anywhere that anybody has ever, ever been damaged or injured by that merchandise.

Mr. Moss. I am not talking about that. You can actually buy pretty much of a package that has everything in it from a table cover to the napkins and the cups and the party favors and the hats.

Mr. SCHINDEL. I beg your pardon?

Mr. Moss. Isn't that true?

Mr. SCHINDEL. You can indeed. You can get sets.

Mr. Moss. That is right.

Mr. SCHINDEL. As far as we understand it, those paper tablecloths, probably would pass the current flammable standards. This has not been extensively tested, but again there is a mass one-use market.

Mr. Moss. Now that we are extending it I understand you can get packages that even include the hostess' dress.

Mr. SCHINDEL. This has caused us quite some concern and we have been in touch with our friends at FTC about it. Paper apparel at the moment as best we can tell is treated with a flame retardant, no question about the initial test.

I don't know why anybody would want to clean or wash these paper things, but they do, and we advertise that they can be washed and cleaned. When that is done, the flame retardant is reduced.

But so far as any tests that we know about at the moment, while the reduction in flame retardance is there, they still after several washings or dry cleanings meet the present test.

Mr. Moss. In some States, and I believe I am correct, holiday decorations must be treated with flameproofing preparations, fire retardant preparations. I will not attack you for that answer because we

are seeking the information, but I raise these points because of the statement, "There seems to be no need or desire to cover decorative accessories" and I deal there with the increasing use of the plastic flowers in the homes, in public buildings, and elsewhere.

Some of them are excellent imitation. "Party goods", this can be rather an inclusive designation. "Holiday decorations and such."

Mr. SCHINDEL. Now, if we consider in Connecticut, for example, it is not possible legally to have a Christmas tree in a public place, a real Christmas tree. In homes this is still possible.

Now, under no stretch would a Christmas tree I presume be brought under this act, although we all know they are pretty dangerous.

Mr. Moss. We would have to apply some rule of reason.

Mr. SHINDEL. Somewhere along the line.

Mr. Moss. But not excluded completely. These are very broad categories. You are dealing with concern over the broadness of the phrasing. I would merely suggest that your attempt to exclude is almost as broadly stated.

Mr. SCHINDEL. This we in fact did so intend. We hopefully think that if what is intended in the new category could be limited, and it seemed to us that initially it should be fabrics, the bed sheets, and the blankets, and that kind of thing——

Mr. Moss. Is a throw rug a decorative accessory?

Mr. SCHINDEL. That is as far as we are concerned like upholstery fabrics, drapes, and rugs. In our judgment, those basic fundamental thing should well be looked at.

Mr. Moss. Are small throw pillows for a sofa decorative accessories?

Mr. SCHINDEL. Not in my judgment. I think that comes under the upholstery bedding area that we were talking about.

Mr. Moss. So we would have to perhaps define more precisely rather than go to the broad exclusions as set forth in your testimony.

Mr. SCHINDEL. Either that, sir, or have no definition and depend on NBS to announce in advance its intent that this seemed like a dangerous area.

Mr. Moss. I concur in the main thrust of your statement. I think certainly there should be an advisory group broadly representative of the industries which would be affected.

Mr. Keith, do you have any questions?

Mr. KEITH. No questions, Mr. Chairman.

Mr. Moss. Mr. Dixon has some questions.

Mr. DIXON. I would like to go a little further on the line that the chairman was following, that sentence, "There seems to be no need or desire to cover decorative accessories, party goods, holiday decorations and such."

I wondered, when I think that on birthdays, at Christmas time and Halloween we have candles and fire hazards in and around the homes that we don't have ordinarily, I wonder if you have thought that perhaps in this very area we might need more fire protection.

Mr. SCHINDEL. Mr. Dixon, we were concerned. We are all for the protection of the public. However, by having as broad a definition as is here read, we weren't quite sure what it meant. We felt either narrow it down or deliberately make it very broad and depend on NBS to come up with the things that they feel are hazardous and make a case for them. The way it was written seemed to us to open some doors that we wouldn't know how to answer.

Mr. DIXON. You don't have any definition that you would substitute?

Mr. SCHINDEL. I have not. You folks, the counsel of committees are always much better at language than any of us laymen are. I think it needs attention, that's all.

Mr. DIXON. Thank you, Mr. Chairman.

Mr. MOSS. Thank you.

Mr. SCHINDEL. Thank you.

Mr. MOSS. Mr. E. Fontaine Broun, president, Man-Made Fiber Producers Association. Mr. Broun.

STATEMENT OF E. FONTAINE BROUN, PRESIDENT, MAN-MADE FIBER PRODUCERS ASSOCIATION, INC.; ACCOMPANIED BY EUGENE L. STEWART, WASHINGTON COUNSEL

Mr. BROUN. Thank you, sir. Shall I proceed, sir?

Mr. MOSS. Would you introduce your associate.

Mr. BROUN. Yes, sir, I will. First let me say that my name is E. Fontaine Broun, and I represent the association which you have just named, which is a trade association composed of United States producers of manmade fibers representing in the aggregate more than 90 percent of the total United States production of manmade fibers.

Mr. Eugene L. Stewart, of the Washington law firm of Lincoln & Stewart, is the Washington counsel for that association and accompanies me here today.

I would like also, sir, to express my appreciation to you as chairman and to the members of the subcommittee for the opportunity which is afforded me today to appear here and present the views of my association with respect to the proposed legislation now being considered by your subcommittee.

The production of manmade fibers in the United States is an integral segment of the overall U.S. textile industry and provides a great deal of the basic material, in the form of fiber, filament, and yarn, which is manufactured into the articles of wearing apparel, household furnishings and other textile products of interest to this subcommittee.

The member companies of this association, individually and collectively, are concerned with, and desire to foster to the greatest extent practical, consumer safety which is the aim of the proposed legislation being considered by this subcommittee.

H.R. 5654 and its companion bills proposing amendment of the Flammable Fabrics Act are of great importance to manmade fiber producers. Those bills, we believe, are intended to provide machinery for a thorough study of the problems involved, and for informed action by the Secretary of Commerce in the initiation of new or revised flammability standards for fabrics, related material, and products.

These standards, to be effective, must rest on a sound technical and scientific base. To that end we assure the Congress that the technical and scientific resources of the members of this association will be made available to the Secretary of Commerce.

We believe, further, that it is important to assure that the technical and scientific resources not only of the members of this association,

but also of other industry and consumer groups and interested persons, will be made available at the right time for use, and will be used in the best manner in the light of all the considerations that may be involved.

I do not believe anyone can reasonably disagree with the aim of the legislation here under consideration. Certainly the manmade fiber producers represented by this association are for the fulfillment of that aim, which is to reduce to the extent practical, and as soon as practical, any unreasonable risk to the public of harm from flammable fabrics. The question presented, it seems to us, is how to deal with that complex problem where the extent of hazards and the limits of practical reduction of risk are largely unknown.

The one thing we all must strive for in this situation is to make certain that any legislation enacted will assure fully informed action by the Secretary of Commerce.

H.R. 5654 offers one approach to this complex problem. It is incomplete, however, in that it fails to provide notice and opportunity for expression of views prior to action by the Secretary of Commerce under proposed section 4(a).

We believe it is desirable that the Secretary have the benefit of the technical and scientific resources, not only of the members of this association, but also of other industry and consumer groups and interested persons from the outset of this consideration of the standards contemplated by section 4(a).

Accordingly, we suggest that this be made explicit in section 4(a) by inserting after the word "shall" in the first line: ", after notice and opportunity for presentation of views,". That phrase appears in section 4(b) and in section 4(c) dealing with additional and revised standards, and we think it highly important that it be included in secton 4(a).

If I may be permitted, Mr. Chairman, I would like to interpolate something which is not in my prepared statement, which I am led to do by looking again at the provisions of the bill after some of the discussion this morning with respect to section 4(a). I have written out here on a sheet of paper suggested language for consideration, which necessarily was hurriedly written over the lunch hour and I don't offer it as necessarily the best draftsmanship possible, but I think it will point up what I am talking about.

As I looked again at section 4(a) after the discussion this morning it seems to me that there may be an unintended confusion between what is in section 4(d) as proposed and what section 4(a) seems to require on its face; namely, that despite the statements and requirements of 4(d) as to what standards promulgated pursuant to the section shall comply with, that 4(a) says generally not in the singular, but in the plural, that the Secretary of Commerce shall prescribe and publish flammability standards for articles of wearing apparel, fabrics, and related materials. That might lead into a situation of confusion requiring ultimate court interpretation, and perhaps a result which is not intended, that the Secretary willy-nilly, regardless of need, would have to prescribe a standard for every article of wearing apparel, every fabric, every related material.

I therefore suggest for initial consideration, and this is my piece of quick draftsmanship with respect to 4(a), that this committee

consider the possibility of amending section 4(a) which appears in lines 11 through 15, page 4 of H.R. 5654 to read:

SEC. 4. (a) The Secretary of Commerce, if he determines after notice and opportunity for presentation of views, that a flammability standard (including conditions and manner of testing) for any article of wearing apparel, fabric, or related material used in the manufacture of articles of wearing apparel is needed to protect the public against unreasonable risks of the occurrence of fire leading to death, injury, or significant property damage, shall prescribe and publish in the Federal Register a flammability standard for such article of wearing apparel, fabric, or related article reasonably adapted to protect the public against such risk.

Mr. Moss. Mr. Broun, I think the committee is cognizant and the committee regards the drafting of section 4(a) as being rather poorly done; and we a week ago directed that work be commenced on the redrafting of that section.

Mr. BROUN. I gather that, sir, and I came forward with this because it didn't seem to me that the discussion this morning had brought forth this possible point and I thought it might be helpful to you if I put this in the record, which I have done.

Mr. Moss. We appreciate it.

Mr. BROUN. We do not purport to be able to anticipate, of course, or specify all the problems which may merit consideration in deciding upon the provisions of the legislation which you are considering. With the incorporation into H.R. 5654 of a provision such as I have just suggested in my written statement for notice and opportunity for presentation of views as to the standards which the Secretary of Commerce is required by proposed section 4(a) to establish for articles of wearing apparel, fabrics and related materials, and very probably with a further change in that section to meet that further problem we were discussing, we think that the legislation will afford a basis for accomplishing its aim.

We do not suggest, however, that the approach of H.R. 5654 is necessarily the only approach that could be adopted to reduce to the extent practical, and as soon as practical, any unreasonable risk to the public of harm from flammable fabrics.

Other suggestions in that regard have already been made to the committee today, and may be in future testimony and I am sure will receive its careful attention.

Whatever approach is adopted in any legislation enacted, the members of this association desire to cooperate with the Secretary of Commerce in forwarding the aim of the legislation.

I now turn to a suggestion with respect to House Joint Resolution 280 similar to what I have said with regard to H.R. 5654. We believe it is desirable that the Commission contemplated by that resolution should have, at the outset of its consideration of household products under section 2 of the resolution, the benefit of the technical and scientific resources and marketing experience of manufacturers and distributors; and that, accordingly, there should be a provision in the resolution for notice from time to time as to the household products which the Commission intends to consider, and an opportunity to interested persons to submit information to the Commission with regard to such household products.

For the same reason, as to the provisions of section 3(e) of the resolution, we suggest that it would also be desirable if prior to pub-

lication the Commission were to be required to give notice of its intent to publish and a summary of the information, to all known trade associations representing producers of the affected product, or products, with an opportunity to such associations and producers to submit information concerning the matter for consideration by the Commission prior to publication.

Accordingly, in that connection, we suggest that House Joint Resolution 280 should be amended as follows:

1. In section 2 change subsection (b), line 18 of page 3 to (c) and insert a new subsection (b) reading as follows:

(b) As soon as practicable, and from time to time, the Commission shall publish a list or lists of the household products it intends to investigate under this section, and afford an opportunity to interested persons to submit information concerning such household products, including information with regard to the matters set forth in subparagraphs (1) through (4) of the subsection (a) of this section.

2. In section 3(e) add in place of the period in line 13, page 6, the following new proviso: "; and *Provided, further*, that the Commission prior to making pubic any information pursuant to this subsection concerning any household product shall give notice to all known trade associations of producers of such product of its intention to make such publication, and make available to such associations a summary of the information it proposes to publish, and afford to any interested association or producer of such household product an opportunity to submit information with respect to the matter for consideration by the Commission prior to such publication."

Whatever approach is adopted in any legislation enacted, we say again that the technical facilities and resources of the members of this association will be made fully available to the Secretary of Commerce and the Commission.

Mr. Moss. Do you have any questions, Mr. Keith?

Mr. KEITH. No questions. One comment. The association does seem to have a very constructive approach to this problem.

Mr. Moss. I want to concur. However, I would say that in reference to House Joint Resolution 280 we, I think, clearly contemplate that this Commission would of necessity consult with the industry's representatives represented by the products in the study.

With the fact that it is required to report to the Congress by January of 1969 we are not proposing that it be a permanent establishment in the Government, and I think that the specifics and details proposed on pages 5 and 6 of your statement could prove needlessly burdensome and time consuming.

The resolution requires reasonable publication, requires access to these records except to the extent necessary to protect trade secrets. I can't conceive of such Commission undertaking the type of study meant without the broadest consultation with the industries concerned.

Mr. BROUN. Mr. Chairman, we say first we have no intention in making this suggestion to throw sand into the wheels and delay the operation of the Commission.

Mr. Moss. I accept your views as constructive. I concurred in the observation of Mr. Keith, but I merely observe that there is in my judgment inherent in the resolution the main objective sought by your broad, specific language.

My fear would be that the specific language would prove unnecessarily burdensome and time consuming if we are to get the Commission's report back to the Congress by January of 1969.

Mr. BROUN. May I just add this one short statement? We considered the time problem. We put this forward with the idea that it would not, as we saw it, have that effect. Mr. Stewart has worked with me on this. He is a little more familiar with the details of the procedure than I and, if you give him just a moment to express his views on it, it might be of assistance to you in considering the problem.

Mr. MOSS. We would be very happy to hear him.

Mr. STEWART. Thank you, Mr. Chairman. Without laboring the point let me by way of clarification say that the amendment proposed for section 2 by the addition of a new subsection was not intended to require public hearings or anything of that sort, merely that at the time the Commission concludes that it will investigate a particular product or group of products, it would give public notice of that intent in the Federal Register and thus afford persons interested in that product an opportunity to submit written views which would be then positively available to the Commission for study in the work that it was doing, formulating a report on those products.

It is conceivable that without such an explicit requirement in the bill the Commission particularly under pressure of time might proceed without always approaching the affected industries or groups or really understanding or having the time to learn who all of the interested groups might be.

It would not add to the time or the burden of their work to publish an identification of the articles they have decided to investigate, and the attention they can give to written material submitted would be measured by the time that was then available to them, but surely they could give some attention to it.

Mr. KEITH. Mr. Chairman, it seems to me that this philosophy is entirely in keeping with your own in reference to dissemination of information in connection with all activities of the Federal agencies.

Mr. MOSS. The gentleman is most gracious to make the observation and I would submit that the chairman's previous statements are not inconsistent with the chairman's attitude toward disclosure. I thank that the matter could be handled quite adequately in a report accompanying the resolution without binding the hands of the Commission needlessly by statutory language which in effect could be imposed resulting in a requirement almost as stringent for notice of hearing as in the Administrative Procedure Act.

Mr. STEWART. I would bow to the chairman's greater wisdom and experience in that regard.

May I offer just a word in regard to the amendment of section 3, subsection (e) which appears on page 6. Here we have a rather different sort of problem.

In this subsection the Commission would be empowered to make public information where it felt the public interest would be served. One of the occasions on which it would so publish would be where it might feel that there was such a problem posed to the public through the marketing of a product that prior even to its submitting a report to the Congress the public should be alerted to the existence of the problem.

The very publication of such information, however well intended, could result in very considerable harm to the organizations producing and distributing the product in question.

Now, we are simply recommending that prior to the publication it contact, not every producer, but the known trade associatons of such a product, give them a general idea of what it proposes to publish and an opportunity to present written views, not a public hearing, so that every precaution will be taken based upon full knowledge of the situation against inadvertently harming any significant commercial or business interest.

Mr. Moss. What percentage of producers belong to the trade association?

Mr. STEWART. Well, I would be presumptuous if I purported to give you are authoritative answer to that. In my own experience in representing trade associations, which is the major part of my practice, I have come to the conclusion that in many industries producers accounting for more than 90 percent of the total capacity for the particular product line in question belong to trade associations, and whereas it would be theoretically desirable to have 100-percent coverage, 90 percent would seem to be better than no effort at all.

Mr. Moss. I notice that you have very, very carefully modified your response by saying 90 percent of the capacity.

Mr. STEWART. Yes.

Mr. Moss. In numbers of producers rather than in capacity to produce, how many belong to trade associations?

Mr. STEWART. It would depend really, Mr. Chairman, and I am not trying to avoid the question, on the particular industry. In some industries where you have a rather limited number of producers most producers would belong to the association. In other industries, take the case of the American Textile Manufacturers this morning where there are many hundreds of producers, according to their testimony they represented about 85 percent, and I understood their answer to mean of the number of companies.

Certainly, I think in any instance it represents the majority, the known trade associations would represent the majority, of companies without regard to the amount of capacity involved.

Mr. Moss. But supposing the product is one that is broadly represented by independent small producers who are not part of trade associations.

Would this be an equitable treatment of them if the only information required was given to trade associations?

Mr. STEWART. Perfection of course would call for public notice in the Federal Register. The vice of that is the very fact of such public notice that the Commission was proposing to publish information about a certain product would have the same harmful result that we would intend to avoid in selected instances by better information.

Now, since the purpose of the notice is to afford a final input of information into the Commission, those particular producers who also would be harmed by a premature or inadvertent publication who did not get actual notice because they didn't belong to an association would nevertheless be benefited by the fact that other producers who were knowledgeable did submit information that helped inform the committee fully about the matter.

Mr. Moss. You don't feel that the language beginning on page 6, line 6, dealing with the data and information which would disclose business transactions of any person, "trade secrets or names of customers shall be held confidential and shall not be disclosed by the Commission or its staff," would be adequate protection?

Mr. STEWART. No, Mr. Chairman.

Mr. Moss. I am concerned. About how much time do you want to consume in this notice that is to go out to producers of a product? Maybe a group of products might be studied concurrently, maybe electrical appliances, small hand appliances, or it might be in the field of household detergents, bleaches, cleaning agents, things of that type where there is an interrelation. They are used commonly in the home in close proximity with each other and we know today there is danger in the mixing of certain of them which individually are not dangerous, but combination with others could be dangerous.

How much notice do you think should be given?

Mr. STEWART. Well, since the provision in question relates not to the general investigation category work of the Commission but something that they would decide in special instances to make public, it would seem to me that a very short period of time would be reasonable, but that some notice and some opportunity for input would be manageable and on the whole helpful to the Commission itself.

Mr. Moss. What would you feel would be an adequate period of time?

Mr. STEWART. I should think that if the trade association from the date of actual notice were afforded 2 weeks time in which to make a submission in those instances where the nature of the information was to warn the public against some possible danger that that under all of the circumstances would be reasonable and it is something that an association through its committees could very probably cope with.

Normally we would prefer more, but under these circumstances, given the nature of the commission and its life, I would think in some instances as little as 2 weeks would be quite reasonable depending upon the circumstances the committee might judge that a greater period of time would be afforded in other cases.

This is a matter to be left to the discretion of the Commission. The language that you referred to about protecting trade secrets and confidential business data does not relate to the problem I pose, but merely is intended to afford assurance that when the Commission through its subpena power or investigatory procedure or otherwise has access to confidential business data, in any event those trade secrets would not be disclosed under section 3(e).

Mr. Moss. Mr. Dixon.

Mr. DIXON. No questions.

Mr. Moss. I want to thank you, gentlemen, for your appearance. Your recommendations will be considered by the committee.

Mr. STEWART. Thank you.

Mr. BROUN. Thank you very much, Mr. Chairman, for hearing us.

Mr. Moss. We are pleased to hear from Mr. William Segall of the National Cotton Council of America.

79-071—67——11

STATEMENT OF WILLIAM SEGALL, REPRESENTING THE NATIONAL COTTON COUNCIL OF AMERICA; ACCOMPANIED BY J. BANKS YOUNG, WASHINGTON REPRESENTATIVE OF THE NATIONAL COTTON COUNCIL

Mr. SEGALL. Mr. Chairman, I have with me J. Banks Young, who is the Washington representative of the National Cotton Council.

My name is William M. Segall, and I appear before you representing the National Cotton Council of America, which is the overall organization of the raw cotton industry with headquarters in Memphis, Tenn.

The council is made up of, and represents, all seven branches of the industry that produce, handle, and process row cotton and cottonseed.

These branches are producers, ginners, warehousemen, cooperatives, merchants, spinners, and cottonseed crushers in each of the 19 cotton-producing States from the Carolinas to California.

In addition to representing the council, I am also chairman of the Committee on Clothing Flammability of the American Association of Textile Chemists and Colorists, ad hoc chairman of the Testing Committee of the Information Council on Fabric Flammability, and a member of the Department of Commerce Standing Committee for CS 191, the current flammability standard for clothing fabric.

The raw cotton industry is wholeheartedly in favor of any program that will contribute to greater safety for consumers—those who wear or use items made from our product.

But we are opposed to some of the provisions of the proposed bills, because it is our feeling that (a) they will not contribute to greater safety; and (b) they have at least the potential of being harmful and disruptive to the operations of the raw cotton and cotton textile industry.

Let me hasten to add that, while we oppose H.R. 5654 in its present form—and urge that it be amended or modified before adoption—the raw cotton industry pledges full cooperation with the Department of Commerce, the Department of Health, Education, and Welfare, the Federal Trade Commission, and any other agencies of the Federal Government in working toward solutions to the problem of burn injuries, and in the development of treatments for textile materials, test methods, and flammability standards that can truly contribute to greater consumer safety.

In 1953, the 83d Congress addressed itself to a clearly defined task. Let me quote to you a portion of Report No. 425 of the House of Representatives on H.R. 5069, the bill that later became the Flammable Fabrics Act:

> The major problem in formulating legislation to control the use of dangerously flammable textiles is to discriminate between the conventional fabrics that present moderate and generally recognized hazards and the special types of fabrics which present unusual hazards and are highly dangerous.

This, in essence, was and is the philosophy of the Flammable Fabrics Act: ". . . to discriminate between . . . conventional fabrics . . . and fabrics which present unusual hazards . . ." and in this the Flammable Fabrics Act has done its job admirably.

The original proposals for flammability legislation in 1953 provided that changes in flammability standards would be made by the Secretary of Commerce—the same kind of provision that is in H.R. 5654.

At that time, the industry objected to such a provision and proposed that the Secretary of Commerce be restricted to the procedure that was then specified for the development of commodity standards.

The final act embodied a compromise. Again, let me quote, this time from Report No. 400 of the U.S. Senate on H.R. 5069:

> The compromise reached by the House Committee on the procedure to be used in . . . changes—in standards—is a good one. The House solution places responsibility for changes in the applicable commercial standards on the Congress, where such responsibility should rest.

The industry agreed at that time with the sentiments expressed in the Senate report. We feel that this is still where the responsibility should rest in an issue that affects so broadly the interests of the general public and one of our country's major industries.

The Flammable Fabrics Act has worked well. It has done the job it was designed to do. Unusually hazardous, highly dangerous fabrics have been kept off the market. The problem is, of course, that accidents still occur as a result of carelessness and other factors.

And it is fairly clear that the majority of fabrics involved in these burn injuries are normal fabrics—fabrics that would not by any stretch of the imagination be considered dangerous.

So, it is generally recognized by both fire safety experts and textile authorities that no significant change in the number of accidents could be accomplished by for example a change in the permissible time of burning as currently specified in the flammability standard.

On the other hand, a slight change in the permissible time of burning would remove from the market vast quantities of fabrics that we all wear and consider completely safe.

We recognize that there are certain inadequacies in the current flammability standard. In the first place, the test suffers from a lack of precision. While it is perfectly capable of differentiating between fabrics that differ widely in their flammability characteristics—and this, after all, is what the test was designed to do—its ability to make finer distinctions is subject to question. The inherent variability in the test method, and in the fabrics themselves, can lead to erroneous conclusions from the results.

There are also questions about the validity of the test, that is, are we measuring in all cases what we think we are measuring?

Fabrics which in everyone's opinion are completely safe are sometimes eliminated from commerce because of the failure of the test to provide adequate discrimination of flame intensity. For example, I am aware of an instance where two lightweight fabrics both burned rapidly—one with a small flame in less than 3½ seconds, the other with a voluminous flame in slightly more than 3½ seconds.

The latter was undoubtedly a more dangerous fabric, but it passed the flammability test. The fabric that burned with the small, nonintense flame, however, was declared "hazardous" and banned from the market.

Conversely, the lack of a method for testing narrow fabrics and loose fibrous materials could allow some dangerous materials to be used. These shortcomings are now under study. New procedures for testing narrow fabrics and loose fibrous materials have been devised, and are now being evaluated.

Some research has also been done by the National Bureau of Standards on the measurement of flame intensity, but this is complicated subject and we doubt that a satisfactory solution has been reached.

Another shortcoming of the test method is its failure to take into account elements of hazard other than flaming. There are certain synthetic-fiber fabrics that resist flame propagation, but they do it by melting and falling away.

These thermoplastic fibers are known to cause serious injury when used in apparel; the hot melting characteristic of synthetic fibers has been cited by medical authorities as a hazard frequently more serious than flaming.

And so we recognize the value of having some mechanism by which standards can be improved. But it is our feeling that changes in the standards should be proposed by the Secretary of Commerce as called for by the present act.

The Secretary, incidentally, has proposed no change in the more than 13 years since the act was adopted.

Our concern is that some unrealistic change will be made in the standards that will outlaw large quantities of cotton textiles—to the detriment of both the industry and the consumer.

A very real danger is that standards arbitrarily promulgated would promote the use of certain specialized fibers at the expense of other fibers which may be more combustible, but which have provided complete consumer satisfaction for centuries.

There are certain modacrylic fibers that have a degree of inherent flame resistance, and are being promoted for carpet and rug use, and for certain clothing and household items.

But these fibers are appreciably more expensive than cotton and rayon, they are more difficult to dye, they are nonabsorbent and thus not comfortable in clothing, and they have limited launderability.

At the present time these fibers are not a major factor in the textile market, but an arbitrary standard could give them an unfair advantage. We understand that at least some of the producers of these fibers are interested in this legislation because they see in it an opportunity to increase their sales.

Glass fiber is another example. This is a totally nonabsorbent fiber that would be uncomfortable in any clothing use. It can cause skin rashes, and its low abrasion resistance and other disadvantages today limit its acceptability to consumers.

But arbitrary standards could unfairly change this picture.

Even wool, an excellent natural fiber highly satisfactory in many uses, could unfairly profit through illdrawn standards. Wool is quite fire resistant, and we are aware that certain wool interests favor the proposed legislation and see in it the prospect of larger markets.

However, the relatively high price of wool, its limited launderability, and its tendency to irritate the skin would make it entirely unsuitable for many uses, as for example baby blankets.

I want to make it clear that my references to other fibers are not intended to be critical. These fibers all have their place in the textile market, a place which is now, and should continue to be, determined by consumers on the basis of the price and performance on these materials.

It would not be fair to the public, nor to the industry, to provide a market for specialized fire-resistant fibers at the expense of other products which consumers find to be eminently more satisfactory.

Another provision of the current bill to which we take exception is the proposal that new standards, and hence further expansions of the scope of the act, "shall become effective 6 months from the date on which such standards or amendments are published."

It seems to us that 6 months is totally unrealistic. The Flammable Fabrics Act, when originally passed, provided a 12-month waiting period—in addition to the fact that the industry had had considerable prior experience with the standard, and knew to a large extent what fabrics would be excluded by the standard.

It is a well-established fact that in the textile industry many products are in the channels of trade for periods up to 2 years. And so we would urge that this provision of the bill be changed to give at least 18 months delay in the implementation of any new or amended standards.

We are opposed to the extension of the act to include applications other than clothing. Wearing apparel obviously calls for special attention because of the difficulty offered by buttons, zippers, and other fastenings.

It takes time to remove a garment, and a garment is in intimate contact with the body. A blanket, on the other hand, can be thrown off the body, and one can simply walk away from upholstery or drapery.

"Interior furnishings" are no more unique in their ability to create hazards than the lumber used in building construction or the newspapers and other flammable items that exist in any household.

We do support the authorization for the Secretary of Health, Education, and Welfare to conduct investigations of deaths, injuries, and losses resulting from burning.

In the opinion of the industry, such investigations are long overdue.

There is notable dearth of factual information on the subject of burn injuries involving textile fabrics. Some of the figures cited in press releases and in the Congressional Record concerning these hearings obviously are conflicting and largely incorrect.

Many of them refer to fires "involving" clothing. But "involving" cannot be taken as equivalent to "caused by." The person who is seriously burned because he was sprayed with flaming oil by an exploding heater would have been injured no matter what he was wearing.

For example, let me quote from a study made on burn accidents several years ago. This was an investigation of fabrics "involved" in wearing apparel burns by the Committee on Accident Prevention, American Academy of Pediatrics, and the Committee on Wearing Apparel, National Fire Protection Association.

Case No. 5 is described as "slip being worn by 12-year-old girl while she lighted oil-fired range ignited when range exploded"; case No. 6 says, "shirt tail of 44-year-old man became moistened with range oil while he was cleaning the kitchen range. Shirt tail ignited when he went to the basement and opened the door of coal-fired furnace"; and case No. 56 describes how a "19-year-old girl spilled fuel oil on nightgown when she got up to light oil stove. Ignition occurred when she bent down with match to light stove."

No one could honestly claim that the fabric—whatever it was—was at fault in these cases. But an investigation of these accidents could produce information which would tell us more about the real causes of burn injuries involving textiles.

We feel that in a great majority of cases the causative factor will not be the textile fabrics and garments themselves.

We hope that the proposed studies by the Department of Health, Education, and Welfare will fully assess causes, major and minor, of these accidents.

From such studies could be obtained information on which to base significant work toward solutions to the whole problem of burn injuries.

We also favor the authorization for the Department of Commerce to conduct research on test methods, and on treatments to reduce the flammability of textiles.

In our opinion, the best longrun answer to the problem of fire safety will be the development of efficient, economical fire retardant treatments applicable to a wide variety of fabrics. Unfortunately, this kind of treatment is not available now.

Chemical treatments of various kinds to prevent the burning of textile fabrics have been available for a long time. Simple nondurable treatments are in fairly wide use where properties such as hand and stiffness are not critical, and durability is not needed.

But for most textile applications, a durable treatment is needed, one that has no adverse effects on other properties of the fabric or garments.

At the present time, durable finishes are suitable for certain applications—outdoor fabrics, and a few specialized clothing and household items. But in general these finishes are seriously deficient in that they greatly affect the texture and absorbency of the fabric, as well as other properties important in most applications.

Their deficiences are particularly apparent when applied to lighter weight fabrics, in which the need for added protection is generally greatest.

Their effect on fabric properties is to a large extent a result of the excessive amount of chemical that must be added—frequently 20 to 22 percent of the weight of the fabric—to produce the flame resistance.

This large add-on results also in high chemical cost, which makes the treated items in many cases too expensive to be acceptable to consumers.

And so there is a great need for research to develop improved fire resistance finishes, with lower costs, with minimum effect on other fabric properties, and if possible, with other benefits that consumers find desirable.

The U.S. Department of Agriculture has a long record of successful accomplishments in the area of fire-resistant treatments.

The raw cotton industry has encouraged this work by the Department, and we are confident that it will continue to produce significant advances.

The cotton industry itself has increased its research effort in this direction. A project has been placed by the Cotton Producers Institute with a major research institute for the development of improved methods for producing fire retardant cotton fabrics.

Additional research studies of this type are being planned.

In summary, the raw cotton industry is highly in favor of the proposed research and statistical studies that are provided in section 10 of the bills. We have definite reservations, however, about the features of the bill that would—

(1) Expand the scope of the Flammable Fabrics Act without any clear idea of how it can be done, and

(2) Place the authority for making changes in, or amendments to, flammability standards in the hands of the executive department.

We urge that Congress give consideration to delaying action on both of these proposals until such time as the need can be shown, and firm, realistic standards can be proposed.

We thank you, Mr. Chairman, for the opportunity of presenting this information.

Mr. Moss. Mr. Keith?

Mr. KEITH. Thank you, Mr. Chairman. You mentioned that the cotton industry itself has increased its research efforts in an effort to find some answer to the problem of fiber irritants. Do you know how much money has been devoted to that end?

Mr. SEGALL. The project to which I referred in my statement is a project of $40,000.

Mr. KEITH. And when was this money first allocated to that end?

Mr. SEGALL. Sometime last fall. I am not sure of the exact date.

Mr. KEITH. In the directive for the organization conducting this study, when are they expected to make their first report?

Mr. SEGALL. Reports are ordinarily made on a Cotton Producers Institute project quarterly and I would imagine that the first report has already been filed.

Mr. KEITH. I think it would be helpful if we could have the benefit of that report and subsequent ones.

Mr. SEGALL. I am sure this could be made available. On the other hand, I am not aware that any great advances have been made in the project up to this point.

(The following letter was received by the committee:)

NATIONAL COTTON COUNCIL OF AMERICA,
Washington, D.C., April 24, 1967.

Mr. W. E. WILLIAMSON,
Clerk, Committee on Interstate and Foreign Commerce, House of Representatives, Rayburn House Office Building, Washington, D.C.

DEAR MR. WILLIAMSON: Following my testimony April 14 on H.R. 5654, I was questional about the research project that the cotton industry has instituted on fire resistant treatments. It was requested that the last report on this project be filed with the Committee.

This project was begun in January of this year but, as can be seen from the enclosed Project Evaluation Sheet, no quarterly report was submitted at the end of March.

Since much of the preliminary work will be devoted to synthesizing new chemical compounds, there will probably not be much progress to report for at least six months.

I hope that the enclosed evaluation will answer any of the Committee's questions.

The Committee also requested from me a report on the new treatment for fire resistance that will be the subject of a paper at the Southern Utilization Conference in New Orleans this week. I will attempt to obtain a copy of the paper that is to be presented, and forward it to you. I also understand that the Committee has requested a statement from the Department of Agriculture.

and I am sure that their work on fire resistance treatment for cotton will be thoroughly covered in their testimony.

If there is any further information I can provide, please let me know.

Sincerely,

WILLIAM M. SEGALL.

PROJECT EVALUATION, APRIL 20, 1967

Project No. and Title: CPI 67-90. Flame Resistant DP Finish.

Research Organization: Stanford Research Institute, South Pasadena, Calif.

Summary of Progress: The ultimate objective of this project is to develop a combination finish for all-cotton fabrics which would have both durable press and flame retarding characteristics. The requirements of such a finish would include freedom from toxicity or sensitization: functionality at add-on levels not causing undue change of hand and at reasonable cost; launderability; and adequate resistance to light. Of these requirements some are more important than others, and not all of them are mandatory.

The project was officially initiated at the beginning of this year, but SRI had a number of experiments in progress and actual work on the project did not begin until later in the year. No written reports on the project have been received to date, but according to verbal reports work is in progress on the synthesis of compounds selected for initial trials. These compounds are phosphorous- and halide-containing, and should also be able to crosslink cellulose.

Appraisal of Project: The project is so new that it cannot be appraised at this time.

Usefulness of Information: While several flame resistant finishes are available, they all suffer from one or more disadvantages. In view of the likelihood of legislative action in this area the develoment of a flame resisting finish free of such distadvantages is urgently needed.

Recommendation: Continuation of the project along the lines indicated in the Plan of Work is recommended.

Mr. KEITH. It would seem to me that $40,000 is a relatively modest sum in view of the volume of business that the industry does and the apparent interest in this particular problem.

Mr. SEGALL. I admit that the Congressman is correct in this and this is merley due to having limited funds available for this kind of research. We would hope that now that additional funds have been made available by the cotton industry for research, by the Research and Promotion Act, that work along this line could be expanded.

Mr. KEITH. I would hope so too. Have you seen any substantive reports from the Department of Agriculture to give some credence to your comment about their long record of successful accomplishments in the area of fire-resistant treatments?

Mr. SEGALL. Yes, sir. It was, I think, established in testimony this morning that the only successful durable treatment that exists now, Which is either THPC or APO–THPC, was developed by the Department of Agriculture; and they are announcing a new treatment in their technical meeting which is to be held the week after next in New Orleans, but about which I do not have any details.

Mr. KEITH. Will you or representatives of your organization be present at that meeting?

Mr. SEGALL. Yes, sir, I certainly will.

Mr. KEITH. The announcement you expect is the kind of information we should have furnished to the committee.

Mr. SEGALL. I will see that it is.

Mr. KEITH. I have no further questions, Mr. Chairman.

Mr. MOSS. I think perhaps it would be very beneficial to have the Department of Agriculture appear and give some testimony here, particularly on the nature of their research. We have already sought to have them develop some projections on costs.

At this point I would like to place in the record the summary of a history of cases which were incorporated in the record of the hearings in 1953, the 83d Congress, at the time of the enactment of the original Flammable Fabrics Act, beginning at the bottom of page 2 continuing through 3 and down to the second complete paragraph on page 4 of the report of the Committee on Interstate and Foreign Commerce.

(The material referred to follows:)

EXCERPTS FROM HOUSE REPORT NO. 425, 83D CONGRESS, FIRST SESSION CITING CASES INVOLVING HIGHLY INFLAMMABLE WEARING APPAREL

Martha M. Gross, Kansas City, Mo., had a sweater patterned after angora, having long, fuzzy nap, purchased in Baltimore. The head of a match flew off against the sweater, igniting it. Her brother and sister came to her rescue and both were burned. She was very ill and suffered disfiguring scars and her hands were injured so that she could no longer follow her profession, which was that of a stenographer and secretary.

I would like to add here that she sent a very pathetic letter to the National Bureau of Standards, and to other departments, asking whether something could not be done to prevent such accidents happening to others. She said it was all over with her case, but certainly life was still dear in America.

Then, we have the case of Doris E. Diffenbach who was injured when a cotton chenille dressing gown took fire.

Georgia Stevens, 18-year-old coed, was burned to death at a sorority initiation rite last spring at the University of Texas. It was a candlelight initiation and her gown brushed against a lighted candle. She died the next morning.

Virginia Black wore a white tulle dress at a coming-out dance at the St. Regis Hotel. The dress caught fire and she was severely burned. She is still in the hospital, I understand.

Angelica and Harry Murphy are bringing suit for $125,000 because of some apron material, a coated fabric so highly flammable that when it came in proximity of a heated stove it took fire and severely burned her and her husband.

Mary Lee Cummings, aged 5, Whittier, Calif., was wearing a plastic raincape and backed into a radiant heater which ignited the plastic, causing second- and third-degree burns from which she died. That is the one that Mr. Dorn referred to in his testimony, and was reported by the California State fire marshal.

I need hardly refer you the twenty-odd boys 3 to 8 years of age who were burned, maimed, and 6 of whom died, as the result of burns sustained when their cowboy suits took fire.

The National Fire Protective Association records the following:

In Oakland, Calif., a girl died from burns received when her costume caught fire at a lodge entertainment.

In Magnolia, Ark., a Negro woman died from burns received when a grass dress caught fire from a can heater in a dressing room of a traveling minstrel show.

In Omaha, Nebr., a child dressed in an Indian costume which caught fire from the lighted jack-o'-lantern she was carrying. She suffered fatal burns.

I might add that children go to communion or confirmation carrying lighted candles and have been injured.

In New Orleans on February 12, 1947, a bride, Mrs. Jess Rockenbaugh, was wearing a bathrobe which caught on fire. She was saved by her husband who cut the robe belt and pulled off the robe, but not before she suffered third-degree burns, and she is still in the hospital.

In Old Greenwich, Conn., a man's pajamas caught fire from the kitchen range. He suffered fatal burns. Those were cotton nap pajamas.

In Portland, Oreg., a man died of burns received when his trouser leg became ignited by a match. I do not know what he was wearing.

In Washington, D.C., a child's costume became ignited from a candle in a jack-o'-lantern. She was out in the yard when the accident occurred. She suffered fatal burns.

In Indianapolis, Ind., a woman pulled a light plug from a receptacle when a short circuit occurred, throwing sparks onto her dress. She suffered fatal burns.

In Yonkers, N.Y., a 4-year-old child was turned into a blazing torch as her Haloween costume was ignited by a jack-o'-lantern. She died in a hospital.

In Detroit, Mich., a man died of burns when his bathrobe caught fire when he was tending the furnace in his home.

In Denver, Colo., a woman suffered fatal burns when her clothing ignited while standing in front of a lighted fireplace.

I might mention a few others mentioned this morning. Namely: Mrs. Booth Tarkington was wearing some hair combs and was drying her hair in an ordinary hair dryer when she suffered severe burns owing to the ignition, spontaneous ignition, of those combs.

There was also a case of a woman sitting in front of a chafing dish wearing nitrocellulose buttons. These buttons practically exploded in her face and set her afire. She died of her injuries. This is given in Coronet under the heading of an article headed "Fire Trap."

I need not go on, I think, with the recitation of these cases. They extend over many years. They have grown more numerous within recent years.

SOME NEWSPAPER CLIPPINGS RECEIVED BY THE FEDERAL TRADE COMMISSION RELATING EXPERIENCES INDIVIDUALS HAVE HAD WITH DANGEROUSLY INFLAMMABLE BRUSH RAYON WEARING APPAREL

The Kansas City Times of January 9, 1952, reported under Los Angeles dateline of January 8 that the fire captain of Los Angeles had received reports of at least a dozen cases in which brushed fabric sweaters had caught fire and at least eight persons injured by burns.

The Kansas City Star of January 10, reported that Paul Blake of Kansas City ignited a cigarette with his lighter and when he placed the lighter into the sweater pocket, the sweater burst into flames. Four fellow employees saved him from burns by beating the flames out after half the sweater had been consumed.

The New York Times of January 12, 1952, reported that Robert Flavin of Long Branch, N.J., was burned on both hands the day previous when a sweater he was wearing flared up as he struck a match to light a cigarette.

The New York Sunday News of January 13, 1952, reported that Mrs. Mary Sheffield of Newark, N.J., was burned about both hands when the sweater she was wearing suddenly burst into flames as she turned on her gas stove to prepare a meal. The same issue newspaper reported that at least 20 persons throughout the country had been injured by flaming sweaters.

The Norristown (Pa.) Times of January 14, 1952, reported that Edward C. Martin of Schwenkville lighted a cigarette with a match and the sweater he was wearing went up "like a Roman candle." A friend extinguished the fire by throwing water on the sweater but not before Martin's neck was scorched.

The Washington Post of January 16, 1952, reported that J. Patrick Staubs of Silver Spring, Md., escaped serious injury the previous Sunday when the sweater he was wearing on a golf course caught fire as he lighted a cigarette.

Mr. Moss. I find the summary on page 8 very interesting in that you highly favor section 10 of the bills and conclude by urging "Congress give consideration to delaying action on both of these proposals until such time as the need can be shown, and firm, realistic standards can be proposed."

Where would our beginning be?

Mr. SEGALL. I am sorry. Perhaps I was not clear in my statement here. What I mean was that action should be delayed on expanding the scope and placing the authority for making changes in the hands of the Secretary of Commerce until the information that would be obtained by the authorization in section 10 has been obtained.

Mr. Moss. In the intervening 13 years since the enactment of the first Flammable Fabrics Act have you any idea how many new fabrics and combinations of fabrics have come into being?

Mr. SEGALL. New fabrics? Literally hundreds.

Mr. Moss. Literally hundreds.

Mr. SEGALL. Perhaps thousands.

Mr. Moss. And couldn't we stipulate that some of those have been shown to be highly flammable?

Mr. SEGALL. I am not sure that I could, Mr. Chairman. Perhaps you could.

Mr. Moss. Would you like me to ask the Library of Congress to assemble the necessary data. I could go the range of floor coverings to drapery fabrics to wearing apparel.

Mr. SEGALL. I think it depends on the definition of the term "dangerously flammable."

Mr. Moss. Well, let us say readily combustible at very rapid rate.

Mr. SEGALL. There are many, many, many fabrics that are capable of passing the current standards that are readily combustible.

Mr. Moss. Let me say I agree with you on this matter of current standards. The fact that one fabric might flame up and burn more quickly than another doesn't necessarily indicate that the other which is slower burning, is less dangerous for people to wear. I don't think it would take too long to have the Library make a compilation because I have a fairly good memory and I recall reading so many stories over the years of carpeting materials that in their original introduction would be quite flammable, highly flammable, and other fabrics that have had the same characteristics, imports that have had such strong combustible characteristics they have been pulled off the market.

Do you think this matter can be dealt with any more successfully by Congress in legislating each and every standard than, say, setting of standards for drugs?

Mr. SEGALL. Yes. I am inclined to say yes. I think that the result of the studies that are proposed in section 10 may well clearly define some areas of need which the Congress——

Mr. Moss. Section 10.

Mr. SEGALL. Section 10 of H.R. 5654, which proposes the studies by Health, Education, and Welfare to determine areas of clear and present danger. I think that the result of those studies might well end up defining some few areas which need attention and this attention could be easily given by the Congress to such matters.

Mr. Moss. I want to express to you my appreciation of your great confidence in us. By following us around for a while I think your confidence might be somewhat diminished. We have a very heavy workload and it increases each year, each session, and we are dealing always with urging that we delay making decisions. Rarely do we make them. We postpone them and create a backlog.

Do you have any questions?

Mr. DIXON. No, Mr. Chairman.

Mr. Moss. I do want to thank you for your appearance and I will assure you that we will give careful consideration to your comments.

Mr. SEGALL. May I make one comment in answer to a question that was asked this morning?

Mr. Moss. Yes.

Mr. SEGALL. The chairman asked the question of the ATMI representatives as to price relationships between cotton and synthetic fibers. If I am paraphrasing your question correctly, you asked whether or not the treatment that is given to these cotton fibers to make them durable press didn't tend to narrow the price differential between, say, cotton and polyester.

The answer to that is "not particularly" because the cotton polyester blend, which is the big durable press fabric, is also treated with the same chemicals used to treat an all-cotton fabric to impart a durable press treatment and so the treatment has to be done on the blend

fabric also. It is the treated cotton in the blend fabric that produces the durable press characteristics.

Mr. Moss. Then it is my understanding that your answer to my question would be that the cost of building into cotton these characteristics does not add significantly to the cost.

Mr. SEGALL. Relatively not. It doesn't narrow this spread as much as one would think it should.

Mr. Moss. How would it compare with a garment made entirely out of synthetics, of a high quality synthetic? I am trying to think of the name of one.

Mr. SEGALL. There we start out with a large price differential and that would not be treated of course, but, on the other hand, it would also not be truly durable press.

Mr. Moss. Is that fiction or is that a fact?

Mr. SEGALL. That is fact. It is not as easy to explain as it would seem to be.

Mr. Moss. Advertising would tend to indicate to the contrary. That is why I asked if it was a fact.

Mr. SEGALL. Most of the durable press fabrics that are on the market at the moment are blends of cotton and polyester. It is the treated cotton in that blend that provides the durable press properties. The polyester content is added because this treatment does admittedly weaken the cotton.

It weakens abrasion resistance and the polyester content is to strengthen the fabric, to increase the abrasion resistance.

Mr. Moss. What is the method of treating cotton that produces 100 percent cotton.

Mr. SEGALL. The same thing. It is the same treatment. It is a cross-linking treatment.

Mr. Moss. Is it more costly, or less costly?

Mr. SEGALL. It is very close to the same cost for treatment. It is the same chemical. The "add-on" might be slightly more because you have more cotton to take up the chemical.

Mr. Moss. Does the addition of the chemical have any effect upon the flammability of the product?

Mr. SEGALL. No.

Mr. Moss. Either increasing or diminishing.

Mr. SEGALL. No.

Mr. Moss. Thank you very much. There being no further witnesses the committee will stand adjourned.

(Whereupon, at 3:32 p.m., the subcommittee was adjourned.)

FLAMMABLE FABRICS ACT AND PRODUCT SAFETY COMMISSION

THURSDAY, APRIL 27, 1967

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to notice, in room 2123, Rayburn House Office Building, Hon. John E. Moss (chairman of the subcommittee) presiding.

Mr. Moss. The subcommittee will be in order.

Our first witness this morning appearing in response to the request by the committee is Mr. Mason DuPré, assistant to the Deputy Administrator for Nutrition, Consumer and Industrial Uses, Agricultural Research Services, U.S. Department of Agriculture.

Mr. DuPré.

STATEMENT OF A. MASON DuPRÉ, JR., ASSISTANT TO DEPUTY ADMINISTRATOR FOR NUTRITION, CONSUMER AND INDUSTRIAL USE RESEARCH, AGRICULTURAL RESEARCH SERVICE, DEPARTMENT OF AGRICULTURE

Mr. DUPRÉ. Mr. Chairman, members of the committee, I appreciate the opportunity to appear before your subcommittee to present the Department's views on bills designed to increase the protection afforded consumers against injurious flammable fabrics.

The principal purpose of these bills is to extend the scope of the present Flammable Fabrics Act to include not only articles of wearing apparel but also articles used for interior furnishings, such as drapes, rugs, and upholstery fabric, and to establish standards of flammability that will adequately protect the public against unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage.

The Flammable Fabrics Act has done much to prevent the marketing of extremely flammable clothing and has thus contributed to people's safety. We believe these provisions will strengthen the present act and make it more valuable to the general public.

The Department recommends passage of H.R. 5654, H.R. 5780, H.R. 5938, H.R. 6025, H.R. 6114, H.R. 6421, and H.R. 7920. However, although the Department favors the objectives of H.R. 5474, which includes provisions applicable to bedding, we recommend enactment of the above listed bills instead.

The purpose of the Flammable Fabrics Act was to bar from commerce, as defined in the act, any article of wearing apparel or any fabric intended for wearing apparel which under the commercial standards referred to in section 4 of the act is so highly flammable as to be dangerous when worn by individuals. Section 4 of the act specifies exact test methods to be used for determining the degree of flammability of fabrics used for apparel only.

It is highly doubtful if the prescribed commercial standards for apparel fabrics would be suitable for determining the flammability hazards of blankets and other bedding fabrics because the conditions under which these fabrics are used are quite different from those for apparel fabrics. H.R. 5654 and its identical bills authorize the Secretary of Commerce to establish standard test methods for determining the flammability hazards of bedding.

The Department favors the objectives of House Joint Resolution 280, 340, and 357, and believes a study as proposed in these resolutions would be helpful in protecting the public.

These comments have been formally reported to the chairman, House Committee on Interstate and Foreign Commerce by the Department in the past month.

Mr. Chairman, I shall be happy to respond to any questions you or the members of the subcommittee may have.

Mr. Moss. Thank you, Mr. DuPré.

Mr. Keith, do you have some questions?

Mr. KEITH. Thank you, Mr. Chairman.

Do you know of any way of determining the cost and the effectiveness of making less flammable such material as goes into shirts, topcoats, clothes generally?

Mr. DUPRÉ. Yes, sir. More specifically with reference to flame-retardant treatment for cotton and other cellulosic fibers.

We have a research laboratory in New Orleans that has done extensive work in this area. We have developed a number of treatments. We have a treatment, a variation of which is now used commercially in this country and on which we do have some cost figures. We have information as to the cost of the chemicals used; we have information on the cost of applying these treatments in the plant and we have some information on the prices at which these flame-retarded fabrics are sold.

We have some information from published material giving the retail prices at which certain items are sold. I would be glad to give you any information we have in those areas.

Mr. KEITH. Mr. Chairman, it would appear to me that we should address a letter to Dr. DuPré asking for information pertinent to these questions and including I would think, a question in reference to an ordinary dress shirt, an ordinary child's dress, an ordinary adult lady's dress made of cotton and also general questions concerning flammable manmade fibers.

Mr. Chairman, I would suggest that we ask the staff to draw up a communication. I would ask further if you know of other authorities in this field that are equally or more competent to speak to this question.

Mr. DUPRÉ. Yes, sir.

May I make one observation, please?

In reference to the items that you mentioned, a dress shirt, ladies' dresses and so forth, those are not on the market now with the flame retardants. The information we have there would be more or less a range of estimates.

We do have specific information on the items that are now being produced in this area; namely, protective work clothing, some institutional uses, some industrial fabrics. These treatments are not now applied to the lighter weight apparel fabrics; the answer there would be an estimated range.

We can give you the basic cost per yard of treating these fabrics in the plant to which would have to be added profits, manufacturing costs, markup in the retail trade, and so forth. We will give you whatever information we have.

Mr. KEITH. In think your answer should be as specific as possible in relating the particular cost of making fabric flame retardant to the total cost of the finished garment.

I have no further questions, Mr. Chairman, except I don't believe you responded to my question concerning the authorities in this field.

Mr. DUPRÉ. You mean you would like for me to respond now, or in connection with the letter?

Mr. KEITH. Now. It might give the committee some leads in consulting and questioning other authorities who may be competent in this area.

Mr. DUPRÉ. This is not the complete list. We would like to add to this in a written communication. These are the people that we know personally in this area. They represent different branches of industry that have a part in the production and selling of flame-resistant fabrics and garments.

One I will mention is Dr. J. W. Weaver, director of research and development, Cone Mills Corp., Greensboro, N.C., a producer and finisher of apparel fabrics.

Now Mr. C. F. Russell, president, Lynrus Finishing Corp., Poughkeepsie, N.Y. They finish large quantities of flame-retardant fabrics.

For a manufacturer of flame-retardant chemicals, Mr. George Cynoweth, manager, industry section, market development, Hooker Chemical Corp., Niagara Falls, N.Y.

As experts in the research and technology of flame-retardant treatments, Mr. W. A. Reeves and Mr. G. L. Drake, of our Southern Utilization and Development Division, U.S. Department of Agriculture, New Orleans, La.

A representative of the retail trade, Mr. Percy J. Fynn, Manager, Merchandising Test Center, J. C. Penney Co., Inc., New York.

There may be others. Those are a few.

Mr. KEITH. One thought that occurs to me is the Oneida Laboratories.

Mr. DUPRÉ. I will give you that.

Mr. Steven J. Kennedy—K-e-n-n-e-d-y.

Mr. KEITH. Coming from Massachusetts, the spelling of the name "Kennedy" is not necessary.

My chairman reminds me that there is really only one from New York now. He used to be my constituent.

I have no further questions, Mr. Chairman.

If you will excuse me, Mr. Chairman, I have to make a phone call in the adjacent chambers. I will be available if you should need me.

Mr. Moss. If I have any irreconcilable difficulty with myself, I will call on you.

Mr. Dupré, I think that the needs of the committee will best be served by preparing a list of questions directing them to you and asking that you prepare responses to them as promptly as possible.

We are at a disadvantage. Mr. Menger is filling in for one of his colleagues who is staff counsel for this committee who was carefully prepared to interrogate you and is ill, so that interrogation will be by correspondence.

We will want to have your best estimates as to the effect of volume on cost as part of that. I would say be prepared for a rather comprehensive questioning.

I want to thank you for appearing and conclude, unless either of the counsel have any questions.

Mr. DuPré. Thank you, Mr. Chairman. We shall be glad to help you in any way we can.

Mr. Moss. Thank you.

(The following correspondence was subsequently submitted to and received from the Department of Agriculture:)

HOUSE OF REPRESENTATIVES,
Washington, D.C., May 3, 1967.

Mr. A. MASON DUPRÉ, JR.,
Assistant to Deputy Administrator, Department of Agriculture, Washington, D.C.

DEAR MR. DUPRÉ: You will recall that at the time that you testified before the Subcommittee on Commerce and Finance it was understood that further questions would be addressed to you by letter. I would like to request that you answer these questions in whatever detail is necessary to constructively add to the subcommittee's hearings on the Flammable Fabrics Act and the establishment of a National Commission on Product Safety. The subjects and questions which I would like to have discussed and answered follow.

Added Costs. Please supply as much information as you can on the cost of treating various fabrics for flame retardancy. Our subcommittee is interested in learning just how much additional cost a fabric manufacturer will have, and also what effect flame retardancy treatments will have on wholesale and retail costs and prices. In addressing yourself to this subject please be as specific as you can and give examples as to particular items in everyday use such as dress shirts, children's clothing, and ladies' dresses. To make this meaningful you will, of course, have to supply estimates relating cost to volumes of production.

Durability and Effectiveness of Flame Retardancy Treatment.

Can you furnish specific information or experience with the durability and effectiveness of various treatments? Are you conducting experiments in this area at this time and, if so, what progress is being made?

Effect of Treatment on Fabrics. Would you describe any side effects which flame retardancy treatment may have on fabrics? Please use precise examples such as the color, type and weight of fabrics.

I want to thank you for appearing before the committee and also for answering the foregoing questions.

Sincerely yours,

JOHN E. MOSS,
Chairman, Subcommittee on Commerce and Finance.

DEPARTMENT OF AGRICULTURE,
AGRICULTURAL RESEARCH SERVICE,
Washington, D.C., May 18, 1967.

Hon. JOHN E. MOSS,
House of Representatives.

DEAR MR. MOSS: We are glad to furnish you information we have available in answer to the questions contained in your letter of May 3 relative to the treatment of cotton and other cellulosic fibers to make them flame resistant.

Flame-retardant treatments now being used in the United States are of three principal types:

(1) Non-durable. The chemicals used are such chemicals as borax, boric acid, diammonium phosphate, and ammonium sulfate. These treatments are suitable for such items as curtains and drapes, and must be reapplied after each laundering.

(2) A durable type known in the trade as FWWMR (flame, water, weather, and mildew resistant). The principal chemicals used are antimony oxide and chlorinated paraffin or vinyl chloride. This is the most widely used type and is especially suitable for tents, tarpaulins, and other heavy cotton fabrics for outdoor use. It is not suitable for clothing uses.

(3) A durable type known popularly as THPC, an abbreviation for tetrakis (hydroxymethyl) phosphonium chloride, the principal chemical used in the treatment. This type is especially suitable for certain classes of apparel and household fabrics, and some types of industrial fabrics. The basic treatment was developed by the Southern Utilization Research and Development Division of the Agricultural Research Service, U.S. Department of Agriculture, New Orleans, Louisiana. Variations of this treatment, all containing THPC, are produced by private companies under their own trade names. Our Southern Division has also developed a number of other effective flame retardant treatments, some of them in cooperation with the Army Quartermaster Corps, and currently has under development a new treatment, related to THPC, that shows considerable promise of extending the classes of apparel and household fabrics that can be satisfactorily treated with a flame retardant.

The following answers to your questions, under the headings listed in your letter, are with respect to the use of THPC. I have tried to give as complete answers as possible without going into excessive detail. If you should wish to have additional information, we shall be glad to furnish it.

Added Costs. Neither the chemical THPC, the treatment of fabrics with THPC, or the manufacture of apparel and household articles is now in what would be considered large-scale production. We do not have any estimates of the amount or percentage by which the prices of currently available flame-retardant articles could be reduced under conditions of large-scale production and distribution, but do have some estimates of the cost per square yard of applying flame-retardant treatments to fabrics on a large scale. Using this cost estimate and multiplying it by the average number of yards of fabric used in making various articles will give an estimate of the added cost of the *fabric* in these articles. To this would have to be added profits at each step and any sales distribution, advertising, or other costs that may be involved.

The cost of treating a fabric varies primarily with the weight and construction of the fabric and the degree of flame retardance desired. The costs and prices we have are for adding a sufficient amount of the treatment to give a fabric that will char when in contact with a flame but will not burn when the flame is removed. Less flame retardancy may be obtained, of course, by adding less of the flame-retardant chemical, but the cost of the fabric will not be reduced by the same percentage because the cost of the chemical is only part of the total treating cost. The chemical cost is, however, the major cost.

Our engineers estimate (including large-volume production of the flame-retardant chemical) that in large-volume production the processing costs in the treating plant would be about 8½ to 9½ cents per square yard for a typical

work clothing fabric weighing 8 ounces per square yard. Thus, for a pair of work trousers containing about 2½ square yards of fabric, the added cost of the fabric would be about 20 to 25 cents. As previously stated, this does not include any estimate for profit or other costs involved.

The treating cost per square yard for lightweight fabrics that go into typical women's and children's dresses and men's and boys' dress shirts would be slightly, but not materially, less than for an 8 ounce per-square-yard work clothing fabric. In terms of square yards, the average amount of fabric going into these articles is about 3 for women's dresses and 1¾ for children's; and about 2¾ for men's dress shirt and about 2 for boys'.

Most of the fabrics being treated today with THPC are for industrial work clothing and for military uses. Information obtained from trade sources indicates that current charges for treating these fabrics range from about 20 to 30 cents per yard and sometimes higher, depending upon volume and the type of fabric. These same sources have estimated that in sufficiently large production most of these charges could fall to about 20 cents per yard and lower.

In regard to a comparison of the prices of articles made from treated and untreated fabrics, the published information is not very extensive. Comparative prices for a few typical cotton articles made from untreated and THPC treated fabrics follow:

Non-flame-resistant coveralls $6.50, flame resistant $9.50; work pants $4.75, and $5.50; shirts $3.50, and $4.50 (Fall, 1966 catalogue of Worklon Inc., Huntington, N.Y.). Non-flame resistant thermal blankets (66" x 90") $6.75, flame resistant $8.30 (American Hospital Supply Association, New Orleans, Louisiana).

Durability and Effectiveness of Flame-retardency Treatment. Our Southern Utilization Research and Development Division in New Orleans has been conducting research on the theory and development of flame-retardant treatments of cotton continuously since the beginning of the Korean conflict in 1951. For many years part of this research was financially supported by and done in cooperation with the U.S. Army Natick Laboratories, Natick, Massachusetts. Adequate durability to laundering and dry cleaning and effectiveness of a treatment in imparting flame resistance are prerequisites. Several flame retardant treatments meeting military requirements in these respects, includnig THPC, have been developed. The THPC treatment is highly durable to laundering and dry cleaning, and imparts excellent flame resistance.

Effects of Treatment on Other Fabric Properties. The principal disadvantages of the present THPC treatment are that it tends to stiffen the fabric somewhat and the treatment yellows slightly following laundering and ironing when a chlorine bleach is used. In general, the lighter the fabric, the higher the percentage of add-on (weight of added chemicals as a percentage of the untreated fabric weight) is required to give the same degree of flame retardancy. Usually the effect on the hand is not objectionable in fabrics weighing 6 ounces or more per square yard or in some fabrics lighter in weight. This depends, of course, on the article in which the fabric is used. The yellowing is noticeable in white goods but is not noticeable in most colored goods. Print cloths and broadcloths, which are major items for use in dresses and shirts, weigh less than 4 ounces per square yard.

As mentioned, our Southern Division has currently under development a new flame-retardant treatment that shows considerable promise of extending the classes of apparel and household fabrics that can be satisfactorily treated with a flame retardant. Specifically, a number of experimentally treated fabrics as light as 2½ to 3 ounces per square yard, including print cloth, have reasonably good flexibility and hand, with other properties about the same as those obtained with the present THPC treatments.

I was glad to appear before the Subcommittee on Commerce and Finance, and hope that the information contained in this further testimony will be found helpful.

Sincerely yours,

MASON DUPRÉ, Jr.,
Assistant to Deputy Administrator.

Mr. Moss. Next, we would like to hear from Mr. E. N. Davis, vice president and chief engineer of the Fire Protection Underwriters Laboratories.

Mr. Davis.

STATEMENT OF E. N. DAVIS, VICE PRESIDENT AND CHIEF ENGINEER, FIRE PROTECTION UNDERWRITERS' LABORATORIES, INC.

Mr. DAVIS. Mr. Chairman, members of the subcommittee, I appreciate this opportunity to comment to you on the several bills pending before you to amend the existing Flammable Fabrics Act.

It appears that one of the important changes being proposed is that whereas the existing law specifies the type of test to be applied and the level of performance required, it is now proposed that authority to prescribe standards of flammability be transferred to the Secretary of Commerce.

While this produces a desirable capability to react to changing circumstances, it practically prevents estimation of the impact of the act upon the economy and upon consumer acceptance.

The required level of fire resistance, the degree of permanence required, and the flexibility or "hand" of the fabric required by the contemplated application, all have an important bearing upon the cost and consumer acceptance of the finished product.

As a basis for explanation of the above, I present the following discussion of the levels of flame resistance now established by recognized existing standards. The test method prescribed under the present Flammability Act uses a very small igniting flame applied for one second, and defines a fabric as acceptable or unacceptable depending upon how quickly the fabric burns. The unacceptable level may be illustrated by the brushed rayon sweaters or children's cowboy chaps which produced several tragic incidents.

The acceptable level may well be characterized by the cotton shirts which most of us wear to work, although a fabric somewhat more flammable than this will past the test. Standard No. 702 of the National Fire Protection Association, prepared by the Committee on Wearing Apparel, employs a slightly more severe test, but the line of acceptability is approximately the same as established by the existing Flammable Fabrics Act.

This method defines three classes in the acceptable range, but the nature of the test is such that a high degree of fire resistance cannot be proven.

Requirements for truly fire-retardant performance appear in NFPA No. 701: Standard Methods of Fire Tests for Flame-Resistant Textiles and Films, prepared by the NFPA Committee on Fire Tests. The chairman of this committee is Mr. J. A. Bono, managing engineer of the Fire Protection Department of Underwriters' Laboratories, Inc.

The standard describes large and small-scale fire tests for determining suitable fire resistance of theater scenery, curtains, furnishings, and other fabrics or films used in places of public assembly, schools, hotels, hospitals and similar occupancies, particularly where the level of fire-resistance is set by law. Fabrics meeting these requirements are sometimes used for specialized industrial clothing, but the treatments employed make the fabrics too stiff and heavy for ordinary clothing. It is at this level that the work of Underwriters' Laboratories, Inc., enters. UL214 Standard for Flame Tests of Flame-Resistant Fabrics sets forth the procedures under which fabrics intended for the uses contemplated by NFPA No. 701 are tested by us and subjected to our periodic factory inspection.

Many local ordinances and orders require that fabrics used in places of public assembly be listed by us as flame retarded, and bear the listing marking on the fabric. Flame retarded fabrics under this classification included impregnated fabrics, plastic-coated fabrics, and synthetic fabrics. Noncombustible fabrics such as glass or asbestos are also listed.

In general, fabrics complying with these specifications are too heavy, too stiff, or have some other characteristics which makes them unsuitable for clothing.

Underwriters' Laboratories has issued an "Outline of Proposed Investigation of Factory-Treated Flame-Resistant Clothing, Bedding, and Drapery Fabrics" under which we would list fabrics for these purposes. At the present time, no fabric has complied with these requirements, and thus we have no listings for clothing or bedding fabrics.

We stand ready to classify fabrics under the test prescribed by the present Flammability Act or the NFPA Standard for Clothing, and to publish the classification for the particular fabric tested, but these tests do not require performance which justifies listing a fabric as having its fire hazard significantly reduced.

It is comparatively easy and inexpensive to treat fabrics so as to impart temporary flame retardancy. Treatments using common chemicals have been known for more than 100 years. The "New England Economical Housekeeper and Family Receipt Book," published in 1845, says:

> If females and children must wear cotton and linen dresses and aprons in the winter, use the following precautions: The dresses, after being washed, should be dipped in strong alum water, which will prevent them from blazing if they should take fire.

This is still a perfectly good method, but the treatment must be renewed each time the garment is washed. Other chemicals in this same category are borax and boric acid. More recently mono- and di-ammonium phosphate have been used.

Until very recently, no treatment existed which would retain true fire-retardant properties after the fabric treated had been laundered or drycleaned repeatedly, except those treatments which rendered fabrics unsuitable for ordinary clothing. Quite recently treatments which appear promising have been developed.

One of these came from the Southern Regional Research Laboratory of the U.S. Department of Agriculture. At present the chemicals used in these treatments are expensive, and are not produced in sufficient quantity to treat a major fraction of the cotton and other cellulosis fabrics used in clothing. It can be hoped that as demand for volume production increases, the cost of the chemicals will decrease.

From this discussion it can be seen that laws calling for increased flame retardant treatment must be applied with caution. A sudden requirement for flame-retardant treatment of all clothing fabrics would produce an economic crisis, since cost of clothing would be markedly increased and there would not be enough chemical material to treat anyway near the total production of cotton and other cellulosic fabrics. For some of the popular synthetic fabrics, no suitable treatment has appeared, so they would be barred from the market.

On the other hand, if requirements for drapery fabrics were to be established, and these were kept at a low level of fire retardance in order to permit fabrics acceptable in the home, the effect might well be to undermine the local ordinances which require a high degree of fire resistance for draperies used in places of public assembly. It seems likely that the listings established by Underwriters' Laboratories, Inc., would become totally ineffective, and the public would have less, instead of better, protection.

All this means that the requirements issued by the Secretary of Commerce must be very carefully reviewed with regard to practicability, and the Congress must have a means for maintaining supervision. Perhaps this can be done through the proposed National Commission on Product Safety, but in such a critical area it appears more suitable to establish a special committee for the purpose.

The Flammability Act should be worded so as to require very close supervision by the Congress to be sure that any proposed action does not damage the public interest, either through relutance to progress or through over enthusiastic adoption of theories which have not been reduced to practice.

Another aspect of the proposed act which may place a heavy burden on industry is the requirement of section 4C, concerning the maintenance of records. Processing of fabric from the weaving to the finished article is highly fragmented, often among several operations, each of which performs one part of the process.

For example, a manufacturer submitting a mattress cover to us stated that they purchase the fabric from a mill, send it to a treater who applies a treatment patented by another company which furnishes the treating chemicals. The treater then returns the fabric to the manufacturer who produces the mattress covers and sells them to distributors. It was difficult for us to determine at what point our factory inspection should occur, and it was finally decided that it would have to be done at two places.

The production of an article of clothing is much more complicated, since it involves weaving, fire-retardant treating, coloring, shrink-proofing, and combination with other fabrics into the finished article which must then be distributed. Tracing articles through the records of all these processes will be a tremendous task, and will require volumes of records kept by thousands of small processors, many of whom do not know the intended use of the fabric they are processing.

It seems more practical to require edge marking of a fabric to be applied at the point of final treatment, with the level of flammability determined by test, preferably by an independent laboratory.

Underwriters' Laboratories, Inc., is keenly aware of the necessity for maintaining a continuing effort against the hazard of flammable fabrics. We strongly support the intention of the Federal Government to assist in this effort.

We believe that laws or regulations issued in furtherance of this intention must be closely supervised to see that they do not inadvertently produce a major impact on the orderly furnishing of goods acceptable to the consuming public, nor upset or impede the progress already accomplished by a great many knowledgeable persons working in various societies, laboratories, industries, and local governments.

Thank you.

Mr. Moss. Mr. Davis, I want to thank you for a fine statement. I believe I asked you to testify.

Mr. DAVIS. Yes, sir.

Mr. Moss. There seemed to be some confusion on the list of witnesses that was supplied me.

I have a few questions.

One, are you familiar with the Administrative Procedure Act?

Mr. DAVIS. I am not really familiar with it. I know of it.

Mr. Moss. It requires that in the proposed promulgation of a rule or a regulation that the rule or regulation be published in the Federal Register and that interested parties be invited to comment. It is the requirement of reasonableness and rules out arbitrary or capricious actions in the promulgation of such rules or regulations as may be sanctioned by law.

There are several intents of the several pieces of legislation concurrently being considered by the committee. One would be to vest in the Secretary authority to promulgate rules and regulations; in other words, to invite industry as technology advances rather than to depend upon the amendment of statute each time by the Congress which is frequently done lately and it is rather difficult in processing.

Another intent is to establish prospectively a study commission to survey samplings and to propose for future action in the Congress standards applicable to other types of household products.

Then there are two or three bills—one to apply only to bedding, making it subject to the Flammable Fabrics Act. I recognize quite clearly the problems discussed by you with regards to recordkeeping requirements, and counsel to the subcommittee has been instructed to redraft another section.

We don't want to impose unreasonable restrictions and there is no doubt that this could become rather onerous as you have so clearly pointed out in your testimony.

Do you feel there would be an advantage gained by the flexibility proposed to permit the immediate utilization of technological breakthrough for protective chemicals rather than waiting for congressional action in each and every instance?

Mr. DAVIS. I certainly recognize that the procedure necessary for congressional action may carry with it almost the necessity of staying several years behind these breakthroughs, and this has been one of the things that I thought about quite a bit in looking at this act.

I notice that the Flammability Act, itself, has safeguards which require that the Secretary of Commerce publish what he intends to do and try to get response from the industry. Apparently that is just about the best that can be done except that suppose this Commission on Products Safety does go through, a subcommittee could be a watchdog to see that the Flammability Act or flammability regulations do watch both these things.

Someone reads an article in Reader's Digest that describes a miracle treatment and the next day think well, that is fine; let's just treat all cotton fabrics that way. As I said, that would produce an economic crisis. Some place there has to be a watching over to see that this does not happen.

Really, my main point here was that we can really not judge what the impact is going to be on industry until we see what the Secretary

of Commerce has in mind. This is a very difficult thing to judge right now.

If the thought is simply to extend the present flammability test to a few more fabrics, I think the impact would be minor.

Mr. Moss. Do you believe that the present flammability test as written into law represents the ultimate in technological testing procedures?

Mr. DAVIS. Not at all. I think one of the things that most fire protection authorities keep trying to stress is that the people who get killed in clothing fires are dressed in ordinary clothing, the clothing which would meet the provisions of the Flammable Fabrics Act.

Mr. Moss. We are proposing here extension of the act to other uses of fabrics in the environment other than just items of clothing. Clothing is covered under the existing Flammable Fabrics Act.

We are talikng now about other items; about the upholstery on your furniture, the drapes on your walls, the carpeting on your floor.

Mr. DAVIS. I think the draperies would be a very good thing to cover. They certainly are responsible for spreading fires in homes quite frequently.

There my apprehension is that we don't undermine the much more stringent requirements which are applied to drapery fabrics in places of public assembly. Most municipalities, in States, and local authorities do have requirements for that and these bother people because they are restrictive, they require a very high degree of flame retardance.

Now, if there should be a Federal law that specified a somewhat lower level, this is the lever to say if this is good enough for the Federal Government, it certainly is good enough for a local government and is liable to be used in the courts that way.

I would hope that the Secretary of Commerce would clearly differentiate between level of flammability where a man is simply protecting himself, one family, against fire as against say, a theater or a night club—the night clubs, of course, are the ones that make the headlines—where a great many people may be endangered by heavy, highly flammable draperies.

Mr. Moss. What would your reaction be to the establishment of an advisory group to the Secretary?

Mr. DAVIS. I think that would be highly desirable to have an advisory group which had a balanced interest of man in the industry who knew what the economic impact was going to be and on the other hand men who were in position to know the latest development and also to continuously study the improvement of the test methods for flame retardants because those are still in need of a great deal of work.

Mr. Moss. You are raising the question of a committee or a subcommittee. The reorganization which defines the jurisdiction, the authorities of Committees of Congress, gave to each committee the responsibility of oversight covering the entire jurisdiction of that committee.

So, if we do maintain oversight jurisdiction and then we have a separate committee in each House of Congress that examines overall the actions of the executive agencies and the dependent agencies

of Government, the responsibility for oversight is still vested in this committee.

Mr. DAVIS. I think that is very good.

Mr. MOSS. It is always receptive to the expressions of complaint because of arrogance on the part of any executive agency or department for any excessive actions.

Mr. Menger has some questions.

Mr. MENGER. Just one question, sir.

On page 5 of your statement, the second full paragraph on the page:

> . . . if requirements for drapery fabrics were to be established, and these were kept at a low level of fire-retardance in order to permit fabrics acceptable in the home, the effect might well be to undermine the local ordinances . . .

This is on the assumption that Federal law would supersede?

Mr. DAVIS. I don't know that they would supersede it but some of these very strict fire ordinances are under fire—I mean authorities are continuously being pressured to lower them because you can use prettier synthetic fabrics if you are not hampered by a requirement for fire retardancy.

I would think that a Federal law that said a lower degree of fire retardants was acceptable would be a powerful lever especially if it came to a hearing in court.

Mr. MENGER. Would I be correct that you would be in favor of an amendment in the bill which said in substance that nothing of this actually supersedes State or local laws or ordinances?

Mr. DAVIS. I think that might be a very good thing to put in the act, though it would not completely prevent the problem described.

We have made progress in this field and progress is being made continuously. I am sure that this committee would not want to find itself pushing that rate of progress down simply to be sure that household fabrics were no affected. I think it would be a very good thing to put a statement in to that effect.

Mr. MENGER. Thank you, sir.

Thank you, Mr. Chairman.

Mr. MOSS. I want to thank you.

Next, we will hear from Mr. Baron Whitaker, president of the Underwriters' Laboratories, Inc., Chicago. He is accompanied by Mr. K. S. Geiges, senior vice president.

STATEMENT OF BARON WHITAKER, PRESIDENT, UNDERWRITERS' LABORATORIES, INC.; ACCOMPANIED BY K. S. GEIGES, SENIOR VICE PRESIDENT

Mr. WHITAKER. Yes.

Mr. Chairman, my name is Baron Whitaker, and I am here with respect to the proposal to establish a National Commission on Product Safety.

I want to identify myself in this area to make sure I am the man you want in this chair at the moment.

Mr. MOSS. You are, indeed.

Mr. WHITAKER. Thank you, sir.

Mr. MOSS. I want to thank you for responding to the request of the committee that you appear.

Mr. WHITAKER. Thank you.

I might add before I commence presentation of my formal statement that there has been some discussion here with respect to origin, accents, and that sort of thing. I would like to put the committee at ease by saying that the accent they are now getting is an improved North Carolina accent that has been modified by residence in Illinois and New York State.

Underwriters' Laboratories, Inc., is a self-supporting not-for-profit corporation whose sole business since 1894 has been the testing of products, materials, and systems to determine that these items meet minimum requirements for safety. In addition, a system of classifications, publications, and markings has been established to inform the public of those products which meet the Laboratories' safety requirements.

The laboratories' services include a factory followup program to determine that the products as manufactured and sold do in fact meet the established requirements.

Manufacturers voluntarily submit their products to Underwriters' Laboratories for investigation. If the Laboratories finds the product meets its safety requirements it publishes the name of the manufacturer of the product designation in one of its lists of products and, under suitable safeguards, authorizes the use of its label or marker on the product as evidence of compliance with its safety requirements.

The laboratories' requirements are developed by its engineering staff in consultation with manufacturers of the products, government officials having legal responsibility for public safety in the product area, insurance representatives, and the public at large.

The laboratories' services provide an impartial check on the manufacturer's product engineering and production control as they relate to safety features. They help the public official discharge his legal responsibilities by helping in the establishment of safety requirements and in identifying those products which meet those requirements.

The public is served by being able to identify and purchase products which meet minimum safety requirements. At the present time, approximately 12,500 manufacturers have an estimated 800,000 different catalog numbers of products, materials, and systems listed as meeting the Laboratories' requirements for safety.

Safety is often thought of as some rather simple set of "go" or "no go" gages by which any product or installation can be readily measured with a readily discernible "safe" or "unsafe" indication. Safety is not quite so simple a phenomenon.

Suppose you went to purchase an electric fan. At the local appliance store you will find quite a variety of types, sizes, and prices. Since you are concerned with safety, you would undoubtedly pay close attention to the guard which surrounds the rotating blades. You will note that fans which are designed for sitting on floors where children might be, will generally be well guarded.

You will also note that these fans do not deliver as much air as desk and table fans which have more open guards, and these in turn deliver less than wall or ceiling mounted fans which have no guards. Each of these types, however, when used for the purpose for which designed affords an adequate degree of safety.

Product safety is not something that can be achieved solely by the product manufacturers. Installers must also contribute by seeing that

the product is installed in accordance with the manufacturer's installation instructions and in accordance with applicable safety codes. Users also must accept some responsibility for use of the product within reasonable limits of its intended use and for maintaining the product so as to assure a normal useful life—not foreshortened in such a manner as to create a hazardous condition.

It is through the acceptance by each of these groups of its full share of responsibility that reasonable safety can be achieved at total minimum cost to the user.

Quite frequently, mechanical safeguards restrict the operational quality of the product. To what extent should the guard on the fan protect small children crawling on the floor? Obviously, the guard should prevent small hands and fingers from touching the whirling blade—but how small—and what about slender pencils and rods that might be poked into the openings?

If the openings are so closed as to absolutely preclude any such possibility of injury, it is likely that there will be such small air delivery as to invite the removal of the guard. Would this be in the best interest of safety?

Or, to take the consideration of safety one step further: Some do-it-yourself persons repair their own electrical appliances, particularly in the matter of replacing the flexible supply cord. Knowing that some people do this, should all products be so designed that this can be readily accomplished without creating any subsequent hazard to the user? How can we be sure that the proper type and size of cord will be used—even if the point of connection is made reasonably foolproof?

Another aspect of safety, particularly for electrical appliances, is the end of life evaluation. The safest form of electrical appliance would be one which failed mechanically before it failed electrically.

Electrical insulation deteriorates with temperature and age; electrical contacts tend to burn off with repeated use. The age of both these items can be considerably prolonged by use of more expensive materials. How does one determine what the customer should get in the way of service life from a TV set, or a can opener, or an oil burner?

Safety and normal life are intertwined in a very complex manner that involves economics, product obsolescene, considerations of the various failure forms.

The preceding comments are made to indicate that there is probably no such thing as absolute product safety. It must be weighed and measured by some rather indirect means that involve use of sound engineering judgments, consideration of field experience, recognition of the current state of the art, and appreciation of the restrictions placed on the utility of the product.

While zero products defects and zero misuse applications are laudable goals, a realistic approach would certainly question whether either could be achieved within our present framework of mass production and mass utilization, and I do not want it to be implied from this statement that I do not think there is some room for improvement; I certainly do.

The degree to which a product must be safeguarded against hazardous conditions will vary with the degree of severity associated with the product failure. For example, a motor that is to be used in the presence of explosive gas or dust will require a whole array of safe-

guards against all kinds of conditions to assure that it does not become a source of ignition for an explosive mixture. A motor that is used in a can opener, on the other hand, will require only that it operate within temperature limits as to assure a reasonable life.

Safety to a degree is dependent upon the state of the art. Some 25 years ago, the most common insulation used on building wire was known as a 49° C. rubber, and the most common flexible cord which utilized this insulation was known as type C lamp cord. By today's standards, neither of these materials would be considered adequate from the standpoint of safety; yet, at one time they were the best that was available. The minimum temperature rated insulations today are 60° C. and some are available at 200° C., and there are now movements underfoot to move the 60° C. up to 75° C.

How does one determine if an adequate level of product safety exists? We think that one method is to evaluate the number of accidents resulting from use of the product in light of the exposure which the public has to that product.

For several years now, the Bureau of Vital Statistics in Washington has kept records of the number of fatalities resulting from use of electricity, and from the period 1949 to 1964 the death rate has fallen from seven per 1 million persons per year to five. During this same period, the annual use of electrical energy has increased by 650 percent.

If these same figures are further analyzed, a reasonable estimate of 60 to 80 deaths per year can be attributed to household electric appliances.

I want to point out in that analysis there is no differentiation between those deaths which came from product failure and those which came from misuse of the product.

This figure of 60 to 80 deaths per year must be viewed against the millions of such appliances in use in this country each day—and against the full realization that enough electrical energy is present each time the appliance is energized to create a lethal condition.

In a newspaper clipping service of electrical accidents to which Underwriters' Laboratories has subscribed for the past 30 months, 39 cases of electrocution from appliances are reported. A breakdown of these cases reveals that 13 of these cases were the result of the person pulling the appliance into the bathtub, sink, et cetera, with involvement in water.

The appliance industry could readily design an appliance that would present no hazard when pulled into the bathtub, sink, or swimming pool. Such appliances could not, however, be produced within the cost limits of today's models and undoubtedly a number of families would not be able to afford the completely submersible designs.

Before any significant further reduction in accidents from household electrical products can be expected, there must be a breakthrough in materials technology that will provide better performance without any substantial increase in today's prices, or there must be some mechanism established which will provide a factual feedback to the manufacturers as to the cause of failure in those products involved in accidents.

The Committee on Safety of the Institute of Electrical and Electronics Engineers, Inc., tried for many years to create such a mecha-

nism but was invariably stymied because of litigations of the cases in the courts. By the time the sample was made available for study by the manufacturer, the model was no longer in production.

If there is to be a significant decrease in accidents resulting from misuse of products, users must have a better appreciation of the potential hazards resulting from misuse.

This introduces another philosophic discussion as to whether a customer will be more likely to read a short and conscise set of instructions on the product, or whether he will read three or four pages of fine print to learn all the restrictions placed on the use of the product.

The backbone of the electrical safety structure in the United States today is the national electrical code. This code, which is sponsored by the National Fire Protection Association and approved as a United States of America standard, is probably one of the most widely adopted safety standards in use today.

It is formulated under procedures that assure balanced representation of all segments of the industry. It serves as the major electrical installation code for almost all the homes and buildings in this country. Some extent of the use of the code can be gained by knowing that to date over 500,000 copies of the 1965 code, which was published just 18 months ago, have been distributed.

The code is revised every 3 years so that it reflects advances in the art just as soon as these have been shown to be commensurate with the general level of safety provided. The enforcement of the code is left with local and state jurisdictions for adoption and subsequent enforcement.

It is in the discharge of the inspector's duties as guardian of the public safety that he frequently turns to the listings of Underwriters' Laboratories for help in judging the suitability of electrical materials, devices, and systems. The ordinances under which these inspectors work quite frequently refer to safety standards of several nationally recognized testing laboratories or other standards-writing agencies.

This arrangement of a national electrical code, a system of State and local adoption and enforcement backed up by a group of nationally recognized testing laboratories in evaluating the safety aspects of electrical materials, devices, and systems, has resulted in a highly coordinated industry that has thereby been able to pass the benefits of mass production on to the public, while at the same time the public has received a high degree of protection against hazardous electrical products.

There have been numerous references in the past to a wide variety of electrical products having dangerous leakage currents. The subject is a most controversial one—for the current that is actually measured in the product will depend upon the environmental conditions to which the sample is subjected as well as the type of instrumentation used.

Despite these wide differences, Underwriters' Laboratories is unaware of a single injury or a single death caused by currents of the magnitude which have been cited as so great as to be considered dangerous. Lacking such evidence, we feel that a completely erroneous picture has been painted as to the extent of actual hazard that exists from this cause.

If the Congress sees fit to create a National Commission on Product Safety, we would hope that those chosen to serve would include rep-

resentation from authorities having public safety responsibilities, electrical shock experts, electrical fire experts, casualty experts and, of course, representatives of the electrical manufacturers.

Underwriters' Laboratories would be pleased to offer assistance to the Commission within our area of capability.

Mr. Chairman, that completes the prepared statement.

I would be pleased to answer any questions.

Mr. Moss. Mr. Keith, do you have any questions at this time?

Mr. KEITH. Thank you, Mr. Chairman.

Mr. Whitaker, you state here that ". . . Underwriters' Laboratories is unaware of a single injury or a single death caused by currents of the magnitude which have been cited as so great as to be considered dangerous. Lacking such evidence . . .", and so forth.

Have you been present during the hearings on the relation between textile products and fabrics?

Mr. WHITAKER. No, sir; I have not.

Mr. KEITH. Do Underwriters' Laboratories conduct any experiments or have any knowledge as to the relation between textile products and fabrics?

Mr. WHITAKER. Yes, sir.

Mr. KEITH. Do you know of the extent of injuries or deaths caused by flammable——

I want this on the record.

Mr. Moss. Mr. Keith has just received an important long-distance call and I am going to attempt to fill in for him on the questions he would direct to you.

Do you have any knowledge of the statistics relating to deaths caused by the flammable nature of cotton clothing or of synthetic clothing?

Mr. WHITAKER. Mr. Chairman, I didn't come prepared to talk on the Flammable Fabrics Act. Mr. Davis can, I believe, answer this question, if I might pass it on to him.

Mr. Moss. Mr. Davis, do you have any statistical information which you might be able to recite for the record at this time?

Mr. DAVIS. Most of our information does come through the NFPA records, and Mr. Babcock is going to speak to that subject.

There are some conflicting stories on this. I think that the number centers around 2,000 deaths and the estimates of injuries varies depending on what you call an injury. The estimates run as high as 150,000 injuries a year.

The number is confused because of—well, for one thing, when there is a fire, you are not really sure when you find the people just what it was that killed them.

I think that clothing fires account for that 2,000 figure; and there are a lot of bedding fires. Here, although there has been so much talk about blankets and this sort of thing, the killer is the mattress. They are the things that kill people off and the number of deaths for which they are responsible is almost incalculable because of a mattress fire's nature of spreading deaths; for instance, in a hotel fire toxic combustion products spread through the hotel, and multiple deaths occur from one mattress, one mattress in one room killing many people.

I think Mr. Babcock can probably speak much more authoritatively on the subject than I can. He will probably be happy to speak to that.

Mr. Moss. Thank you, Mr. Davis.

Mr. Blanton.

Mr. BLANTON. Thank you, Mr. Chairman.

Mr. Davis, you said that the mattress is the killer. Well, is it more susceptible to flammability than the other parts of the bedding or do you talk about after the fire started?

Mr. DAVIS. What I am saying now is for one thing what we see in actual fires and then also what we have seen in our experimental fires in the laboratory.

When a mattress or upholstery catches fire, it is quite often a very low smoldering fire; it is almost impossible to extinguish. If a mattress catches fire, the only thing you can do is carry it outdoors. It produces usually rather low heat so that any automatic fire detection systems that are not smoke detectors quite often don't detect the fire but the fire will fill a room or much more than a room with lethal gases, such as carbon monoxide, so that people die not only in the bed without ever realizing that they have got a fire at all but people die elsewhere.

The old cotton padding that is still being used very largely was very bad in that respect and, of course, now foam rubber mattrasses have come in and those produce a very hot intense flame and a lot of toxic gas. They are relatively easy to ignite.

We had a test of a mattress cover which was treated with a new treatment. The cover, itself, was excellent. The flammability test that we are prescribing in the Flammable Fabric Act would not touch it; it just blackened a bit and that is all.

But if you put that mattress cover on a mattress and laid a cigar butt on the mattress, the mattress would catch fire.

Actually, we were unable to list the mattress cover because of the fact that it could not protect the mattress.

Mr. BLANTON. I have no more questions.

Mr. Moss. Again, I want to thank you, Mr. Davis, and Mr. Whitaker. I want to express my appreciation for your appearance here. I thought it most important that before concluding these hearings we have your views, the views of the organization you represent.

I know that I have long been committed to a policy that is certainly buying nothing in the way of an electrical appliance unless it had an Underwriters' Laboratories label on it. The organization is held in high regard. There is no question about it in discussing matters relating to safety in the overall consumer products.

I think your views contribute significantly to the hearing record of this committee.

Thank you very much for your testimony.

Mr. WHITAKER. Thank you very much, Mr. Chairman, for those kind words.

Again, any service the underwriters' organization can be to this committee or the commission when it is established we will be most happy to provide.

Mr. Moss. Thank you. We may well call upon you.

At this time, we are pleased to hear from Mr. Chester I. Babcock, technical secretary of the National Fire Protection Association.

Mr. Babcock.

STATEMENT OF CHESTER I. BABCOCK, TECHNICAL SECRETARY, NATIONAL FIRE PROTECTION ASSOCIATION

Mr. BABCOCK. Mr. Chairman, members of the committee, the National Fire Protection Association which employs me as technical secretary, is deeply concerned about the problems of casualties and property damage from fire, and we have noted with appreciation the current interest of the Congress in these problems.

The National Fire Protection Association's interest in fire waste stems from the fact that it was organized more than 70 years ago for the sole purpose of reducing loss of life and property damage from fire.

The association is a nonprofit technical and educational organization which numbers among its members 215 national and regional associations representing many segments of business and industry, government at Federal and State levels, professional groups and public service organizations and, in addition, more than 20,000 companies and individuals from every facet of society including local public fire safety officials.

The influence of the association is worldwide and its membership is spread through more than 70 countries. However, its activities are, and always have been, directed primarily to the United States of America and, to a lesser extent, to Canada.

I believe it is correct to say that no one is more aware than the National Fire Protection Association of the extent of the influence of combustible wearing apparel and furnishings on the Nation's fire record.

Our fire record department is continuously obtaining and analyzing reports of fires in which these products are involved, and has recently estibated that at least 2,000 people die annually from burns inflicted when their clothing ignited; another 150,000 people suffer nonfatal burns from this cause.

Fires originating in bedding, according to our fire record department, killed an estimated 1,700 people last year and fire starting in upholstered furniture killed 1,400.

WEARING APPAREL

The association's technical committee on wearing apparel, under the chairmanship of a deputy State fire marshal of California, has for years been deeply involved in the wearing apparel burn problem. The committee has developed a method of evaluating the flammability of wearing apparel and has conducted a thorough study of wearing apparel involved in typical actual burn cases.

Studies by the NFPA committee have left no doubt that all clothing can burn and that virtually none of the clothing that has been involved in actual burn cases, since the Federal Flammable Fabrics Act was passed, can be classified by any reasonable evaluation as having "rapid and intense burning" properties; that is, clothing that is now kept from interstate commerce by the act.

In other words, they can be properly classified as having "normal flammability" as defined by the act.

Realizing that one solution to the clothing burn problem might be use of fabrics that are flame resistant, either inherently or by chemical treatment, the committee investigated the availability of such products.

Certain fabrics do have a high degree of flame resistance, such as wool and two or three synthetic, and a permanent flame resistant treatment for cellulosic fibers is commercially available, but there are convincing reasons why clothing articles made of fibers that are inherently flame resistant or have been treated to make them so are not now a suitable substitute for the products available today.

The day will come, we think, when research will provide flame-resistant fabrics for clothing with no adverse effects on absorbency, comfort, seam strength, and so forth. But until that day comes, the National Fire Protection Association believes that the only practical method of getting a noticeable reduction in the number of wearing apparel casualties is to educate the public to the fact that all clothing can burn and that the prevention of such fires depends primarily on the degree of care the wearer exercises.

To this end, the association, with the help of the committee on wearing apparel, has published folders and films for popular use, has published technical papers, and has held conferences to discuss specifically the wearing apparel burn problem.

Although flame-resistant clothing is not now generally available, primarily because of technical difficulties and also because there is very little public demand for it, the association sees flame-resistant clothing as the ultimate solution and has recently cosponsored, with the U.S. Public Health Service and the New York Academy of Medicine, a conference on burns and flame-retardant fabrics.

DRAPERIES AND INTERIOR FURNISHINGS

Combustibility of furnishings has also been given serious consideration by the National Fire Protection Association. Our committee on safety to life, which is responsible for the widely respected and used life safety code, has placed restrictions throughout that code on the flammability of draperies and other furnishings where the flammability of furnishings might endanger the lives of building occupants.

These requirements are based on actual fire experience that shows that some interior furnishings, particularly draperies and decorations, can spread fire so rapidly that people can be trapped. Fortunately, flame-resistant fabrics are available for drapery and decoration use. Also, chemicals can be applied to impart flame resistance to combustible fabrics for draperies and decorations.

BEDDING AND UPHOLSTERY

In the case of bedding and upholstery, fabrics can be used that are inherently flame resistant or that can be treated to make them so, but unless the legislation under consideration envisages enforcement of regulations to require the use of such materials, I doubt that any significant change will be noted in the fire experience. Anything less in our opinion, would have no more effect on the fire experience of the country than has the Federal Flammable Fabrics Act.

To explain this last remark, let met just say that the present Flammable Fabrics Act only eliminates "rapid and intense burning" fabrics from the wearing apparel picture, such as the "torch sweater" type of product. Merely extending the act to cover bedding, as suggested in House bill 5474, would do no more than keep "torch blankets" off the market.

H.R. 5654

House bill 5654 gives the Secretary of Commerce authority to conduct feasibility studies on reducing flammability of products, fabrics and materials. It is there that we believe the solution will ultimately be found. Until such research is completed, our efforts, we believe, to reduce fire casualties and fire losses from fabric fires can be most effectively directed by banning from interstate commerce the "dangerously flammable" fabrics, such as the Federal Flammable Fabrics Act now does for clothing, and by increasing our efforts to keep before the public eye the fact that their clothing can burn.

Mr. Moss. Mr. Babcock, I want to thank you.

Mr. Blanton.

Mr. Blanton. No questions.

Mr. Moss. Mr. Keith.

Mr. Keith. Thank you, Mr. Chairman.

Mr. Babcock, my apologies for my absence. You heard the questions that I directed to the earlier witness?

Mr. Babcock. Yes; I did, sir.

Mr. Keith. You speak to this point on page 2 of your testimony.

Mr. Babcock. Your one question that I do recall your asking the previous witness had to do with the cost of imparting permanent flame resistance to fabrics and any information I might have on that is second hand. I don't suppose you want secondhand information.

I have not heard anyone mention the National Cotton Council as possibly a good source of information.

Also, as you probably know, in Great Britain there is a requirement that children's nightwear be permanently flame retardant and it occurs to me that some of the manufacturers of British clothing might be a good source of such information.

I don't recall your other question. Perhaps you should repeat it.

Mr. Keith. Well, it is something to which you have responded in part with reference to your recommendations about the necessity for the legislation, not the Commission.

Mr. Babcock. Not the Commission. I am not speaking of that.

Mr. Keith. In your view are the hazards to be minimized by the legislation before us, sufficient to justify enacting the legislation in its present form?

Mr. Babcock. Well, there are two bills of which I am familiar. One (H.R. 5474) would extend the Flammable Fabrics Act to cover bedding. In that case, as I think I pointed out, merely to extend the bill in that way will not in my opinion cause any significant reduction in the number of deaths or injuries from bedding fires.

The bill will, I think, do as the present act now does for wearing apparel, keep dangerously flammable bedding from the market, assuming there is such a product. We have not been aware of dangerously flammable bedding. There may be such products but we have not heard of fires caused by them.

As far as the other bill, H.R. 5654, is concerned, the principal benefit we see is not an immediate one but a long-range benefit; namely, the benefit from research the bill authorizes. That research hopefully will provide permanent flame-resistant-type treatments for cotton that will not weaken other desirable properties of the fabric.

Mr. KEITH. In the 2,000 deaths that you referred to in your statement, is there any pattern with reference either to climate or geography or, more importantly, type of material?

Mr. BABCOCK. Unfortunately, there does not seem to be any particular pattern. We have found that just about anything that a person can put on can burn and will burn and inflict injuries to him. It is amazing some of the things that show up.

Corduroy trousers you might think would be relatively resistant but people can be seriously burned with corduroy trousers.

We do find that among children, little girls' clothing is more susceptible to burning than boys'. We think this is because it is often lighter weight and the dresses flair out and are more readily ignitable and they provide air space beneath as well as on the surface.

Mr. KEITH. With reference to work clothes, is there any indication that there is a greater fire hazard when clothes have absorbed oil or other lubricants?

Mr. BABCOCK. Yes; I think this shows up as a factor in the severity of the burns. The materials that have been added increase the combustibility of the fabric.

Mr. KEITH. You mentioned the girls' clothing, and you say that another category might be work clothes for gas stations and so on.

Mr. BABCOCK. No. If I were to mention the second category, I would indicate clothing worn by elderly people.

Mr. KEITH. They are slow to react.

Mr. BABCOCK. Not so much the clothing, but to the slow reactions of the people wearing them.

Mr. KEITH. I have no further questions, Mr. Chairman.

Mr. MOSS. I have just a few questions.

I note on page 3 of your statement, in paragraph 2, this statement. In dealing with the questions of flame-resistant clothing you state that it is not now generally available and then you list among the primary reasons for the nonavailability, "little public demand for it."

How would one determine whether or not there is little demand?

Mr. BABCOCK. That statement is based on comments I have heard from members of retail trade associations who say that the public rarely, if ever, asks for a product that has superior flame resistance.

I believe in the past there have been one or two large department stores, notably Macy's, who have attempted to sell a particular garment and advertised its flame-resistance properties but there has been an additional cost for this garment, and the public is not interested sufficiently to pay the additional cost. That is my only basis for that statement.

Mr. MOSS. But, beyond the hearsay, you have made no sampling?

Mr. BABCOCK. We have made no sampling.

Mr. MOSS. I am not certain that the Macy experience would be indicative of the total reaction; it might be the store location, the class of clientele.

A department store which has offered many things would not automatically completely negate the validity of the results of such a test. The styling of the garment, variety of patterns; many factors could render one less desirable than the other.

Until the market is probed in reasonable depth, you cannot say that there is a lack of public demand, is there?

Mr. BABCOCK. You are undoubtedly correct but I might just add that since the advent of paper clothing the public has suddenly become concerned about flammability because to them paper clothing means flammable clothing. They are concerned about the flammability of paper clothing but they are apparently not concerned with the flammability of ordinary clothing. If they were, they would express, I would think, a similar concern but they do not seem to.

Mr. Moss. It might be they are laboring under the illusion that the Flammable Fabrics Act protects them from any hazard of flammability of the clothing they buy?

Mr. BABCOCK. Assuming they know that such an act exists, I doubt that this is well known. I do not think so; no.

Mr. Moss. Again we have no sampling and therefore all of these must be arbitrary assumptions.

Mr. BABCOCK. Yes.

Mr. Moss. There are no paper burnings.

Mr. BABCOCK. Yes.

Mr. Moss. So they are concerned about paper?

Mr. BABCOCK. Yes.

Mr. Moss. What kind of treatment is being given to the paper clothing? Is it flame retardant? Is it treated sufficiently?

Mr. BABCOCK. Yes. It certainly is being treated sufficiently so that it passes the act. Again, this is hearsay; I have heard from the California Fire Marshal's Office that in many cases it has superior flame resistance to the ordinary clothing that you and I wear.

Mr. Moss. You would probably have to have that assurance to satisfy the demands of many buyers.

Mr. BABCOCK. I think so.

Mr. Moss. I have no further questions.

I want to express my appreciation and the appreciation of the committee for your ready response to our request to supply us with this testimony.

Mr. BABCOCK. Thank you. It has been my pleasure.

Mr. Moss. The committee will stand adjourned.

(Whereupon, at 11:38 a.m., the subcommittee adjourned.)

FLAMMABLE FABRICS ACT AND PRODUCT SAFETY COMMISSION

MONDAY, JULY 31, 1967

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMERCE AND FINANCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to notice, in room 2123, Rayburn House Office Building, Hon. John E. Moss (chairman of the subcommittee) presiding.

Mr. Moss. The subcommittee will come to order.

Today the Subcommittee on Commerce and Finance resumes its public hearings on House Joint Resolution 280, which would establish a National Commission on Product Safety. From all that I have been able to determine thus far, there is little or no opposition to the creation of this Commission which would have authority to conduct a comprehensive study and investigation of the scope and adequacy of measures now employed to protect consumers from unreasonable risk of injuries which may be caused by hazardous household products. After a complete review of the scope, adequacy, and uniformity of existing legislation and regulation, the Commission would then make recommendations for any necessary remedial action to the President and to the Congress.

After our earlier sessions this past April, it was felt that it would be well for us to hear additional witnesses on the merits of the proposed Commission and to gain from the witnesses who deal with product safety on a daily basis a better definition and understanding of the size of the problem and the types of consumer products which may require particular attention. Because of the press of other committee business, we have not been able to schedule these further hearings for some 3 months. In this interim, a great deal of attention has been directed to one particular problem. That is, the defective tube which had been placed into service in a number of color television sets of recent manufacture and which, unfortunately, emits excessive X-radiation.

Of course, all of us are interested in having the maximum attainable safety in our television sets just as we are in our toasters, electric fans, lawnmowers, power tools, and all of the other many potentially hazardous items which may be found in the home.

This subcommittee will consider the television X-radiation problem as an example of a safety hazard and within the purview of the proposed National Commission on Product Safety. We will not go into the health aspects of this subject nor attempt to establish standards for the measurement of that degree of radiation which might be tolerable from a health standpoint.

That is a matter which I understand is before our colleague, Mr. Jarman, chairman of the Subcommittee on Public Health and Welfare, and I believe that he will start hearings on a bill which he introduced (H.R. 10790) to assure health control of radiation hazards arising from electronic devices.

I am very pleased to acknowledge the presence here this morning of Congressman Jarman, who is auditing these hearings, and I want to assure that, contrary to the statements appearing in a number of trade publications, there is no feud, open, latent, or otherwise, between the Subcommittee on Commerce and Finance and the Subcommittee on Public Health and Welfare. On the contrary, there has been the closest of liaison and cooperation.

Our first witness this morning is the Honorable Joel Broyhill, our colleague from Virginia. You may proceed Mr. Broyhill.

STATEMENT OF HON. JOEL T. BROYHILL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA

Mr. BROYHILL. Mr. Chairman, I would like to indicate my wholehearted support of House Joint Resolution 280 to establish a National Commission on Product Safety. In my search for ways to improve safety protection for children, especially in the hazard areas of entrapment and suffocation in idle refrigerators and freezers, and suffocation in large plastic bags, I have been impressed with the ineffectiveness of the present Federal safety system. The fragmented divisions of authority and responsibility within the several Government departments at times stymied programs for public safety improvement. The most significant voids seem to lie in research and development of novel safety techniques and methods, effective coordination with the industries and safety organizations, clearinghouse for safety data and information, and more centralized safety management. Correction would be assured through enactment of House Joint Resolution 280 to create a National Commission on Product Safety.

Thank you, Mr. Chairman.

Mr. MOSS. Thank you, Mr. Broyhill. We appreciate your concise statement. If there are no questions, we shall hear next from another colleague, Mr. Hammerschmidt, of Arkansas.

STATEMENT OF HON. JOHN PAUL HAMMERSCHMIDT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARKANSAS

Mr. HAMMERSCHMIDT. Mr. Chairman, I oppose the provision of Senate Joint Resolution 33, as it has passed the Senate, to include air and spring guns as subject of study by the proposed Commission.

In my judgment, "BB guns" are readily recognized as possessing elements of danger. They hardly constitute a logical subject for this Commission's investigation.

This industry has done exceptionally well in apprising BB gun users of the dangers inherent in these devices. Each year, more than a million young Americans go through instruction courses sponsored by such clubs as the Jaycees, 4–H clubs, and boys clubs, learning how to use BB guns safely and wisely. The education in this field has been outstanding.

Beebee guns are sold in all States, with some local and regional regulations in some States. This local regulation on sale and use of BB guns has evolved through cooperation of the industry and community and business leaders, in conjunction with recommendations of local and State government officials.

Mr. Chairman, it is my hope that BB guns will be excluded from products which come under the investigative jurisdiction of the National Commission on Product Safety. I thank you for your time and consideration.

Mr. Moss. Thank you, Mr. Hammerschmidt, for your views.

Our next witnesses this morning come from the Public Health Service, and includes the Assistant Surgeon General, Vernon MacKenzie; Mr. James Terrill, and Mr. Donald Nelson. You may proceed gentlemen.

Mr. MacKenzie. Mr. Chairman and members of the subcommittee, we appreciate the invitation to the Department of Health, Education, and Welfare to participate in your hearings this morning. I am Vernon MacKenzie, Deputy Director, Bureau of Disease Prevention and Environmental Control of the Public Health Service.

I have with me on my left Mr. James G. Terrill, Director of the National Center for Radiological Health, and to his left Mr. Donald J. Nelson, Assistant Director of that Center for laboratories.

Mr. Terrill has a prepared statement to give to the committee this morning and all of us who are here present will be glad to answer or participate in answering questions after Mr. Terrill has given you his statement.

Mr. Moss. We are very pleased to receive the statement.

STATEMENTS OF ASSISTANT SURGEON GENERAL VERNON G. MacKENZIE, DEPUTY DIRECTOR, BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL; JAMES G. TERRILL, JR., DIRECTOR, NATIONAL CENTER FOR RADIOLOGICAL HEALTH; AND DONALD J. NELSON, ASSISTANT DIRECTOR, NATIONAL CENTER FOR RADIOLOGICAL HEALTH, PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Mr. Terrill. Thank you, sir. Mr. Chairman and members of the subcommittee, I am pleased to have this opportunity to testify in support of House Joint Resolution 280, introduced by Mr. Moss, to establish a National Commission on Product Safety. This resolution has the strong support of the Department of Health, Education, and Welfare as noted in the testimony of Assistant Secretary Lee on April 5, 1967.

The problem on which we will testify today, radiation hazard associated with particular models of GE color television sets, illustrates the broader problem noted by the President in his message to the Congress recommending measures for consumer protection. The President pointed out: "The march of technology that has brought unparalleled abundance and opportunity to the consumer has also exposed him to new complexities and hazards."

Today, I want to describe briefly the role and responsibilities of the National Center for Radiological Health, Bureau of Disease Prevention and Environmental Control, Public Health Service; and the ac-

tions which we have taken related to the potential radiation hazard associated with GE color television sets.

Our primary activities fall into these categories:

1. Investigations, surveillance, and studies of radioactive contamination and other radiation hazards in the environment.
2. Research and development in radiobiological effects and radiation exposure reduction and control methods.
3. Dissemination of information concerning such problems.
4. Technical assistance to State and local governments and other organizations.
5. Conduct and support of training of specialists in the radiological health field.

The Center has no authority to establish regulatory standards. It can, however, provide recommended standards which States and other public and private organizations may utilize. We may also assist other organizations through research in the development of their standards.

The possibility of excess radiation being generated by television sets has been known for a number of years. Recognizing the need for radiation standards for television receivers, the National Council on Radiation Protection and Measurements (NCRP) in 1960 recommended that the X-ray exposure dose rate at any readily accessible point 5 centimeters from the surface of any home television receiver shall not exceed 0.5 milliroentgen per hour under normal operating conditions.

The NCRP cited laboratory and field measurements which indicated that this maximum permissible exposure level would result in the gonad doze at the usual viewing distance being considerably less than 5 percent of that due to the average natural background radiation. On July 29, 1965, the NCRP reaffirmed the 1960 recommendation.

In August of 1966, Dr. John Nash Ott, chairman and executive director of the Environmental Health and Light Research Institute of Sarasota, Fla., called attention to data indicating a possibility that television sets could harm animals.

As part of its effort to look into this question more thoroughly, the Center began to develop measurement techniques to evaluate radiation exposure levels from TV receivers. In connection with this development of measurement techniques, a limited number of color sets were tested and met the existing standards.

In addition, independent review of slides and photographs of histological specimens provided the Center by Dr. Ott, conducted by staff members of the National Institute of Neurological Disease and Blindness, failed to confirm brain damage in the rats as reported by Dr. Ott.

Also, over a period of months, representatives of the Center met with the Federal Communications Commission, the National Bureau of Standards, the National Institutes of Health, the Electronic Industries Association (EIA), the National Association of Broadcasters, the separate military services, and various universities, in an attempt to document information on the emission of potentially harmful radiation from television sets and other electronic devices.

None of these public and private individuals and organizations contacted by the Center had evidence that the excessive emission later reported by General Electric were present from TV receivers.

Among the many groups and individuals from whom we inquired, we looked to the Electronic Industries Association as an important

potential source of industrywide data because we believed that it has access to test data from television manufacturers.

Dr. John Sheldon, chairman of the Ad Hoc Committee on X-radiation of EIA, advised us that no excessive radiation was being emitted from color sets.

Not being satisfied with the general information supplied us by the EIA, I wrote them on March 6, 1967 to confirm our request for basic test data concerning the character and levels of the emission of radiation from color television sets.

On June 29, 1967, the EIA responded to our request of March 6. Their report summarized data on submittals from 20 manufacturers representing over 95 percent of industry sales and showed that under normal operating conditions all sets tested fell within the recommended standard.

The report, however, made clear that these data did not cover the General Electric sets on which data had previously been provided to the Public Health Service.

Independent of the above-described effort to identify a radiation hazard in television receivers, the New York Department of Labor was told by the General Electric Co. in December of 1966 that they found excessive radiation fields from new production line color TV sets.

The Center first became aware of a potential radiation problem during the manufacture of GE color sets in January through a request from the New York State Department of Labor for technical assistance in the measurement of the radiation. It was reported to the Center staff by a GE representative that the company would design an internal shield to reduce radiation from the set to recommended levels.

It was not until April 10 of this year that I was informed that General Electric had sold sets emitting excessive amounts of X-radiation from shunt regulator tubes.

On that date, a radiation expert employed by GE came to my office and told me about this problem. I requested information about the number of sets, the intensity and quality of the radiation—meaning whether it was so-called hard or soft radiation—and what was being done to correct the sets. He agreed to supply the information as quickly as possible.

Early in May, GE reported that it had collected the information. On May 11, we met with GE in New York City and were verbally informed of the number of sets manufactured and distributed and the types and estimated radiation leakage of the shunt regulator tubes. We were also informed that GE had initiated a program to make corrections on the sets in the hands of the dealers and customers and to recall from dealers' stocks the types of tubes responsible for the excessive radiation emission. I advised GE to publicly identify the sets involved and announce the correction program.

On May 17, 1967, a meeting was held by center staff with GE, and the New York City Health Department and New York State Health and Labor Departments, to obtain more detailed data concerning the sets and the shunt regulator tubes and to learn GE's specific plans, if any, to make the facts known to the public. The GE representatives advised the group that GE had no plans to make a public announcement at that time.

The additional data they supplied us on radiation, based on their measurements of about 100 shunt regulator tubes and their estimates of radiation emission levels from sets, indicated that many of the defective TV receivers in public use greatly exceeded the NCRP standard.

Following the discussion at the meeting, in a telephone conversation with Mr. R. C. Wilson, of GE, I advised GE that it should issue a public release and that I planned to initiate immediate action to produce a public statement.

Mr. Wilson agreed to send representatives to my office the following day with information I could put into the statement that would identify the sets requiring correction.

The next day, May 18, I was told that the New York Times had questioned GE about the matter and that GE was now releasing a statement. In view of this development, I immediately issued a statement anticipating questions from the press.

After reviewing the center's activities to date and the information received from General Electric, the Surgeon General wrote to the president of General Electric on May 29, 1967, asking for information concerning GE's success in locating and correcting television set components and parts now in the hands of the public, and for specific data on—

(1) The number of General Electric sets manufactured and distributed with defective tubes; (2) the number of General Electric sets corrected and now in public use; (3) the estimated number of sets of other manufacture which have been supplied with defective tubes by the General Electric Company through original purchase or replacement, which may be a source of X-ray leakage; (4) the character and amount of X-radiation emission from sets containing the defective tubes; (5) the effectiveness of the corrective measures including tests of replacement components and shielding; and (6) home viewing habits and factors related to possible exposure of the public.

On June 8, the Center alerted State health officials to the situation and asked that they assist General Electric in locating the defective sets.

During April, May, and June, two of our laboratory groups were working on adaptation and evaluation of instruments and procedures for obtaining measurements of the levels and quality of radiation emission from the shunt regulator tubes and TV receivers. Some radiation measurements were made on shunt regulator tubes purchased on the open market.

In addition, General Electric supplied us with tubes and four television receivers for testing purposes. Our tests of 200 tubes—completed July 20—confirmed that excessive radiation is emitted from most of the tubes and at levels high enough to pose a potential threat to health. Moreover, our tests demonstrated that the radiation is of such quality as to be capable of penetrating tissue to a substantial depth.

These tests were conducted with the tubes in a test stand outside the receiver, the tube socket in the test stand being wired to the appropriate tube socket in the receiver.

Two comparison sets of measurements were made of shunt regulator tubes both in the test stand and in GE receivers. In one comparison, five tubes with known radiation leakages in the higher intensity range were tested in two GE color receivers with wooden cabinets and one receiver with a metal cabinet and a plastic back.

In both the wooden and metal cabinets where part of the radiation beam passed through the ventilation apertures in the bottom of the set,

radiation intensities below the set of that portion of the beam emitted through the apertures were consistent with those measured on the test stand.

There was very little radiation detectable below the metal set where the beam did not strike ventilation apertures. In the wooden cabinets, however, the intensity of the radiation passing directly through the hardboard bottom amounted to about 50 percent of the intensity noted on the test stand.

The second comparison set of measurements involved two tubes in a wooden and two in a metal cabinet set. The results were similar to the other measurements.

The comparison tests validated the conclusion from the test stand data that a potential health hazard exists.

The data accumulated by our tests were sufficiently serious that the Surgeon General issued a public warning on July 21 recommending that owners of uncorrected sets disconnect them and get in touch with a General Electric service agency so that correction could be made. Although the company estimated that more than 90 percent of the sets emitting excessive radiation had been corrected, approximately 9,000 uncorrected sets were expected by General Electric to still be in the hands of the public on July 31, the original target date for completion of the company's correction program.

What I have just given you is a general outline of our activities on the problem of television radiation since August of last year. I would now like to summarize the present status of our efforts on this problem.

We now have developed increased technical resources of the Center to work on the problem of excess radiation from color television receivers. In this effort we have been in frequent contact with the industry and with health agencies across the country hoping to expedite the correction of the GE television sets.

In this connection, we expect to undertake appropriate surveys to evaluate the effectiveness of the General Electric corrective program, and make further efforts to locate those sets that now remain uncorrected.

We have asked representatives of the Japanese television industry to gather information similar to that which was requested from the Electronic Industries Association for this country. We have also recently established within the center a unit with the sole responsibility for electronic products which, because of their voltage characteristics, may generate excess radiation.

We plan to continue our efforts to identify other electronic products which possibly emit radiation in excess of the recommended standard, to study possible biological effects, and to develop standards for guidelines for the use of labor, industry, and Government. We are also gathering data on the levels of exposure in the manufacturing and servicing operations and developing methods of acquainting industry and workmen with steps they can take to reduce these radiation exposures.

Mr. Chairman, I will be pleased to answer any questions you may have, or to supply the information for the record if it is available but not at hand.

Thank you.

Mr. Moss. Thank you. Mr. Keith, do you have questions at this point?

Mr. KEITH. I do have questions and I will have more as the problem is further developed. Under what statute are you operating?

Mr. TERRILL. We operate under the Public Health Service Act and specifically the sections dealing with research, and investigations, and technical assistance to States. I believe they are sections 301 and 314 of the Public Health Service Act. (See item 1, p. 206.)

Mr. KEITH. Will you outline the legal responsibility that you have for action under those sections?

Mr. TERRILL. Under those sections, sir, we have responsibilities relative to investigations, surveillance, and studies, research and development, dissemination of information, technical assistance, and supportive training of various types.

We have no regulatory authority; no, sir.

Mr. KEITH. In your view is the present statute adequate to deal with this particular kind of problem?

Mr. TERRILL. I would like to defer that to Mr. MacKenzie.

Mr. MACKENZIE. We have considered the authority that we have adequate I believe with respect to the conduct of research and the dissemination of information. The Department currently has under review the adequacy and its posture with respect to legislative proposals which would provide regulatory authority for the type of product which is under discussion here this morning.

Departmental policy has not been fully developed on this, but it is expected that this will be done prior to the hearings that are scheduled later this month.

Mr. KEITH. I have no further questions.

Mr. MOSS. Mr. Stuckey.

Mr. STUCKEY. As I understand it, you do not have any authority to regulate any standards; is that correct?

Mr. TERRILL. That is correct; yes, sir.

Mr. STUCKEY. At this present time who does?

Mr. TERRILL. To the best of my knowledge no Federal agency has authority to regulate, but the States possibly could regulate under their general health authority or under in some cases radiation protection regulations that they may have developed that could apply to this type of situation.

We have not studied the State regulations in depth relative to television sets.

Mr. STUCKEY. As far as the Federal Government is concerned other than the Public Health there would be no way that this could be regulated and controlled?

Mr. TERRILL. This is the best information I have.

Mr. STUCKEY. Let me ask this. If there is a creation of a National Commission on Product Safety then this would be set up to regulate and control?

Mr. MOSS. To recommend. It will be set up for the purpose of advising the President and the Congress as to the probable standards or procedures which could be employed to assure safety in consumer products.

Mr. STUCKEY. Is this what you do now?

Mr. TERRILL. We gather information which might be used as a technical basis for recommendations that a commission of this type would develop, but we would probably not actually make recommendations related to the governmental procedures involved.

Mr. MacKenzie. May I comment further on that, sir?

Mr. Stuckey. Yes, sir.

Mr. MacKenzie. I think the intended purposes of the proposed Commission are considerably broader than the scale of products that are being discussed here this morning and would encompass many types of household consumer products in addition to television sets. We believe that such a broad evaluation is highly desirable.

Mr. Stuckey. That is all I have, Mr. Chairman.

Mr. Moss. Mr. Jarman or Mr. Rogers, do either of you gentlemen have any questions?

Mr. Rogers. I don't, Mr. Chairman. Thank you.

Mr. Jarman. No, Mr. Chairman.

Mr. Moss. At the moment you must rely upon the voluntary cooperation of any manufacturer of a product where you have made recommendations as to the standards which protect the public health, is that correct?

Mr. Terrill. We must depend on that or on the States to investigate under standards that we might develop and thereafter see how effective this system is.

Mr. Moss. In the case we are discussing at the moment to what extent have you surveyed other manufacturers to determine whether there is a similar problem in any other color sets?

Mr. Terrill. We are gathering shunt regulator tubes in our laboratories and hope to have some data on that. We have also alerted the States, as I have mentioned, and some of the States have made surveys, and at least one county in Florida, has reported that some of the other manufacturers have produced defective tubes, but I would not consider that our survey up to this time is complete. The reports of some Japanese scientists indicate that General Electric certainly is not the only company that has produced shunt regulator tubes emitting radiation in excess of standards.

Mr. Moss. Is this the only tube in the television circuit that produces X-radiation emissions?

Mr. Terrill. No, sir. The principal attention I think up to this time has been given to the picture tubes and also some attention has been given to the rectifier tubes. Any tube which produces or has voltages which produce a flow of electrons in excess of 5 kev, which I think is the standard number that the International Commission gives, might produce X-rays.

Mr. Moss. Is it possible to take a set in its original condition that does not have a high level of emission and through service or repair, or substitution of one tube for another, bring about an excess level of emission?

Mr. Terrill. It is quite possible and also through the servicing and repair it is also possible to adjust the voltage so that the voltage being generated across the picture tube, and therefore across the shunt regulator, is greater than the manufacturer intended. This would tend to increase the X-ray production.

Mr. Moss. So we should be concerned here not only with the manufacturer, but the maintenance and service industry as well?

Mr. Terrill. Yes, sir.

Mr. Moss. And has any specific notice been sent to the service industry on the case of the GE or on the scope or type of problems which could increase the emission hazard?

Mr. TERRILL. We have looked into this and from our contact with labor and industry no notice has come to our attention.

Mr. Moss. Do you have responsibility to give such notice?

Mr. TERRILL. I think we have some responsibility for such notice.

Mr. Moss. Do you intend to exercise that responsibility?

Mr. TERRILL. We intend to exercise it. We have asked General Electric to develop a pamphlet. We have talked to staff members of the AFL–CIO so we can develop a pamphlet that will reach the workers in such a way that they will constantly be reminded of the dangers from X-radiation and what they might do about it.

Mr. Moss. We just established through modification and process of repair that sets can be made hazardous which were not hazardous at the time of original production.

Mr. TERRILL. Yes, sir.

Mr. Moss. Are you relying solely then upon the advice of General Electric, or are you speaking broadly for the electric industry?

Mr. TERRILL. We are speaking more broadly. We have talked to the electronics industry association. I think one of the key factors here is to get something out that is effective and that will constantly remind these people of the dangers of X-ray in the most effective way in terms of industry and labor both.

Mr. Moss. Is there an inexpensive device which can be made available to the repair service industry to test sets once repaired to determine levels of radiation?

Mr. TERRILL. We are trying to develop such a device, but thus far one of our concerns is that you have to use a reasonably large film technique to locate these sources of radiation so that when you use the instruments or small films you won't accidently miss the most intense radiation.

Whether or not you would consider a large film technique a simple system I think is an open question.

Mr. Moss. Is it a costly system?

Mr. TERRILL. I wouldn't consider it costly, but I think a repairman might.

Mr. Moss. What would be the cost per set?

Mr. TERRILL. The cost per set?

Mr. Moss. Yes.

Mr. TERRILL. I think for the materials it would be a dollar or two.

Mr. Moss. A dollar or two per set?

Mr. TERRILL. Yes. One of the difficulties is that most servicing organizations would not normally have the facilities available to process the film so that they could be reasonably certain that they were doing a good job of measuring the radiation. This is something that needs more development.

I wouldn't want you all to feel that we had a quick, easy method of doing this.

Mr. Moss. How widely do you sample electronic manufacturers of tubes of high voltage?

Mr. TERRILL. I would say our sampling is negligible except through the State regulatory agencies.

Mr. Moss. How many States have agencies regulating in this field?

Mr. TERRILL. In theory I think all of the States have general authority to protect the public health and safety.

Mr. Moss. I realize that the States under police powers would normally have that authority. How many have agencies exercising that authority?

Mr. TERRILL. All of the large States in terms of population have a reasonable staff in the radiation protection field. I think practically all of the States—I guess I could say all of the States—have some radiation protection personnel.

Mr. Moss. Mr. Dixon, the counsel of the committee, might have some questions.

Mr. DIXON. Mr. Terrill, have you checked any of the repair shops anywhere in the country as to what practices they have to assure that television receivers are safe when returned to homes?

Mr. TERRILL. We have checked some in the Washington area and we are getting reports from State health departments.

Mr. DIXON. Do the shops which were checked have any detection devices in them?

Mr. TERRILL. I would say for practical purposes none.

Mr. DIXON. When was it that you first learned of the problem of the GE shunt voltage regulator tube?

Mr. TERRILL. When did we become aware?

Mr. DIXON. Yes.

Mr. TERRILL. I became aware of it on April 10 in a qualitative way.

Mr. DIXON. And you are satisfied that TV X-radiation is an unwanted side effect if you have voltage sufficient to give satisfactory large screen color reception?

Mr. TERRILL. That it is an unwanted effect?

Mr. DIXON. Yes.

Mr. TERRILL. Yes, sir.

Mr. DIXON. But it is there?

Mr. TERRILL. It is always there. It is a question of how much is there.

Mr. DIXON. How long have you known this?

Mr. TERRILL. That some X-radiation is associated with TV?

Mr. DIXON. Yes.

Mr. TERRILL. I guess it would be hard to define a time, but it goes way back, 10 years.

Mr. DIXON. Did you do any testing over that 10-year period?

Mr. TERRILL. We have done a small amount of testing, but in the early days with black and white television sets we were satisfied with the reports of others in this field. They seemed reasonable and we didn't pursue the matter on a high priority basis while we had things like medical X-rays and fallout to be concerned with.

Mr. DIXON. Since the early days of black and white have you been aware that the voltage has been going up?

Mr. TERRILL. Yes, sir.

Mr. DIXON. As larger sets and as color sets were developed?

Mr. TERRILL. Yes, sir.

Mr. DIXON. You mentioned "normal operations" and "excessive emissions," and I believe a later witness will talk about "acceptable levels." These are rather broad words. Can you have reception which would be satisfactory, as far as a viewer is concerned, which you might consider an abnormal operation? I believe in answering Mr. Moss' question you indicated that you could get an increase in voltage which would not be in accordance with the manufacturer's standards or with the standards that you might have.

Mr. TERRILL. We have had voltages reported to us now up to 33,000 volts, which would be in excess of the voltage the standards are based on, and apparently many people get a very satisfactory picture from their standpoint at voltages that are higher than those for which the set was originally designed.

It is also reported that some TV servicemen routinely increase the voltage to make old picture tubes respond better. Just how widespread this practice is I don't know.

Mr. DIXON. As a matter of fact, isn't there a device to do that.

Mr. TERRILL. There may well be.

Mr. DIXON. Isn't there a booster for fixing a TV?

Mr. TERRILL. I have heard of these boosters but I haven't seen one and no one has reported seeing one to me.

Mr. DIXON. The public attention has centered primarily on this one voltage regulator. Now, you have radiation whether you have this voltage regulator or not and you can get reception without even using this tube, can't you?

Mr. TERRILL. Yes, sir. Some sets are designed without a shunt regulator tube.

Mr. DIXON. How can the committee conclude that the problem resolves itself into this one particular tube in one recent run of sets?

Mr. TERRILL. I don't think the committee should think this. If our testimony has given you the impression that they should only be concerned with this immediate problem we have probably used some inaccurate phraseology at this time.

It is just that we have concentrated our efforts on this because we knew we had a problem at the moment and when a fire is burning you try to put it out.

Mr. DIXON. You know of this one problem, but you have no way at this time of telling the committee whether or not there are comparable problems in other sets and in other tubes, is that correct?

Mr. TERRILL. We believe that at the present time there aren't any other sets with a comparable problem, but there are sets with problems. It is a question of degree and we haven't developed the boundary conditions so we can answer quantitively at this time.

Mr. DIXON. Taking the first part of that answer, upon what do you base your conclusion that there are no comparable problems?

Mr. MACKENZIE. May I supplement Mr. Terrill's response, Mr. Dixon?

Mr. DIXON. Yes, sir.

Mr. MACKENZIE. The capability that the Center has had has been focused in the past several months primarily on the problem of the General Electric television sets. We have attempted to get information from available industry sources with respect to potential or actual emisions from other television sets as well. In this connection the data that have been supplied to us by the Electronic Industry Association has perhaps been the broadest that I know of that relates to the broader problem to which you are referring.

We intend to follow this up further and for this purpose have allocated additional resources to the specific section of the national center that deals with this problem. We are soliciting, in addition to the data that have been obtained from the industry association, comparable information on imports, primarily from the Japanese, who account

for the major part of the imports of television sets that come into this country.

We agree that more work is necessary. May I point out that it has only been within the last 3 months that, to our knowledge, there has been a real demonstration that we are dealing with a broad and significant problem here. We think that this is a broad and significant problem now.

Additional work undoubtedly will be necesary not only for the protection of the individuals who purchase these sets, but also people who are engaged in work in the production facilities and in the repair facilities associated with them.

Mr. DIXON. You mentioned resources and that the problem is broad. Are you equipped as far as your resources are concerned to pursue the broad problem that you speak of, with laboratory personnel and facilities to protect against this problem?

Mr. MACKENZIE. We are not equipped presently to do this on the broad spectrum of all electronics products. To illustrate what I am referring to, we have increased by about fivefold or sixfold the resources that we are devoting currently to investigate the problem relating to television sets. Formerly we had been making some studies in this and related fields, on a level of approximately $50,000 a year support in our own facilities.

We have now increased this to a level of approximately $300,000 per year and it is this increased effort that I am referring to. This, in my opinion, is not sufficient over any reasonable period of time to make a broad surveillance and full assessment of the possible health problems of electronic products totally.

Mr. DIXON. That is all, Mr. Chairman.

Mr. MOSS. Mr. Keith.

Mr. KEITH. Thank you, Mr. Chairman. In your view do we need standards of shielding or may we need some standards of shielding on an industrywide basis?

Mr. TERRILL. Yes, sir; I think we do need standards of shielding even though we do improve the tubes because it is hard to visualize after looking at the tubes we have looked at that tubes are going to be constructed uniformly and quality control so maintained that secondary shielding isn't desirable.

Mr. KEITH. How does the nature of this kind of leakage compare with that of an ordinary X-ray?

Mr. TERRILL. I think the most nearly comparable thing we have to this type of leakage is the dental X-ray. It covers a smaller area and the milliamperage is in some instances comparable. The chief difference there, of course, is that you only go to the dentist every now and then, although most people would only be exposed to radiation from a shunt regulator tube now and then they certainly would be exposed a greater number of times than they would in a dental office.

I think this is the most nearly comparable thing.

Mr. KEITH. What do you mean by "soft radiation"?

Mr. TERRILL. By soft radiation we mean radiation that doesn't penetrate the body in the manner that radiation might if you were having a chest X-ray. However, soft radiation can be used for some types of diagnostic work such as mamography where soft tissues are involved.

Mr. KEITH. May I say just in passing that having represented an area where the craftwork people were concerned about a similar problem some time ago, the quiet atmosphere and the manner in which you presented this problem to the attention of this committee is quite commendable. Thank you, Mr. Chairman.

Mr. TERRILL. Thank you.

Mr. Moss. Mr. Stuckey.

Mr. STUCKEY. As I understand it, we have now 9,000 uncorrected sets. Is that right?

Mr. TERRILL. That is the latest information we have as of about a week ago.

Mr. STUCKEY. Let me ask this question. I have a 9-year-old son who enjoys watching television. Let's assume that he is watching one of these sets. How much harm would be done to him by one of the 9,000 of the regular sets? Is this something that has been determined?

Mr. TERRILL. Well, first, we have to have a combination of a defective tube and a set which will allow your son to get some portion of his body underneath it.

Now, if this isn't the case the radiation level will fall off because he will get mostly scattered radiation and the levels that we have recorded for the tubes would not be his true exposure rate.

On the other hand, most of the people that I talked to, whether they be grandfathers or fathers, are very concerned about the way the youngsters climb around these sets and they continually point out to me that normal operation of television sets for their youngsters is not the normal thing that happens in a home. That was the reason the Surgeon General in his statement said that the set should be disconnected rather than turned off because the elders turn off the sets and the youngsters turn them on again, so it is very difficult to say other than to look at the set and see how your youngster might use the set.

Mr. STUCKEY. Well, let's assume that he was fooling around with the set. What harmful effects could happen or would happen?

Mr. TERRILL. I think the effects would not necessarily be detectable in him as an individual. Radiation effects in this range are expected to be detectable only in a statistical sense through epidemiological studies.

Mr. STUCKEY. Well, are you saying that some harm could or could not come?

Mr. TERRILL. It could occur, but it would be very difficult for us to show you that your son had been injured by the effects of this radiation as an individual. As a member of a large group of youngsters similarly exposed probably some effects could be detected.

Mr. MACKENZIE. May I supplement this also, Mr. Stuckey? I think some of the effects that we are concerned about are difficult to identify specifically in individuals for several reasons.

First, some of these may be genetic in character. Second, many of the effects may be delayed in time, over significant periods of years actually, so that to determine precisely that, let us say, a corneal defect in the eye that develops in an individual some time later might be specifically associated with such exposure as we are now discussing is very difficult. Such association of exposure and effect can perhaps be shown best by broad statistical studies of the type that Mr. Terrill referred to.

If you can associate a greater incidence of effects of this kind with increased exposure, then you may come to a conclusion that there is a cause and effect relationship. These things can be demonstrated in experimental animals, but to say surely that the effect on a specific individual was associated with past exposure is a very difficult conclusion to come to.

Mr. Moss. Would the gentleman yield?

Mr. STUCKEY. Yes, sir.

Mr. Moss. I would like to suggest that this is an area which will be very carefully and fully explored by Congressman Jarman's subcommittee later this month. Our concern is with the technical excellence of products and the degree to which standards are being monitored to insure a safe product.

Mr. Dixon has one question.

Mr. DIXON. Dr. Terrill, you know that much of the correspondence on this has been made a part of the Congressional Record.

Mr. TERRILL. Yes, sir.

Mr. DIXON. With the permission of the chairman and the subcommittee I would like to request that the entire correspondence which you sent out and received on the subject be made a part of the record in this hearing.

Mr. Moss. If there is no objection it will be included in the record at this point.

Mr. TERRILL. Yes, sir.

(The material referred to follows:)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., August 4, 1967.

Hon. JOHN E. MOSS,
House of Representatives,
Washington, D.C.

DEAR MR. MOSS: I am submitting, for the record, copies of correspondence and other pertinent materials in support of my Statement before the Subcommittee on Commerce and Finance of the House Interstate and Foreign Commerce Committee on July 31, 1967. These items are provided in chronological order and attached to this letter.

I would be pleased to provide any further information you may desire concerning the activities of the National Center for Radiological Health.

Sincerely yours,

JAMES G. TERRILL, JR., *Director.*

MATERIALS IN SUPPORT OF THE STATEMENT BY JAMES G. TERRILL, JR.

ITEM AND DESCRIPTION

1. Sections 301 and 314 of the Public Health Service Act, as amended (Public Law 410, 78th Congress, as amended).
2. National Committee on Radiation Protection and Measurements recommendation regarding television X-ray emissions (*Radiology*, July 1960, page 122).
3. Letter dated December 13, 1966 from Dr. Jan Cammermeyer to Dr. C. E. Nelson describing a review of histological sections of brain tissue provided by Dr. John N. Ott.
4. Memorandum dated December 14, 1966 discussing histological sections from rats allegedly damaged by television emissions.
5. Memorandum dated January 13, 1967 regarding radiation emitted from color television sets.
6. Letter dated January 26, 1967 from J. L. Sheldon to Dr. Clifford Nelson indicating television industry compliance with NCRP recommendation.

7. Letter dated February 13, 1967 from James G. Terrill, Jr. to Ralph J. Renton of the FCC requesting information and a conference to discuss television receiver emissions.
8. Letter dated February 14, 1967 from Dr. Clifford E. Nelson to Dr. John L. Sheldon in answer to the latter's inquiry of January 26, 1967.
9. Letter dated March 6, 1967 from James G. Terrill, Jr. to Dr. John L. Sheldon requesting data from the EIA Ad Hoc Committee on Consumer Products and Tubes relative to emissions from television receivers.
10. Letter dated March 28, 1967 from Lawrence J. Perez, Jr. to Colonel William E. Froemming for information on the biological and behavioral effects of microwave radiations and ultrasonic sound.
11. Letter dated March 28, 1967 from Lawrence J. Perez, Jr. to Commander C. F. Tedford for information on the biological and behavioral effects of microwave radiations and ultrasonic sound.
12. Letter dated March 28, 1967 from Lawrence J. Perez, Jr. to Dr. Sylvan J. Kaplan requesting information on the biological and behavioral effects of non-ionizing radiations.
13. Memorandum dated March 29, 1967 containing the Minutes of a Meeting between NCRH and FCC concerning radiations from TV receivers.
14. Letter dated April 17, 1967 from Charles L. Weaver to Dr. Merril Eisenbud informing him of a May meeting to discuss the technology and measuring techniques for investigations of television set emissions.
15. Memorandum dated May 18, 1967 reporting on a conference with officials of GE Company and others held in New York City on May 17, 1967.
16. Press Statement dated May 18, 1967 by James G. Terrill, Jr.
17. Press Statement dated May 18, 1967 by the General Electric Company.
18. Memorandum dated May 23, 1967 reporting on a May 11, 1967 meeting in New York City between representatives of the National Center for Radiological Health and the General Electric Company.
19. Letter dated May 24, 1967 from James G. Terrill, Jr. to Robert Wilson accepting the loan of four television sets from General Electric for testing.
20. Letter dated May 29, 1967 from the Surgeon General to Fred J. Borch for advice concerning General Electric Company's success in locating and correcting television sets in the hands of the public.
21. Letter dated June 2, 1967 from R. C. Wilson to James G. Terrill, Jr. in response to the letter of May 24, 1967.
22. Memorandum dated June 7, 1967 informing Regional Representatives to request State assistance in obtaining immediate correction of the unmodified General Electric sets.
23. Letter dated June 9, 1967 from R. C. Wilson to Dr. Leo J. Gehrig in answer to the Surgeon General's letter of May 29, 1967.
24. Report titled "X-ray Emission from Shunt Regulator Tubes for Color Television Receivers" dated June 1967. (In committee files)
25. Memorandum dated July 3, 1967 reporting upon a conference with representatives of the Electronic Industries Association held on June 29, 1967.
26. Letter dated July 4, 1967 from the Surgeon General to R. C. Wilson requesting a final report from the General Electric Company on the progress of the modification program.
27. Press Release dated July 21, 1967 by the Surgeon General suggesting that individuals owning unmodified General Electric television receivers disconnect the sets, including a table showing the distribution of x-radiation measurements from 185 shunt regulator tubes.

ITEM 1

TITLE III—GENERAL POWERS AND DUTIES OF PUBLIC HEALTH SERVICE

PART A—RESEARCH AND INVESTIGATION

IN GENERAL

SEC. 301. The Surgeon General shall conduct in the Service, and encourage, cooperate with, and render assistance to other appropriate public authorities,

scientific institutions, and scientists in the conduct of, and promote the coordination of, research, investigations, experiments, demonstrations, and studies relating to the causes, diagnosis, treatment, control, and prevention of physical and mental diseases and impairments of man, including water purification, sewage treatment, and pollution of lakes and streams. In carrying out the foregoing the Surgeon General is authorized to—

(a) Collect and make available through publications and other appropriate means, information as to, and the practical application of, such research and other activities;

(b) Make available research facilities of the Service to appropriate public authorities, and to health officials and scientists engaged in special study;

(c) Establish and maintain research fellowships in the Service with such stipends and allowances, including traveling and subsistence expenses, as he may deem necessary to procure the assistance of the most brilliant and promising research fellows from the United States and abroad;

(d)[1] Make grants-in-aid to universities, hospitals, laboratories, and other public or private institutions, and to individuals for such research or research training projects as are recommended by the National Advisory Health Council, or, with respect to cancer, recommended by the National Advisory Cancer Council, or, with respect to mental health, recommended by the National Advisory Mental Health Council, or with respect to heart diseases, recommended by the National Advisory Heart Council, or, with respect to dental diseases and conditions, recommended by the National Advisory Dental Research Council, and include in the grants for any such project grants of penicillin and other antibiotic compounds for use in such project; and make, upon recommendation of the National Advisory Health Council, grants-in-aid to public or nonprofit universities, hospitals, laboratories, and other institutions for the general support of their research and research training programs: *Provided*, That such uniform percentage, not to exceed 15 per centum, as the Surgeon General may determine, of the amounts provided for grants for research or research training projects for any fiscal year through the appropriations for the National Institutes of Health may be transferred from such appropriations to a separate account to be available for such research and research training program grants-in-aid for such fiscal year;

(e) Secure from time to time and for such periods as he deems advisable, the assistance and advice of experts, scholars, and consultants from the United States or abroad;

(f) For purposes of study, admit and treat at institutions, hospitals, and stations of the Service, persons not otherwise eligible for such treatment;

(g) Make available, to health officials, scientists, and appropriate public and other nonprofit institutions and organizations, technical advice and assistance on the application of statistical methods to experiments, studies, and surveys in health and medical fields; and

(h)[2] Enter into contracts during the fiscal year ending June 30, 1966, and each of the two succeeding fiscal years, including contracts for research in accordance with and subject to the provisions of law applicable to contracts entered into by the military departments under title 10, United States Code, sections 2353 and 2354, except that determination, approval, and certification required thereby shall be by the Secretary of Health, Education, and Welfare; and

(i)[3] Adopt, upon recommendation of the National Advisory Health Council, or, with respect to cancer, upon recommendation of the National Advisory Cancer Council, or with respect to mental health, upon recommendation of the National Advisory Mental Health Council, or, with respect to heart diseases, upon recommendation of the National Advisory Heart Council, or, with respect to dental diseases and conditions, upon recommendations of the National Advisory Dental Research Council, such additional means as he deems necessary or appropriate to carry out the purposes of this section.

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[1] Subsec. 301(d) amended by P.L. 87-838.
[2] New subsec. 301(h) inserted by sec. 3 of P.L. 89-115.
[3] Subsec. 301(h) was redesignated as subsec. 301(l) by sec. 3 of P.L. 89-115.

PART B—FEDERAL-STATE COOPERATION

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GRANTS AND SERVICES TO STATES

SEC. 314. (a) To enable the Surgeon General to carry out the purposes of section 301 with respect to developing more effective measures for the prevention, treatment, and control of venereal idseases, and to assist, through grants and as otherwise provided in this section, States, counties, health districts, and other political subdivisions of the States in establishing and maintaining adequate measures for the prevention, treatment, and control of such diseases, including the training of personnel for State and local health work, and to enable him to prevent and control the spread of the veneral diseases in interstate traffic, and to meet the cost of pay, allowances, and traveling expenses of commissioned officers and other personnel of the Service detailed to assist in carrying out the purposes of this section with respect to the veneral diseases, and to administer this section with respect to such diseases, there is hereby authorized to be appropriated for each fiscal year a sum sufficient to carry out the purposes of this subsection.

(b) To enable the Surgeon General to carry out the purposes of section 301 with respect to developing more effective measures for the prevention, treatment, and control of tuberculosis, and to assist, through grants and as otherwise provided in this section, States, counties, health districts, and other political subdivisions of the States in establishing and maintaining adequate measures for the prevention, treatment, and control of such disease, including the provision of appropriate facilities for care and treatment and including the training of personnel for State and local health work, and to enable him to prevent and control the spread of tuberculosis in interstate traffic, and to meet the cost of pay, allowances, and traveling expenses of commissioned officers and other personnel of the Service detailed to assist in carrying out the purposes of this section with respect to tuberculosis, and to administer this section with respect to such disease, there is hereby authorized to be appropriated for the fiscal year ending June 30, 1945, the sum of $10,000,000, and for each fiscal year thereafter a sum sufficient to carry out the purposes of this subsection.

(c)[4] To enable the Surgeon General to assist, through grants and as otherwise provided in this section, States, counties, health districts, and other political subdivisions of the States in establishing and maintaining adequate public health services, including grants for demonstrations and for training of personnel for State and local health work, there is authorized to be appropriated for each of the first six fiscal years ending after June 30, 1961, the sum of $50,000,000. When so provided in any Act appropriating funds for carrying out the purposes of this subsection for any year, such amounts as may be specified in such Act shall be available only for allotments and payments for such services and activities included under this subsection as may be provided in such Act; and in such case the requirements of subsection (h) shall be separately applied to such allotments and payments. Of the sum appropriated for each fiscal year pursuant to this subsection there shall be available (1) such amount as may be necessary to enable the Surgeon General to provide demonstrations and to train personnel for State and local health work and to meet the cost of pay, allowances, and traveling expenses of commissioned officers and other personnel of the Service detailed to assist States in carrying out the purposes of this subsection, and (2) an amount not to exceed $5,000,000 to enable the Surgeon General to make grants-in-aid, under such terms and conditions as may be prescribed by regulations, for provision in public or nonprofit schools of public health accredited by a body or bodies recognized by the Surgeon General, of comprehensive professional training, specialized consultive services, and technical assistance in the fields of public health and in the administration of State and local public health programs, except that in allocating funds made available under this clause (2) among such schools of public health the Surgeon General shall give primary consideration to the number of federally sponsored students attending each such school.[4]

(d) For each fiscal year, the Surgeon General, with the approval of the Secretary, shall determine the total sum from the appropriation under subsection (a),

[4] Sec. 314(c) and subsec. 314(c)(2) amended by sec. 4(a) of P.L. 89-109.

the total sum from the appropriation under subsection (b), and, within the limits specified in subsection (c), the total sum from the appropriation under that subsection which shall be available for allotment among the several States. He shall, in accordance with regulations, from time to time make allotments from such sums to the several States on the basis of (1) the population, (2) the extent of the venereal disease problem, the extent of the tuberculosis problem, and the extent of the mental health problem and other special health problems, respectively, and (3) the financial need of the respective States. Upon making such allotments the Surgeon General shall notify the Secretary of the Treasury of the amounts thereof.[5]

(e) To enable the Surgeon General to carry out the purposes of part B of title IV and to assist, through grants, States, counties, health districts, and other political subdivisions of the State, and public and nonprofit agencies, institutions, and other organizations, in establishing and maintaining organized community programs of heart disease control, including grants for demonstrations and the training of personnel, there is hereby authorized to be appropriated for each fiscal year such sums as may be necessary for such purposes. For each fiscal year, the Surgeon General, with the approval of the Secretary, shall determine the total sum from the appropriation under this subsection which shall be available for allotment among the several States, and shall, in accordance with regulations, from time to time make allotments from such sum to the several States on the basis of (1) the population and (2) the financial need of the respective States. Upon making such allotments the Surgeon General shall notify the Secretary of the Treasury of the amounts thereof.[6]

(f) [7] The Surgeon General, with approval of the Secretary, shall from time to time determine the amounts to be paid to each State from the allotments to such State, and shall certify to the Secretary of the Treasury the amounts so determined, reduced or increased, as the case may be, by the amounts by which he finds that estimates of required expenditures with respect to any prior period were greater or less than the actual expenditures for such period: *Provided*, That in the case of amounts to be paid from allotments to any State under subsection (e), the Surgeon General may determine and certify to the Secretary of the Treasury amounts to be paid to a county health district, other political subdivision of the State or to any public or nonprofit agency, institution, or other organization in the State, if he finds that payment to such subdivision or other organization has been recommended by the State health authority of the State, and (1) that the State health authority has not, prior to August 1 of the fiscal year for which the allotment is made, presented and had approved a plan in accordance with subsection (g), or (2) that the State health authority is not authorized by law to make payments to such other organization. Upon receipt of such certification, the Secretary of the Treasury shall, through the Division of Disbursement of the Treasury Department and prior to audit or settlement by the General Accounting Office, pay in accordance with such certification.[8]

(g) [9] The moneys so paid to any State, or to any political subdivision or other organization, shall be expended solely in carrying out the purposes specified in subsection (a), or subsection (b), or subsection (c), or subsection (e), as the case may be, and in accordance with plans, approved by the Surgeon General, which have been presented by the health authority of such State, or, under the circumstances specified in subsection (f) (1), by the political subdivision, or the agency, institution or other organization to whom the payment is made, and, to the extent that any such plan contains provisions relating to mental health, by the mental health authority of such State.[10]

(h) [9] Money so paid from allotments under subsections (a), (b), (c), and (e), shall be paid upon the condition that there shall be spent in such State for the same general purpose from funds of such State and its political subdivisions (or

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[5] Subsec. 314(d) was amended by the National Mental Health Act (P.L. 487, 79th Congress).

[6] New subsec. (e) was inserted by sec. 5(a) of the National Heart Act (P.L. 655, 80th Congress).

[7] Subsecs. (e) through (j) were redesignated as subsecs. (f) through (k) by sec. 5(a) of the National Heart Act (P.L. 80–655).

[8] The redesignated subsec. (f) was amended by sec. 5(b) of the National Heart Act (P.L. 655, 80th Congress).

[9] Subsecs. (e) through (j) were redesignated as subsecs. (f) through (k) by sec. 5(a) of the National Heart Act (P.L. 655, 80th Congress).

[10] Redesignated subsec. (g) was amended by sec. 9(c) of the National Mental Health Act (P.L. 487, 79th Congress) and sec. 5(c) of the National Heart Act (P.L. 655, 80th Congress).

in the case of payments to a political subdivision or to an agency, institution or other organization under circumstances specified in subsection (f)(1) from funds of such political subdivision or organization), an amount determined in accordance with regulations.[11]

(i) [9] [12] Whenever the Surgeon General, after reasonable notice and opportunity for hearing to the health authority or, where appropriate, the mental health authority of the State (or, in the case of payments to any political subdivision or any agency, institution, or other organization under the circumstances specified in subsection (f)(1), such subdivision or organization) finds that, with respect to money paid to the State, subdivision, or organization out of appropriations under subsection (a), or subsection (b), or subsection (c), or subsection (e), as the case may be, there is a failure to comply substantially with either—

(1) the provisions of this section;

(2) the plan submitted under subsection (g); or

(3) the regulations;

the Surgeon General shall notify such State health authority or mental health authority, political subdivision, or organization that further payments will not be made to the State subdivision, or organization from appropriations under such subsection (or in his discretion that further payments will not be made to the State, subdivision, or organization from such appropriations for activities in which there is such failure), until he is satisfied that there will no longer be any such failure. Until he is so satisfied the Surgeon General shall make no further certification for payment to such State, subdivision, or organization from appropriations under such subsection, or shall limit payment to activities in which there is no such failure.

(j) [13] All regulations and amendments thereto with respect to grants to States under this section shall be made after consultation with a conference of the State health authorities and, in the case of regulations or amendments which relate to or in any way affect grants under subsection (c) for work in the field of mental health, the State mental health authorities. Insofar as practicable, the Surgeon General shall obtain the agreement, prior to the issuance of any such regulations or amendments, of the State health authorities and, in the case of regulations or amendments which relate to or in any way affect grants under subsection (c) for work in the field of mental health, the State mental health authorities.

(k) [13] Funds appropriated under subsection (a) and funds appropriated under subsection (b), in addition to being available for payments to States, shall also be available for expenditure by the Surgeon General in otherwise carrying out the respective subsections, including expenditures for printing and binding of the findings of investigations, and for pay and allowances and travelling expenses of personnel of the Service engaged in activities authorized by the respective subsections.

(l) [14] Except as otherwise provided in this subsection the provisions of this section shall be applicable to Guam and American Samoa in the same manner in which they apply to the States. Amounts paid to Guam or American Samoa from its allotment under subsections (a), (b), (c), or (e) of this section, together with matching funds of Guam or American Samoa, respectively, may, with the approval of the Surgeon General, be expended in carrying out the purposes specified in any such subsection or subsections other than the one under which the allotment was made.

(m) The Surgeon General, at the request of the State health authority or, where appropriate, the State mental health authority, may reduce the payments to a State under this section by the amount of the pay, allowances, traveling expenses, and any other costs in connection with the detail of an officer or employee of the Public Health Service to the State or any of its political subdivisions when such detail is made for the convenience of and at the request of the State and for purposes of carrying out its State plan approved under this section. The amount by which such payments are so reduced shall be available for payment of such costs by the Surgeon General, but shall, for purposes of subsection (h), be deemed to have been paid to the State.[15]

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[11] The redesignated subsec. (h) was amended by sec. 5(d) of the National Heart Act (P.L. 655, 80th Congress).

[12] Redesignated subsec. (i) was amended by sec. 9(d) of the National Mental Health Act (P.L. 487, 79th Congress) and sec. 5(e) of the National Heart Act (P.L. 655, 80th Congress).

[13] Subsecs. (e) through (j) were redesignated as subsecs. (f) through (k) by sec. 5(a) of the National Heart Act (P.L. 655, 80th Congress).

[14] Subsec. (l) was amended by sec. 4 of P.L. 87-688, effective July 1.

[15] Subsecs. 314 (m) and 316 (a) and (b) added by sec. 2 of P.L. 87-395.

ITEM 2

[From Radiology, July 1960, p. 122]

NATIONAL COMMITTEE ON RADIATION PROTECTION AND MEASUREMENTS (NCRP)

1. At its meeting in November 1959, the Executive Committee of the NCRP agreed that a statement should be made with regard to the maximum permissible dose from television receivers. Such a statement has been prepared and voted upon by the full committee.

The following position has been adopted by the NCRP:

During the past years members of the NCRP have investigated the emission of x-rays from television receivers. From a genetic point of view even sources of minute radiation are of significance if they affect a large number of people. X-rays emitted by home television sets are, therefore, of interest because of the high percentage of the population involved. In order to insure that the television contribution to the population gonad dose will be only a small fraction of that due to natural background radiation, the NCRP recommends that the exposure dose rate at any readily accessible point 5 cm. from the surface of any home television receiver shall not exceed 0.5 mr per hour under normal operating conditions.

Laboratory and field measurements[1] have shown that with this maximum permissible exposure level the television contribution to the gonad dose at the usual viewing distances will be considerably less than 5 percent of that due to the average natural background radiation. Most of the present television receivers already meet this requirement with a high factor of safety. In general, therefore, no changes in shielding of existing sets will be required. However, the recommended limit will insure that future television receivers, operating at higher voltages, will not contribute significantly to the population gonad dose.

2. In its statements of Jan. 8, 1957, and April 15, 1958, the NCRP specified a permissible dose of 10 (N–18 rems) to the skin of the whole body for radiation workers. It has subsequently been realized that the use of the age-proration formula for the skin of the whole body is not practical under some conditions. Therefore, the Committee will discontinue this statement and in its place make the followng recommendation:

Skin of the whole body: The maximum permissible dose to the skin of the whole body shall not exceed 30 rems per year and the dose in any thirteen consecutive weeks shall not exceed 10 rems.

This statement is essentially the same as in the 1959 ICRP report except that the ICRP specified a 13-week limitation of 8 rems. It is felt that this is unnecessarily low if the annual limit is 30 rems.

3. The above changes will be incorporated in the appropriate reports of the NCRP as the case arises.

ITEM 3

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL INSTITUTES OF HEALTH,
Bethesda, Md., December 13, 1966.

Dr. CLIFFORD E. NELSON,
Assistant to the Chief, State Assistance Branch, Division of Radiological Health, Bureau of State Services, Washington, D.C.

DEAR DR. NELSON: I have reviewed the six hematoxylin-eosin stained paraffin sections labeled 8–2, 9–2, 10–2, 11–2, 12–2, 12–3 and 12–4, Evanston Hospital Association, submitted to you by Dr. John N. Ott.

The formation of (a) irregular cracks in the tissue, (b) small linear ruptures in parallel array and (c) linear scratch marks in the direction of cutting is associated with preparatory errors. The presence of blood in many blood vessels is indicative of inadequate perfusion procedure. The development of numerous dark, or hyperchromatic nerve cells, and dark, or pyknotic nuclei throughout the cerebral hemispheres and the cerebellum is an expression of traumatization of the incompletely fixed brains during their extraction from the skull; these cellular changes are regarded as artifactual. It should be noted that although formalin

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[1] Braestrup, C. B., and Mooney, R. T.: X-ray Emission from Television Sets. Science 130: 1071–1074, Oct. 23, 1959.

is frequently used for fixation by perfusion, this fixative does not prevent the formation of neuronal and nuclear artifacts.

Some of the microscopic sections also contain defects similar to the "lesions" referred to in the colored photomicrographic prints previously submitted to Dr. Nelson by Dr. Ott. The periphery of these defects is scalloped and the surrounding tissue is free of any reaction such as enlarged astrocytes, new formation of microglia cells or phagocytes, and/or reactive changes of blood vessels. In the absence of such tissue reactions, the defects cannot be associated with a pathologic process during life. In view of the many signs of preparatory anomalies, the defects, or "lesions" are, in the opinion of the reviewer, due to a methodological error.

The size of the chorioid plexus is within normal range.

After a review of both colored prints and microscopic sections, I would interpret the "lesions" referred to by Dr. John N. Ott as non-specific. In my considered opinion there are, in the available histologic material, no significant pathologic changes.

Sincerely yours,

JAN CAMMERMEYER, M.D.,
Head, Section on Experimental Neuropathology,
Laboratory of Neuropathology, NINDB.

ITEM 4

MEMORANDUM

PUBLIC HEALTH SERVICE,
December 14, 1966.

To: Chief, State Assistance Branch, Division of Radiological Health.
From: Assistant to the Chief, State Assistance Branch, DRH.
Subject: Histological Sections Pertaining to Alleged TV Damage to Rats.

While I was in Chicago attending the RSNA Meeting the week on November 27, my secretary received seven slides from Mr. T. R. Janicek of Chicago, Illinois. These slides appear to be the ones on which Dr. Ott has based his assertions the "severe brain tissue damage" wa produced in rats from their being near his Sears Roebuck Silvertone color television set. Presumably Mr. Janicek sent me the slides at the direction of Dr. John N. Ott, currently of Sarasota, Florida, who sent me some photographs of plants, rats, and histological sections pertaining to the same subject matter.

The slides were reviewed by Dr. Albert Hilberg of the DRH Research Branch during the week of December 5, 1966. On December 8, 1966, I took the slides to the Armed Forces Institute of Pathology (AFIP) where they were reviewed by Lt. Col. F. M. Garner of the Veterinary Pathology Section. I left the slides there overnight, and they were seen on December 9 by Dr. Kenneth Earle and Major John Hardman of the Neuropathology Section. Later on December 9 I took the slides to Bldg. #9 at NIH and left them in the office of Dr. Jan Cammermeyer for his review. On December 14 I regained the slides from Dr. Cammermeyer's office and took them to Dr. Paul Maclean (room 3N 310 in Bldg. #10) and to Mr. George Creswell (adjacent to Dr. Maclean) both of whom are with the National Institutes of Mental Health. Later on December 14 I returned to AFIP to have Lt. Col. F. M. Garner reinterpret slide number 8–2 in the series.

Had they been available in this area at this time, I would have asked NIH's Dr. Igor Klatzo, Dr. Grant L. Rasmussen, and Dr. Donlin Long to review the slides. Their absence, however, made this impossible at this time.

Mr. Creswell and Dr. Maclean noted on slide number 8–2 that there were some pigmented cells on one side of the brain that were not seen on the other side of the brain. They felt that this was difficult to comment about because the section had been made on an agle through the brain so that it was not symmetrical and the adjacent sections had not been made available for review. Because of this, therefore, I returned to Lt. Col. F. M. Garner at AFIP. He told me that the symmetrical appearance of the cells shown on slide #8–2 was the result of the way the section had been made and was of no significance.

I did not obtain from the AFIP personnel their written interpretation of the slides, since the AFIP rules preclude their making a written report unless certain formalities are followed, including release of the slides to the AFIP accession files. Since these slides did not belong to us, I could not release the slides to AFIP for their files.

The verbal comments I received from the Washington area individuals identified in this memorandum were all consistent with the written opinion I received in a letter dated December 13, 1966 from Dr. Jan Cammermeyer of NINDB. In short, no significant lesions or changes were found, other than those that had been produced by the preparation and staining of the histological sections.

I should also mention that I showed several people the color photographs that I received from Dr. Ott. The list includes Dr. Cammermeyer, Dr. Reese, Dr. Brightman, and Dr. Alfred Coulombre of NINDB.; Dr. Maclean and Mr. Creswell of NIMH; Dr. Hilberg of DRH; and Dr. Garner and Dr. Hardman of AFIP. Their unanimous opinion was that the photographs gave no evidence of significant lesions or changes, other than those that had been produced by the preparation and staining of the sections that were shown in the photographs.

Rather than hold the slides any longer, I returned them—by registered mail—to Mr. Janicek, 5847 North Winthrop, Chicago, Illinois, later in the day on December 14, 1966.

Attached, for your information, is a copy of Dr. Jan Cammermeyer's letter of December 13. (See item 3.)

I believe that we have obtained the views of several experts to the effect that neither the slides nor the photographs of the slides support Dr. Ott's assertions that "severe brain tissue damage" was produced in the rat brains.

CLIFFORD E. NELSON, M.D.

ITEM 5

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL,
January 13, 1967.

To: Chief, Industrial Radiation Unit, Radioactive Materials Section, Medical & Occupational Radiation Program, National Center for Radiological Health.
From: Industrial Radiation Unit, Radioactive Materials Section, Medical & Occupational Radiation Program, NCRH.
Subject: Radiation Emitted from Color Television Sets.

Saul Harris contacted John Villforth and informed him that the General Electric Co. found measurable radiation fields from new production line color TV sets. The radiation was coming from the sides of wooden cabinets and reached maximum readings between 20 and 30 mr/hr. These readings were taken by a health physicist of G.E. under "extreme" operational conditions (i.e. the picture tube was off and a heavy current load was placed on the circuit). The health physicist said that a regulator tube (#6LC6) was responsible for the radiation output of X-rays in the 25–30 kvp range. The readings were taken at the surface of the cabinet; however no mention was made of the survey device as to RF shielding, energy calibration, etc. General Electric Co. notified Dr. Francis Bradley of the New York State Labor Department.

Saul Harris then spoke to Mr. Don Fleckenstein of G.E. and Mr. Fleckenstein said that G.E. would design an internal shield for the circuit to reduce the radiation to permissible levels.

Mr. Fleckenstein then said he would like to see a sign placed on the internal shield which would warn repair men of hazardous radiation if the shield should be removed. The New York State Department of Labor is contemplating making such a warning sign a requirement. Saul suggested that we might submit an amendment to NBS and the Council of State Governments to rectify such an omission and recommend that a warning sign be placed on temporary shields.

Another problem also arises. The Underwriter's Laboratory, which approves electronic equipment, may not approve such a temporary shield because their "standards" do not cover such a situation. Therefore, we might have to suggest an adjustment to their safety criteria. Saul personally knows Mr. Leonard Horn of Underwriter's Laboratory and can contact him when necessary.

On January 11, 1967 I received a call from John Eure who contacted Dr. Bradley at the New York State Labor Department. Dr. Bradley will make arrangements to visit G.E. to survey the TV sets on January 18 or 19, 1967. Dr. Bradley informed John Eure that G.E. is now thinking about installing a permanent shield over the regulator tube.

STEVEN A. COPPOLA.

ITEM 6

CORNING GLASS WORKS,
Corning, N.Y., January 26, 1967.

DR. CLIFFORD NELSON,
National Center for Radiological Health,
Rockville, Md.

DEAR DR. NELSON: As you know I am Chairman of an ad hoc committee of the Electronic Industries Association. The committee is concerned with the claims made by Dr. John N. Ott that television receivers emit ionizing radiation that causes brain cell damage and abnormal behavior in rats; also that the growth of bean plants is affected in certain ways. Also, he has suggested that ionizing radiation from television sets can cause adverse effects in television viewers. Further, that additional shielding is required in television receivers to prevent this presumed injury.

We understand that the National Center for Radiological Health has been studying this matter for some time and we would appreciate it if a letter could be written outlining the conclusions reached and your present position.

The television industry has long been concerned with the safety of viewers and has taken measures for many years to insure that receivers comply with established safety limits for x-radiation. Presently the recommendations of the NCRP are being observed in a very conservative way. Our independent study suggests that exposure rates at least hundreds of times greater than those emitted by television receivers would be required to produce the effects claimed by Dr. Ott. Nevertheless, we are anxious to have the benefit of all expert opinion in this matter and therefore are extremely anxious to receive information regarding your study.

Very sincerely,

J. L. SHELDON,
Research Manager, TV Products Division.

ITEM 7

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., February 13, 1967.

MR. RALPH J. RENTON,
Chief Engineer, Federal Communications Commission,
Washington, D.C.

DEAR MR. RENTON: I am writing to you with reference to questions that have been raised recently about alleged hazards to plants and animals from conventional home television receivers. Among the factors influencing my decision to write to you are the following:

1. John N. Ott, a nature time-lapse photographer from Illinois and Florida, has asserted that in his experiments plants and rats were adversely affected by some form of radiation produced by the operation of television receivers, both black and white and color sets, in their immediate vicinity. He has asserted that lead protection spared plants and animals from the effects he described.

2. Studies pertaining to the amounts of x rays produced by television receivers suggest that the x rays are not considered to be sufficient to account for the findings he alleges to have occurred.

3. Susan Korbel, Ph.D., a psychologist at the University of Arkansas in Fayetteville, has provided reports that show behavioral changes in rats and mice exposed to UHF radiation in the 300 to 920 megacycle range after prolonged exposures at intensities of 50,000 microvolts. We understand that she feels that such exposures alter the levels of acetyl choline in the test animals.

4. It is my understanding that current FCC limits, as set forth in Title 47 CFR, section 15.63, at 100 feet are 1000 microvolts per meter from UHF radiations. Presumably this would permit higher levels at shorter distances, such as one foot, where Dr. Ott's test animals and plants were kept during his tests.

5. The written material available to us indicates that the FCC limit of 1000 microvolts per meter for television broadcast receivers is an exception to generally more stringent limits, the exception having been extended to April 30, 1967.

6. My understanding that these FCC limits have been set for the most part on the basis of prevention of interference with other communications systems, rather than on the basis of information about possible biological harm at higher or lower levels of UHF radiations.

I would appreciate hearing from you with reference to the FCC limits on UHF production by television receivers and the biological data or reports that have been used in setting the limits. I would also appreciate knowing what levels of UHF have been found when measurements have been made in various directions from television receivers at close-in distances, such as one foot away from the surfaces.

Perhaps if data are lacking, a conference should be arranged among personnel from our respective organizations in order to determine what steps can be taken to gather sufficient information on this matter. I can be reached at 154–252 should you wish to discuss this matter over the phone.

Sincerely yours,

JAMES G. TERRILL, Jr., *Director.*

ITEM 8

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., February 14, 1967.

Dr. JOHN L. SHELDON,
Research Manager, TV Products Division,
Corning Glass Works, Corning, N.Y.

DEAR DR. SHELDON: I am writing in response to your inquiry of January 26 pertaining to the assertions by Dr. John Ott about alleged hazards—particularly x-ray hazards—resulting from the operation of home television receivers.

As yet, we are not aware of any studies that have confirmed Dr. John Ott's assertions about possible harmful effects from radiation from conventional home television equipment. Our measurements of the levels of x rays at the surface and nearby do not show radiation in excess of the limits that have been recommended by the NCRP (0.5 mR per hour under normal operating conditions at any readily accessible point five centimeters from the surface of any home television receiver).

We understand that Dr. Thomas S. Harvey, Director of the Bio-Analytical Laboratory of Freehold, New Jersey, has conducted some studies with rats that were caged near color television sets. Dr. Harvey's studies, we have been told, contradict Dr. Ott's assertions. As yet Dr. Harvey has not published his findings officially. However, the October 24, 1966 issue of Television Digest, on page 11, contains a note that RCA Labs had released a summary, as follows:

"Experiments designed to reduplicate the work of Dr. John Ott in which bush beans & rats were raised directly in front of color TV sets failed to yield the results he obtained. The growth & behavior of our plants & animals fell within normal limits and our statistical samples were of larger magnitude than his. Weanling Wistar rats, all located within 24 in. of a color TV set operating 8 hours per day, developed normally and produced normal offspring who in turn developed and produced another generation of offspring whose behavior & anatomy were normal."

Independent review of the slides loaned us by Dr. Ott fail to confirm his assertions that "severe brain tissue damage" was produced in the rats in his tests. The tissues were considered to be essentially normal.

If a cause and effect relationship exist to incriminate a television receiver and the behavioral changes in rats and the plant changes that Dr. Ott has described, it is presently my opinion most unlikely that x rays produced by the receiver were the causative agent. Aside from various extraneous factors that warrant consideration, there could perhaps be some other types of emanations from a television receiver to explain the peculiar effects that Dr. Ott asserts he found in his

experiments with a particular model TV set. Sound at 15,750 cycles per second, produced by the horizontal scanner of some TV sets, or perhaps UHF radiation that is produced in the range from 470 to 890 megacycles due to oscillators in TV equipment are the factors that seem to warrant the most consideration. As yet, I have been unable to find suitable data on these factors to know how real such problems might be.

While I am familiar with some of the references you have brought to my attention about the production of x rays by television receivers, I am not aware of data about the levels of UHF radiation and/or sound at 15,750 cycles produced by TV receivers, nor am I aware of any tests that have been done to study what the biological effects of such exposures might be. Any information you can provide along those lines will be appreciated.

Sincerely yours,

CLIFFORD E. NELSON, M.D.,
Assistant to the Director.

ITEM 9

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., March 6, 1967.

DR. JOHN SHELDON,
Chairman, Ad Hoc Committee on Consumer Products and Tubes,
Electronics Industries Association, Corning Glass Works,
Corning, N.Y.

DEAR DR. SHELDON: I am writing to confirm our request at our meeting of February 15, 1967, for more specific information on the emissions of color television receivers and the possible health effects resultant from the use of TV sets in the home. As we discussed, the information which you have provided to date has been very helpful but does not provide a sound basis for biological experimentation.

Our review to date of the literature and discussions with some technical staff of the manufacturers of television components and sets, has determined that little organized information exists on the various emissions from commercial TV receivers in home use. If we are to make definitive statements regarding the possible health effects, or to plan research or investigate efforts to ascertain the nature of effects on people, the basic data on levels of potentially harmful emissions are essential.

We would appreciate written comments or scientific articles which will provide data relative to the following question; or suggestions of individuals in the industry to whom our inquiry should be addressed.

(1) What are the levels of x-radiation in vicinity of current models of TV receivers under normal operating conditions?

(2) What is the maximum production of x-rays under conditions of malfunction or failure of the power supply for the TV receiver?

(3) What are the levels of UHF radiation and/or sound under normal operating conditions of the TV receiver?

(4) What are the levels of ozone produced under normal operating conditions?

(5) What are the maximum possible integrated time and intensity production values for ultra sound, UHF radiation and ozone?

(6) How does the production of the above mentioned emanation vary between models of TV receivers manufactured for sale and distribution in the U.S.

Our primary concern at this time is for the rapid organization of the basic data concerning the energy characteristics and levels of production of those electromagnetic, ionizing, sound and/or potentially toxic chemical emissions from TV receivers in home use. This type of data is urgently needed before biological experimentation can be designed in an effective and efficient manner.

I will appreciate your prompt attention and reply to our request.

Sincerely yours,

JAMES C. TERRILL, Jr., *Director.*

ITEM 10

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., March 28, 1967.

Col. WILLIAM E. FROEMMING, MC,
Preventive Medicine Division, Office of the Surgeon General, Department of Army, Washington, D.C.

DEAR COLONEL FROEMMING: Colonel Alvin F. Meyer, Jr., of the Air Force Surgeon General's Office provided us with your name as a possible contact for information on the biological and behavioral effects of microwave radiations and ultrasonic sound.

The National Center for Radiological Health is presently gathering information concerning the possible health effects of both ionizing and non-ionizing radiations emitted from home television receivers. This information will be used to formulate definitive statements regarding possible health hazards and if need be, to plan research and investigational efforts to ascertain the nature of effects on people.

While we have had success in locating studies dealing with microwave intensities on the order of 10 mw/cm ^{2} and higher for acute and semiacute exposure, we have found virtually no information on effects from chronic exposure to low intensity (less than 1 mw/cm ^{2}) of microwaves and from ultransonic sound of approximately 16 kc.

We would appreciate written comments or scientific articles which will provide data relative to the above problem and/or suggestions of individuals to whom our inquiry should be addressed.

We look forward to your reply and will appreciate any help you can provide.

Sincerely yours,

LAWRENCE J. PEREZ, Jr.
Chief, Data Quality and Dose Studies Section,
Standards and Intelligence Branch.

ITEM 11

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., March 28, 1967.

Comdr. C. F. TEDFORD, MSC USN,
Bureau of Medicine and Surgery,
Code 742, Navy Department,
Washington, D.C.

DEAR COMMANDER TEDFORD: Colonel Alvin F. Meyer, Jr., of the Air Force Surgeon General's Office provided us with your name as a possible contact for information on the biological and behavioral effects of microwave radiations and ultrasonic sound.

The National Center for Radiological Health is presently gathering information concerning the possible health effects of both ionizing and non-ionizing radiations emitted from home television receivers. This information will be used to formulate definitive statements regarding possible health hazards and if need be, to plan research and investigational efforts to ascertain the nature of effects on people.

While we have had success in locating studies dealing with microwave intensities on the order of 10 mw/cm^2 and higher for acute and semi-acute exposure, we have found virtually no information on effects from chronic exposure to low intensity (less than 1 mw/cm^2) of microwaves and from ultrasonic sound of approximately 16 kc.

We would appreciate written comments or scientific articles which will provide data relative to the above problem and/or suggestions of individuals to whom our inquiry should be addressed.

We look forward to your reply and will appreciate any help you can provide.

Sincerely yours,

LAWRENCE J. PEREZ, Jr.,
Chief, Data Quality and Dose Studies Section,
Standards and Intelligence Branch.

ITEM 12

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., March 28, 1967.

Dr. SYLVAN J. KAPLAN,
Chairman, Department of Behavioral Sciences, Armed Forces Radiobiology Research Institute, Defense Atomic Support Agency, Bethesda, Md.

DEAR DR. KAPLAN: While reviewing the future agenda of seminars at the X-ray Exposure Control Laboratory, National Center for Radiological Health for which you are presenting a talk on April 28, 1967, I recognized that you possibly might be able to supply us with information regarding physiological and behavioral effect from non-ionizing radiations, namely microwave radiation and ultrasonic sound.

The National Center for Radiological Health is presently gathering information concerning the possible health effects of both ionizing and non-ionizing radiations emitted from home television receivers. This information will be used to formulate definitive statements regarding possible health hazards and if need be, to plan research and investigational efforts to ascertain the nature of effects on people.

While we have had success in locating studies dealing with microwave intensities on the order of 10 mw/cm^2 and higher for acute and semi-acute exposure, we have found virtually no information on effects from chronic exposure to low intensity (less than 1 mw/cm^2) of microwaves and from ultrasonic sound of approximately 16 kc.

We would appreciate written comments or scientific articles which will provide data relative to the above problem and/or suggestions of individuals to whom our inquiry should be addressed.

We look forward to your reply and will appreciate any help you can provide.

Sincerely yours,

LAWRENCE J. PEREZ, Jr.,
Chief, Data Quality and Dose Studies Section,
Standards and Intelligence Branch.

ITEM 13

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL,
March 29, 1967.

To: For the Record.
From: Chief, Data Quality and Dose Studies Sections, SIB, NCRH.
Subject: Minutes of Meeting Between NCRH and FCC Concerning Radiations from TV Receivers.

Subject meeting was held on February 21, 1967, at the office of Mr. Ralph J. Renton, Chief Engineer, FCC. Those in attendance were as follows:

Ralph J. Renton, Chief Engineer, FCC
Arnold Skrivseth, Assistant Chief Engineer in Charge of the Research Division, Office of the Chief Engineer, FCC.
Herman Garlan, Chief, RF Devices Branch, Office of the Chief Engineer, FCC
Julian T. Dixon, Assistant Chief Engineer in Charge of the Technical Division, Office of the Chief Engineer, FCC
George Waldo, Chief, Applied Propagation Branch, Research Division, Office of the Chief Engineer, FCC
James G. Terrill, Director, NCRH
Lawrence J. Perez, Chief, Data Quality and Dose Studies Section, Standards and Intelligence Branch, NCRH

Mr. Terrill discussed the general events which have led to renewed interest by the NCRH in possible biological effects arising from radiation of electromagnetic

energy from TV receivers and the need for basic physical data on types and levels of radiation to design biological experiments if necessary. He asked the FCC for a synopsis of their considerations of health hazards and for the basis of the standards for the radiation interferences listed in Title 41, Chapter 1, subchapter C, paragraph 15.63. Mr. Renton stated that the limits were set for controlling interference to other electronic receiving equipment and not explicitly for controlling biological effects. However, the FCC feels, based upon the field strength limits used by the military services for UHF from radar installations, that the interference limit is more restrictive than a limit based upon health hazard. They stated that the FCC did not have a formal statement or regulation to this extent. The FCC is not presently conducting or sponsoring any research on the problem of health from TV receivers.

Mr. Garlan provided several references dealing with biological effects from radar UHF and stated that the present personnel exposure limit used by the military services is 10 mw/cm^2. This limit has been in use for over 10 years. He indicated that microwave heating ovens may be a significant source of microwave exposure, both to the general population and to those employed in the maintenance and commercial operation of ovens. He also pointed out that UHF has been proposed for pest control as reported in a new release dated October 22, 1965, from the U.S. Department of Agriculture. A technical organization which has taken considerable interest in the effect of microwaves is the Medical Electronics Section of IEEE. Contact for this group is Dr. H. P. Schwan.

Mr. Waldo presented rough calculations for conversion of different units of field strengths and also comparative data for the field strengths due to both TV transmitters and receivers. He provided NCRH with two references on a survey conducted in New York City to determine the field strengths within approximately a 50 mile radius of the Empire State Building. Calculations would indicate that field strengths (from transmitters) outside of buildings are greater than the interference limit for TV receivers reduced to 10 feet, for a distance of 41 miles from a 1000 KW TV station. Mr. Renton stated that FCC does not have field strength measurements for typical TV receivers within the normal viewing distances.

LAWRENCE J. PEREZ, Jr.

ITEM 14

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
ENVIRONMENTAL SURVEILLANCE AND CONTROL PROGRAM,
Rockville, Md., April 17, 1967.

DR. MERRIL EISENBUD,
Institute of Environmental Medicine,
New York University Medical Center,
Tuxedo, N.Y.

DEAR DR. EISENBUD: Mr. Henry Rechen briefed me on your meeting with him on March 17, 1967. Your interest in investigating different forms of radiation from television sets and the possible effects on people is certainly appropriate. I understand that you are making some preliminary radiation measurements on color television sets. We are doing the same on a small number of sets in Rockville.

Mr. Terrill, Director, National Center for Radiological Health, has asked that a meeting be arranged early in May to discuss the technology and measurement techniques required in the investigation of television sets. Mr. Larry Perez is arranging this meeting and will contact you shortly regarding your attendance and the selection of a suitable date.

I hope you will be able to attend. Mr. Rechen plans to have some preliminary television radiation data to present, and we would appreciate your bringing any data that you have gathered.

Sincerely yours,

CHARLES L. WEAVER,
Chief, Environmental Surveillance and Control Program.

ITEM 15

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
BUREAU OF PREVENTION AND ENVIRONMENTAL CONTROL,
May 18, 1967.

To: Director, National Center for Radiological Health.
From: Assistant to the Director, National Center for Radiological Health.
Subject: Conference with Officials of GE Company and Others, New York City, May 17, 1967.

The purpose of this memorandum is to summarize briefly the conference held May 17, 1967 in New York City with officials of the General Electric Company. The meeting was held in conference room 332 of the State Office Building at 80 Centre Street and was attended by representatives of the New York State Labor Department and Health Department, as well as the New York City Health Department and the PHS (NCRH). The topic of discussion was the emanations of x-rays from certain models of large-screen color TV receivers that have been made and sold by the General Electric Company, and the main purpose was to learn what plans, if any, General Electric Company has to make the facts known to the public.

ATTENDEES

General Electric Company:
R. C. Wilson, Vice President and General Mgr. Consumer Electronics Div. (CED) General Electric Company, Electronics Park, Syracuse, N.Y.
G. E. Dwyer, Manager, Relations and Utilities, Consumer Electronics Div., GE Co., Electr. Pk., Syracuse, N.Y.
R. E. Christie, Gen. Mgr., Major TV Dept., GE Co., Syracuse, N.Y.
C. H. Lake, Counsel, Consumer Electronics Div., GE Co., Syracuse, N.Y.
J. D. Evans, Mgr., Employee Relations, GE Co., Syracuse, N.Y.
W. H. Meyer, Mgr., Product Service, GE Co., Syracuse, N.Y.
C. D. Houser, Relations Planning, GE Co., Syracuse, N.Y.
L. J. Bowles, Mgr., Engineering (Receiving tubes), GE Co., Owensboro, Ky.
W. H. Pickett, Mgr. Public Affairs, GE Co., 570 Lexington Ave., N.Y., N.Y.
J. W. Healy, Corporate Engineering Dept., GE Co., Schenectady, N.Y.
J. M. Alger, Mgr., Business Planning, GE Co.
Carl Braestrup, Physicist, N.Y., N.Y. (Consultant to GE Co.)
New York State Labor Department:
Dr. D. J. Messite, Asst. Director, Div. of Industrial Hygiene
Dr. Robert Swencicki, Chief, Radiological Health Unit
Dr. Francis J. Bradley, Principal Radiophysicist
New York State Health Dept.:
Sherwood Davies
H. Farkas, Chief, X–Ray Services Section
New York City: Hanson Blatz
Public Health Service:
Saul Harris, Region II
John Eure, Region II
Roger Schneider, NCRH, Rockville
Clifford E. Nelson, NCRH, OD

Mr. R. C. Wilson of GE, Vice President and General Manager of the Consumer Electronics Division in Syracuse, headed the delegation of 11 from the GE Company at this meeting and was the major spokesman. He began their presentations by stressing that the x-ray problem does not involve the black and white TV receivers, nor does it involve the 10" screen PortaColor receivers made by GE. He acknowledged that the emissions of x-rays *in a downward direction* (added emphasis) has been found to be a problem among some of the large-screen receivers that were built in the period from June 1966 to about April 1, 1967. (He asserted that the Underwriters standards require monitoring only on five sides (including the top) of TV receivers, and that the GE problem was found to be limited for the most part to the bottom of the receivers.)

Mr. Wilson asserted that this problem was first brought to his personal attention in early March 1967, although admitting that a "problem" ("a difficulty") had been perceived by company employees as early as October 1966.

Mr. Wilson reported that the problem of x-rays involved only the TV receivers with the KC chassis, and this chassis was used in about 40 different models that have been produced.

Mr. Wilson indicated that GE Company had hired three physicians as medical consultants to evaluate the risks involved, but they were not able to attend the Conference on May 17 due to previous commmitments elsewhere.

Mr. Wilson reported that there were about 110,000 receivers in possession of dealers and customers, plus about 40,000 sets still in factory warehouses. He also reported that about 4.7 million color TV sets were sold in 1966 in this nation.

Rather early in his presentation, Mr. Wilson asserted that the GE Company was not in favor of a public announcement about the problem of x-ray production from their TV receivers. He said that the medical consultant GE has retained say that no harm to humans has been done from the radiation produced and that with the "rework" program GE has started no harm will be done.

The shunt regulator tube in the KC chassis has been the problem. Most of these tubes have the designation 6EF4, and a smaller number are the 6LC6 version of the tube. These tubes are being replaced, whether in the TV receivers that have been sold or still in the hands of dealers or in warehouses or whether they are out in stores where they can be purchased as replacement tubes. The substitute versions are the 6EJ4 and the 6LH6, respectively, and these are being manufactured at a rate of about 4,000 tubes a day at the plant in Owensboro, Kentucky.

Mr. Wilson gave a number of reasons why the GE Company does not favor a public announcement about this matter. The following lists those reasons:

1. Such an announcement would create a "tremendous impact," leading to great numbers of phone calls from people who would call dealers and servicemen.
2. The phone calls and confusion would tie-up the service capability. (He asserted that the rework program will be completed faster if there is no publicity, and would be slowed by the phone calls and needless service calls).
3. The announcement could not be recalled, and once issued would have to be followed by its consequences. He felt this would cause needless anxiety among people, including those who have black & white receivers.
4. This is a big industry.
5. He fears that the announcement will lead to unfounded stories about TV risks.
6. This is an "emotional" matter.
7. Such an announcement may adversely affect industry in New York State.
8. The livelihoods of independent businessmen (small dealers and servicemen for example) may be adversely affected.

Thereupon Jack Healy was called upon by Mr. Wilson to describe the data about radiation exposures near these receivers. Mr. Healy began by acknowledging that the General Electric Company learned—after the fact—that several employees had received some radiation exposures in the factory. The problem as it relates to the general public developed when the shunt regulator tube (6EF4 or 6LC6, depending upon the date the sets were made) was placed into a sunken location in the KC chassis, thereby allowing x-rays produced by some of the tubes to escape beneath the chassis. Healy asserted that wires and condensors in the chassis as well as masonite or louvered metal structural material at the bottom of the assembled TV receivers impede, and in some cases "stop", the escape of x-rays. While thus implying that the hazard for the public at large may be remote, Healy acknowledged that a number of factory personnel were exposed to the x-rays produced by these tubes in the period from June 1966 to February 1967. This resulted their performing work on the KC chassis while the sets were on their sides, thus emitting a beam of x-rays in somewhat a horizontal manner and capable of striking the body of the worker. Healy said that his problem was uncovered by an "audit" system in use at GE, and he asserted that no injuries had been found and that no worker has alleged radiation injury.

Mr. Healy reported that he had concluded that the average exposure rate at a distance of 8 inches from the anode of the 6EF4 tubes was about 725 mR/hour, at which point the beam was about 1.7" x 0.9" in dimensions. Taking into account the number of hours that a worker would be near these sets, time and motion data, distances between the sets and the workers, and distribution of the x-ray beam over the trunk area of the workers, Healy asserted that the

maximum exposure to any worker was calculated to be about 23 R over an eight-month period of time. That exposure was calculated to have involved an area of about 3" x 8" on the body of the worker. He said that the depth dose would be about 30% at a depth of 1 cm, and would be about 1.5% at a depth of 5 cm. Healy asserted that some women, and perhaps a few men, who work on the "Carousel" section of the assembly line where certain adjustments are made on the chassis as it passes the worker at a speed of 33 inches per minute may have acquired exposures as high as 20R to a strip of skin across the upper trunk during the 8-month period before the problem was controlled at GE. (This apparently caused GE to notify the State Labor Department, in accordance with State radiation regulations. However, as yet apparently the workers involved have not been advised of the extent to which they have been exposed to x-rays).

Mr. Healy asserted that for various reasons these sets did not appear in the homes of customers until September 1966. Healy then gave reasons why GE does not consider the sets in homes to be a radiation hazard. He also commented that GE did not believe the radiation exposures among their employees to have been high enough to be a "problem." Healy also asserted that the GE Company has issued instructions that no work should be done in TV repair shops on these sets until the shunt regulator tube has been replaced. (He thus implied that the risk of overexposures to repair personnel would be minimal.)

The next spokesman for GE was Mr. John Alger, Business Planning. Mr. Alger sought to assure the audience that the risks of exposures to TV viewers were remote. He said that measurements made at the positions where people usually view the picture indicated that exposures there were less than 0.5 mR/hour, thus asserting that scatter radiation off wood and tile floors and off carpeting material was negligible. Mr. Alger mentioned, but did not dwell upon the point that in some TV receivers where the shunt regulator tube is near the side of the cabinet the adjacent radiation exposures may be in excess of the 0.5 mR/hour value that NCRP has used in its recommendations. This appears to be related to the excessive production of x-rays in a lateral direction from some of shunt regulator tubes, a matter that has led to several changes in the design of the tube and has led to enclosing the tube in a metal shield for further attenuation of the x-rays laterally.

Most of Mr. Alger's comments were about the beam from beneath the shunt regulator tube. He emphasized, as had Mr. Wilson and Mr. Healy, that the beam was quite small, and he asserted that it was directed downward and backwards.

Alger asserted that the steel plate beneath the table models was modified in January 1967 so that no louver would be open beneath the tube in question. He said that this would "stop" any x-rays that might otherwise escape if the louver were open as it had been before then. A metal plate was inserted over a portion of the masonite base of the cabinet and console TV receivers to serve the same purpose.

Alger said that the determinations of radiation near the receivers were made at the current setting for "normal brightness." He acknowledged that the current varies ordinarily from 0.5 to 1.5 milliamperes in the shunt regulator tube, depending inversely upon the brightness of the picture on the picture tube.

Mr. Alger gave the following data about the numbers of TV receivers that are known to be in use by consumers:

Category and type	*Number sold by dealers*
I. Large console (floor model) with restricted access beneath	26,580
II. Console about 10" above floor, but with decorative bar impeding access beneath receiver	30,725
III. Console about 10" above floor, without barrier to access beneath the receivers	26,050
IV. Table models	39,625

Some of the table models were sold as part of a "package" deal including a cart. Later models were sold without the cart. About 6,500 of the "table models" have been sold to hospitals, hotels, and bars. (Some of the latter may be suspended above head height, such as in some bars.)

Following, in Table I, is a tabulation of the estimates of rates of x-ray exposures at *floor* level beneath the sets that GE has sold. It should be noted that

these are estimates based upon extrapolations from data obtained from measurements made of radiation near 86 6EF4 tubes; actual data about these sets are not available.

TABLE I.—*Estimates Provided by GE Company About Levels of X-ray Exposures At the Level of the Floor Beneath Color Receivers Using KC Chassis*

Category	*Numbers of sets with listed exposure rates (in mR/hour at floor level)*
I. 26,580 sets:	
Less than 1.5 mR/hour	13,290
Average 10 mR/hour	6,645
Average 160 mR/hour	6,645
Average 840 mR/hour (2 percent)	130
II. 30,725 sets:	
Less than 1.5 mR/hour	15,360
Average 10 mR/hour	7,680
Average 150 mR/hour	7,680
Average 790 mR/hour (2 percent)	615
III. 26,050 sets:	
Less than 1.5 mR/hour	13,025
Average 10 mR/hour	6,500
Average 140 mR/hour	6,500
Average 715 mR/hour (2 percent)	52
IV. 39,625 sets:	
Less than 1.0 mR/hour	29,750
Average 20 mR/hour	9,875
Average 90 mR/hour (2 percent)	790

NOTE.—These exposures are limited to relatively small areas.

At this point Hanson Blatz of New York City inquired what may be the maximum level of radiation directly beneath some of the sets, and Mr. Alger acknowledged that the level may be as high as 10,000 mR/hour from data that GE has obtained up to now. This was contrasted to the limit of 2.5 mR/hour at the surface that Underwriters Laboratory has been using up to now for the five sides including the top of TV receivers. (Note also the NCRP recommendation limiting the radiation to 0.5 mR/hour at a 5 cm distance from any surface.)

Sherwood Davies of the New York State Health Department inquired about what means are used within the TV industry to police itself. Mr. Wilson asserted that the Electronics Industries Association (EIA) has been active in this field. (I commented to the group that our contacts with EIA did not lead us to believe that EIA has been very effective along these lines up to now.)

Mr. W. H. Meyer, Manager of GE's Product Services, then described the "rework" program that GE has undertaken for these sets. He said the 6EF4 tube is being replaced by 6EJ4, and the 6LC6 is being replaced by 6LH6. He said the Owensboro, Ky. plant is working overtime to produce the tubes at a rate of 4,000 a day. He said that 60,000 tubes had already been shipped to replace the suspect tubes, and he said that 15,000 sets had already been corrected.

Mr. Meyer asserted that any publicity about the TV sets would have the effect of seriously slowing the "rework" program that GE has started. He then listed the ways that GE feels it can locate the sets (through warranty cards, service contracts, dealer sales records, credit corporations, etc.). He said he believes that nearly 100 percent of the sets will be corrected by the target date of July 31, 1967. The sets are known to be distributed as follows:

Dealers and customers	111,615
Distributors' stocks	26,548
Factory stocks	8,213
Canada and Decatur plant	7,832
Total	154,208

The "rework" program is coordinated through the managers of 31 districts across the nation. (The district managers have been told that this program involves x-ray problems with the suspect tubes, but as yet this fact has not been announced to lower levels of personnel in the GE organization.)

Meyer said that the table model color receivers and the consoles where access beneath is unimpeded (categories III and IV described elsewhere in this report) have been given priority for correction in this program. It is expected that 70% of the sets will be corrected by franchised GE dealers and/or their subcontractors, and that 30% will be serviced by GE servicemen.

Meyer said that 18,000 6EF4 and 5,000 6LC6 tubes had previously been distributed for use for replacements, and that a program is underway to "freeze" these tubes in stock and replace them with the approved versions (6EJ4 and 6LH6, respectively).

Mr. Meyer says that the tubes made at Owensboro are being shipped by air express to the 31 districts. He implied that the local airline has started special service to handle these shipments.

In answer to a question by Mr. Harris about the radiation safety program involved in checking the new tubes, a GE spokesman indicated that at present a sampling program is being operated to test some of the tubes weekly to assure that the new tubes do not emit excessive levels of x-rays.

Mr. Meyer said that GE will pay all expenses involved in correcting the TV sets, and the consumer will not be expected to pay for the service or the replacement tube.

Mr. Wilson then summarized the views of GE that it is doing a good job of correcting these sets efficiently and that 100% correction is expected by July 31. He restated his objections to publicity.

There was then an opportunity for questions from the audience. One question from the New York State Labor Dept. involved how many workers at GE had been exposed to x-rays. GE said that about 266 people may have been exposed, all at the Syracuse plant.

Mr. Blatz commented that he felt that the possibility of injury was rather remote, but he felt that GE should make a public announcement about this matter. He asked whether GE feels that this matter will never "leak out." Mr. Wilson restated his reasons for opposing publicity.

Mr. Blatz said that he has already prepared a statement that his staff should use if a question arises about the special risks from GE TV sets, and the statement will acknowledge that there is a problem with the GE sets.

Dr. Bradley of the NY Labor Dept. asserted his views that GE should at some time report this matter to the public, later if not now. Mr. Wilson did not agree.

Blatz told Wilson that GE and PHS should draft statements that can be used. I said that some of us from the PHS and GE had done just that on May 16 and that GE has copies. I commented that the safety for the public has not yet been established.

Mr. Wilson then began to indicate his willingness to work further with the PHS about drafting press statements that might be used if the need should arise. I suggested that he be in contact with Mr. J. Arthur Lazell, Public Information Officer for NCRH, for this purpose.

Mr. Blatz asked Mr. Wilson for reasons why publicity would slow down the correction of sets. Mr. Wilson gave several reasons (false alarms, dealers swamped with calls, busy phones, etc.).

I read to the audience the four points covered in our joint statement of May 16 when we met with two of GE's public relations personnel. This says that PHS is prepared to release a statement if the occasion arises.

Sherwood Davies asserted that he believes the matter should be handled at the Federal level of government, rather than have 50 States attempt to regulate the TV industry.

As the meeting drew to a close the following decisions were reached:

1. PHS and GE will continue to formulate statements that might be used if the occasion demands.
2. GE to renew contacts with PHS (maybe HEW) to learn reasons why we believe GE should make this matter known to the public.
3. PRS will notify the States if action is taken.
4. GE will let PHS know if GE decides to publicize this matter.
5. Health agencies in New York and PHS will try to let GE know if they decide to publicize this matter.

The meeting adjourned at 1 pm.

ITEM 16

STATEMENT BY JAMES G. TERRILL, JR., DIRECTOR, NATIONAL CENTER FOR RADIOLOGICAL HEALTH, OF MAY 18, 1967, CONCERNING X-RADIATION FROM CERTAIN GENERAL ELECTRIC COLOR TELEVISION RECEIVERS

The General Electric Company recently advised us that it had started a modification program involving rework of certain large-screen console and table model color television receivers. I understand that the problem was in the high voltage power supply and does not involve the picture tube.

General Electric representatives informed us that the modification program was started because the Company found higher than desirable levels of x-ray production were created during the operation of some models of these color television sets in tests by the Company. This emission is directed through the bottom of the set, toward the floor, and not toward the viewer.

Studies made by the National Center for Radiological Health of several television sets during the past six months did not give rise to concern. All of the sets tested gave off radiation well below the limits (.5 mR/hour) recommended by the National Council for Radiation Protection.

The General Electric Company stated black-and-white or small-screen "PortaColor" sets are not involved. It identified the sets about which it is concerned as certain large-screen color TV receivers manufactured between June 1966 and February 1967, and purchased after September 1, 1966. The Company advised us that its entire distributor-dealer service organization has been mobilized to contact owners of such television sets to arrange for the modification, and that modification will be made without charge to the customer.

As of now there is no evidence in the hands of the NCRH to suggest that any television receivers manufactured by the General Electric Company, or television sets made by other companies, have excessively exposed viewers of television sets.

ITEM 17

GENERAL ELECTRIC COMPANY STATEMENT

SYRACUSE, N.Y., *May 18, 1967.*

General Electric's Major Television Department has announced a program to modify some of its large screen color television sets. The program is being carried out on a national basis and should be completed by July 31. Modification involves replacement of the regular tube and adjustment of the power supply. Quality control tests indicate that some of these sets produced between June 1966 and February of this year may emit soft x-radiation in excess of desirable levels. When present, this emission is directed toward the floor and not toward the viewer. The picture tube is not involved.

Nationally recognized radiological health experts have confirmed preliminary Company findings that emissions have not been sufficient to cause harm to viewers. However, in view of its 26-year effort in providing customers with reliable and safe television receivers, the Company has a program well under way to make appropriate changes in the models involved. These changes will resolve any problems that may exist as well as materially improve performance and reliability.

Approximately 90,000 of these models have been sold. Sets currently available will be modified before sale. For sets already sold, General Electric service representatives are contacting customers who purchased these specific models manufactured since last June and will make the modifications without charge and at the customers' convenience.

Already identification is being achieved through mobilization of General Electric's entire distributor-dealer organization. Factory records, dealer sales records, warranty cards, service records and contract and finance records are among the many sources being used to derive this information. It is estimated that the program will be complete by the end of July. Set owners may wish to contact their dealer or service man if their set has not been modified by that time.

No black-and-white sets, no PortaColor sets and no sets purchased before June 1966 are involved in the modification.

ITEM 18

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
May 23, 1967.

To: Director, National Center for Radiological Health.
From: H. L. Fisher and R. H. Schneider, National Center for Radiological Health.
Subject: May 11, 1967, New York City meeting between representatives of the National Center for Radiological Health (NCRH) and the General Electric Company (GE) concerning television x-ray emissions.

This memorandum contains a summary of items discussed at a meeting between GE and NCRH representatives held Thursday afternoon, May 11, 1967, at the SkyWay Motel in Queens, New York. The purpose was to review and discuss the X-ray exposure data for certain model GE color television receivers, the status of GE's corrective efforts to date, and approaches for public release of information concerning the X-radiation hazards.

ATTENDEES

John M. Alger, Business Planning, GE
Ronald Bales, ESCP, NCRH
Herbert Barnhart, Measurements Laboratory, GE
Merrill B. Eisenbud, Professor, New York University
Jack D. Evans, Employee Relations, GE
Henry L. Fisher, SIB, NCRH
Jack W. Healy, Engineering Services, GE
Clifford E. Nelson, OD, NCRH
Roger H. Schneider, ESCP, NCRH
James G. Terrill, Jr., Director, NCRH

The following background information provides a prologue to the May 11 meeting.

The NCRH first became aware of a potential X-radiation hazard associated with some models of GE television receivers in early 1967 when it obtained access to information from an investigation by the New York State Department of Labor. The source of the emissions was found to be the shunt regulator tube mounted on a "KC" model chassis which is used in the construction of various model color television receivers. The chassis containing openings in the vicinity of the regulator tube which allowed X-radiation produced by the tube to escape beneath the chassis.

In addition, exposure rates higher than desirable were found in the vicinity of a receiver operating under abnormal conditions of high line voltage and low picture tube current. The levels were estimated to be as high as 10 to 20 mR/hr on the side of the set under these conditions. Beneath the set, the values were expected to be about five times higher, i.e., 50 to 100 mR/hr.

On April 13, at the invitation of the GE Company, representatives of the NCRH and the New York State Department of Labor made a survey of corrected models on the assembly line at the GE Syracuse Plant. The survey results indicated X-radiation levels which were within acceptable limits. The values ranged from 0.00 to 1.86 mR for 1 hour exposure of TLD dosimeters placed on the chassis surface at points near the regulator tube.

The National Council on Radiation Protection and Measurements (NCRP) adopted a position in 1960 regarding the maximum permissible exposure rate from television receivers. The NCRP recommended "that the exposure dose rate at any accessible point 5 centimeters from the surface of any home television receiver shall not exceed 0.5 mR/hr under normal operating conditions." On April 24th, the NCRH received word from the New York Regional office that much higher X-radiation exposure rates were possible from the faulty receivers than previously reported by the GE Company. The X-ray exposure levels at 6 inches beneath the chassis of a certain GE table model set might be as high as 200 to 300 mR/hour rather than the earlier value of 50 to 100 mR/hour.

The meeting on May 11 was an outgrowth of communications with GE to arrange for a program of corrective action following this disclosure.

Mr. Jack Healy, Health Physicist for the GE Company, headed a delegation of four from the GE Company at this meeting. He began by stating that about 20 percent of the GE large screen 19-, 20-, 22- and 23-inch color television sets which were manufactured between June 1966 and February 1967 emit a (narrow) beam of X-rays in the downward direction. The source of these X-rays is a shunt regulator tube which is used in the sets to maintain a constant high voltage for the second anode of the picture tube. Of the three types of shunt regulator tubes, 6EF4, 6EA4, and the old type 6LC6, being used in these sets, 86 of the 6EF4's have been tested. About 20 percent were defective in that there was sufficient misalignment of the anode and cathode shields to allow radiation from the anode to bypass the cathode shield and be emitted from the bulb.

The construction of the shunt regulator tubes is shown diagrammatically in an attachment. Electrons are emitted from the cathode, passed through a potential of 25 Kv and strike the anode resulting in the generation of X-rays. If the cylindrical anode and cathode shield are slightly misaligned, the X-rays may escape from the tube at the cathode end. The regulator tubes are mounted vertically on the chassis and it has been found by GE that the X-rays are emitted down and at an angle of 17° to 31° from the vertical.

In models that preceded the use of the KC chassis, the regulator tube was mounted on the chassis. The chassis then completely absorbed these X-rays. In the KC chassis, the regulator tube was mounted in a well which was open on three sides, except for obstructions of electronic components and at angles less than about 17 from the downward direction, permitting the X-ray beam to emerge from the bottom of the chassis.

The beam size from most tubes was found to be about 2¾" by ¾" at a distance of 8" from the anode. Although the operating voltage of the shunt regulator tube is 25 Kv, the effective energy of the X-ray beam is about 17.5 Kv. That this is a very soft X-ray beam is indicated by the transmission data. GE reported that one centimeter of water transmits 30 percent, 5 centimeters of water transmits 1.5 percent and one centimeter of a meat product transmits 17 percent.

Measurements of the exposure dose rate in the beam from the regulator tubes were made with a Victoreen 440RF or Victoreen 208AR chamber in the GE laboratories. These chambers were calibrated with X-rays and Cobalt-60 gamma rays. To enable measurement of high exposure rates, the survey instruments were calibrated both with and without an attenuator screen. Exposure rates of from 300 to 4200 mR/hr in the beam at a distance of 8" from the anode were measured from 11 of the 86 6EF4's tested. The remainder produced levels down to a few mR/hr. When this beam was scattered off of ¾" plywood or asphalt tile at a distance of 10" from the anode, the exposure rates in the scattered beam were 10 to 15 mR/hr. Measurements of the side radiation from all shunt regulator tubes surveyed indicated an exposure rate between 1 and 10 mR/hr at a distance of 6" from the tube. The side radiation from the HV rectifier tube, at a normal 25 Kv, is about 1 mR/hr. At a voltage 4 Kv greater than normal the exposure rate from the rectifier tube was between 5 and 10 mR/hr.

There were many models in which the KC chassis was used. The floor model consoles are sufficiently low that the emerging X-ray beam strikes the floor underneath the set. One transportable model, with a 19-inch picture tube, was sold with a cart which supported it about 16" above the floor. This model had a metal case with ¼" wide louvers stamped into the bottom. If such a set contained a defective regulator tube emitting a beam of X-rays, and if the louvers were positioned so that the beam could emerge from the set, then the beam would generally strike the floor a few inches in front of the cart on which the set was mounted.

Approximately 154,000 KC chassis were manufactured and equipped with either a 6EA4 or a 6EF4 shunt regulator tube. The distribution of the KC chassis from factory warehouses was frozen on April 10, 1967. At that time 16,000 were in two factory warehouses, 26,000 were in district warehouses, and 111,000 were in dealers' stocks or customers' homes. It is estimated that about 82,000

were in private use. The critical group appears to be the 19-inch transportable model receiver, 36,000 of which were produced with the KC chassis.

In October 1966 GE discovered the existence of this problem. In January 1967, GE eliminated the louver under the shunt regulator tube in the bottom of the transportable model and began studies of the various shunt regulator tubes in use. The misalignment of the anode hoods in some 6EA4 and 6EF4 tubes was discovered in a sampling of tubes surveyed at the time. The ten type 6LC6 tubes which have been tested so far by GE have been found to emit no excessive quantity of X-radiation through the bulb wall. Metal bottom plates were installed in all wooden cabinets after January 23, 1967. All receivers produced since February 9, 1967 were equipped with shunt regulator tubes having rolled lower edges on the anode hoods (improved type 6LC6 with sandblasted dot on bulb for identification). About that time metal shields were added around the tubes to absorb all side radiation and metal shields were installed under the shunt regulator sockets. Metal shields were also placed around the high voltage rectifiers and metal bottoms were installed on all chassis manufactured since March 1, 1967.

On April 19, 1967, distribution of the uncorrected KC chassis was halted and the 6EF4, 6EA4 and the unmodified 6LC6 tubes were recalled from dealers' stocks. The tubes must be returned within 90 days for credit to be received. GE has announced to its dealers, service departments, and to private service organizations a program of "retro-fitting" the KC chassis for "improved performance and reliability." The GE district managers have been alerted to the radiation problem and instructed to pursue its solution. The retro-fit consists of replacing the 6EA4 or 6EF4 with a 6EJ4 and replacing the 6LC6 with the 6LH6, and attaching a label near the regulator tube socket which states: "Warning, replace regulator tube only with 6EJ4 or LH6," and attaching another label to the back of the set which indicates that the retro-fit was performed. Non-GE servicemen are given a labor credit as a bounty when the obsolete shunt regulator tube is returned to GE.

There are several avenues by which KC chassis in the homes of consumers are being tracked down for retro-fitting. Approximately 70 percent of all GE television sets are sold by regular dealers who have their own service departments or contract service. The sales records of these dealers record the model designations of the sets which they have sold. About 40 to 50 percent of the new set warranty cards are returned to GE. These have the customer's name and address and the model designation of his set. GE credit corporation finances about 30 percent of the sales of GE color televisions and it is their practice to keep records of customers' names, addresses and model designations. A significant fraction of color television customers buy one year service contracts on their sets. All of these sources of information are being exploited to trace the private owners of KC chassis and to inform them that GE has made a minor change in design to improve reliability and performance and that this change will be made in their homes at no cost to them as soon as possible. GE is underwriting the expense of the clerical work required to search dealers' records for the names and addresses of KC chassis owners and to confirm the disposition of the KC chassis which have been received by each dealer.

Mr. Terrill voiced an opinion that GE should make a public statement about the radiation problem associated with their color TV sets, and explain the corrective action being taken. In a similar manner he felt the NCRH should prepare a statement on this particular problem. In a broader sense the EIA and NCRH should work together in examining X-ray emissions from TV devices. In about a year and a half we should have a seminar and produce a handbook on the X-radiation problem from HV devices for consumer product designers in the electronics industry. He also pointed out that the National Academy of Sciences and the National Academy of Engineering should be invited to contribute in the areas of bioeffects from X-radiation and other emissions as well as with television design considerations.

The meeting was concluded with the consensus that GE was vigorously pursuing a program of correcting the defective sets, but should attempt to have all sets corrected by July 1967.

(Prepared by: Henry L. Fisher, Roger H. Schneider, Richard F. Wromble.)

ITEM 19

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH,
Rockville, Md., May 24, 1967.

MR. ROBERT WILSON,
Vice President and General Manager,
Consumer Electronic Products,
General Electric Company,
Syracuse, N.Y.

DEAR MR. WILSON: Our activities during the past few days relative to color television have been quite hectic, but I sincerely hope that the actions taken will prove to be in the best interests of the public.

Questions have arisen relative to the exposure of people from the direct beam, transmission through the floor, and scattered radiation. Therefore, I think it would be wise to accept your verbal offer to loan us some sets to test these factors. For this purpose a transportable model and a console model with legs should be sufficiently representative. With these sets we should be able to develop sufficient variations in the testing procedures to answer most questions about exposures, if you can provide enough tubes to provide a spectrum of the sources.

I would appreciate receiving an interim report on the effectiveness of your rework program and a final report on the success of the program as soon as possible after after your scheduled completion date of July 3, 1967.

At this time I want to thank you and your staff for supplying specific factual information on the radiation levels, and distribution patterns so all parties concerned can expend a maximum of their energies on effecting correction in the minimum period of time.

Sincerely yours,

JAMES G. TERRILL, Jr., *Director.*

ITEM 20

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
OFFICE OF THE SURGEON GENERAL,
Rockville, Md., May 29, 1967.

MR. FRED J. BORCH,
President, General Electric Company,
New York, N.Y.

DEAR MR. BORCH: This letter is intended to convey the appreciation of the Public Health Service for the cooperation of the General Electric Company in keeping us informed regarding your efforts to locate and correct X-ray leakage in certain color television sets manufactured by the General Electric Company.

We would like to have additional advice concerning your success in locating and correcting television set components and parts now in the hands of the public. Of specific interest are (1) the number of General Electric sets manufactured and distributed with defective tubes; (2) the number of General Electric sets corrected and now in public use; and (3) the estimated number of sets of other manufacture which have been supplied with defective tubes by the General Electric Company through original purchase or replacement, which may be a source of X-ray leakage.

A matter of mutual concern will be the efforts undertaken to develop detailed information on (1) the character and amount of X-radiation emission from sets containing the defective tubes; (2) the effectiveness of the corrective measures including tests of replacement components and shielding; and (3) home viewing habits and factors related to possible exposure of the public.

I hope there will be continued close liaison between our technical staffs in our efforts to achieve effective correction of the X-radiation leakage from color sets in public use.

Sincerely yours,

WILLIAM H. STEWART,
Surgeon General.

ITEM 21

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
Syracuse, N.Y., June 2, 1967.

Re: NCRH: OI.

Mr. JAMES G. TERRILL, Jr.,
Director, National Center for Radiological Health, Department of Health, Education, and Welfare, Public Health Service, Rockville, Md.

DEAR MR. TERRILL: Thank you very much for your letter of May 24, 1967.

In order to facilitate your making the tests desired, we are forwarding to you two transportable models and two console models. It is necessary to send four television sets because of the fact that the NEF4 tube and its successor, the 6LC6 tube, have been used in the same models, but are not interchangeable. Accordingly, you will receive a M258CWD transportable model and a M970CWD console model with an identifying number of EN376 or lower, both of which will take the NEF4 tube or its replacement under our modification program, i.e. the 6EJ4A. Also you will receive a transportable model M258CWD and a console model M970CWD with an identifying number of EN377, which will take the 6LC6 tube or its replacement under our modification program, i.e. the 6LH6A.

In the interest of furnishing enough tubes to provide a spectrum of sources, we would propose to supply you with 100 of the 6EF4 tubes, 100 of its successor, the 6LC6 tube and 10 each of their replacements under the modification program, i.e. the 6EJ4A and 6LH6A respectively. We anticipate shipping the television sets and the tubes to you through our Washington office this forthcoming week. We have arranged for them to contact you for specific delivery instructions upon their arrival. To the best of our knowledge, these should provide you with a representative spectrum of sources. We might point out that you will probably find less of a variation in the 6LC6 tubes in contrast to the 6EF4 tubes; such a finding would be consistent with our results.

With respect to our rework program, we will be very happy to provide you with a final report concerning the success of the program as soon as possible after our scheduled completion date which you will note is July 31, 1967. By way of interim report, as of May 31 we have modified approximately 11,300 sets going to or in the consumer's home. The number of sets being modified has been increasing under the program and we have reason to believe that our effectiveness will likewise increase at a greater pace between now and the projected completion date.

I wish to assure you that you have our continuing cooperation with respect to this matter and as you know, we consistently have attempted to act in a responsible manner with the best interests of the public in mind.

Very truly yours,

R. C. WILSON,
Vice President & General Manager,
Consumer Electronics Division.

ITEM 22

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL,
June 7, 1967.

To: Regional Representatives, NCRH, Regions I–IX.

From: Chief, Compliance and Control Branch, National Center for Radiological Health.

Subject: Basic information: Color TV problems.

Enclosed you will find a sufficient quantity of each of three statements concering the above subject for distribution within your Region. These statements are:

1. General Electric Company statement—May 18, 1967
2. James G. Terrill, Jr., statement—May 18, 1967
3. Summary Statement Regarding the Status of X-ray Radiation from GE Color Television Receivers by James G. Terrill, Jr., Director, National Center for Radiological Health, on June 6, 1967.

The National Center for Radiological Health has begun to receive inquiries from individuals expressing concern and asking the Center's advice about the

use of their color TV sets, disclosing a variety of relationships between the sets and the persons involved. I am certain that similar inquiries are being received by State and local health departments as well.

The Center has made its own investigation of excess X-radiation from some GE color television sets. Some of the offending electronic tubes tested produced X-radiation levels considerably above the limit of 0.5 mr/hr recommended by the National Council for Radiation Protection and Measurement. Our inquiry to date confirms that the excessive X-radiation beam is directed downward, through the bottom of the set. While most TV receivers are located close to the floor, we know some television receivers are in raised positions at varying heights above the floor level. This is true in homes where children may sit close to sets, as well as in places of business where adults may be in close proximity to the bottom of such receivers.

The Director, NCRH, requests that one copy of each of the above statements be sent to each State radiological health program director, along with a transmittal letter which should include the following:

1. A suggestion that the health department contact the GE TV Sales and/or Service Agency or other local TV Service Agencies which repair GE color TV sets and impress on them the need to place requests for checking or modifying the GE sets in question on a high priority in accordance with the statement made by the GE Company on May 18, 1967.

2. In case of individual inquiry by persons who have or suspect they have excessive exposure situations, we suggest that States assist the inquirer by:

a. Recommending that viewers remain at least ten (10) feet from set while watching TV.

b. Suggesting that they contact the GE Sales or Service Agency or the TV Repair Service which handles GE color TV's, for advice and modification, if necessary.

c. Advising the inquirer to turn off the set and not use it until it is checked and modified, if needed.

These are simple suggestions, but they are the kind which people will understand. They will do much to allay any anxiety that they may have.

Mr. Terrill desires that this material be sent out to States at the earliest possible moment. Thank you!

HOWARD L. MCMARTIN, M.D.

ITEM 23

GENERAL ELECTRIC COMPANY,
Syracuse, N.Y., June 9, 1967.

LEO J. GEHRIG, M.D.,
Acting Surgeon General, Department of Health, Education, and Welfare, Public Health Service, Bethesda, Md.

DEAR MR. GEHRIG: Mr. Fred Borch has asked me to respond to your letter of May 29 to him with respect to X-ray leakage in certain color television sets.

I too wish to thank you for the expression of appreciation with respect to General Electric's cooperation with the Public Health Service. As Mr. Borch indicated, I have been in close touch with Mr. James Terrill, Jr., Director of the National Center for Radiological Health, as have others on our technical staff. It is certainly our intent to continue this close liaison in the manner you suggest.

In response to your three questions concerning our success in locating and correcting television set components and parts now in the hands of the public, we are pleased to submit the following:

1) Only a fraction of the large screen color television sets manufactured during the period June 1966 to February 1967 has a bottom leakage that would require modification inasmuch as it is not uniform either in occurrence or intensity. However, we decided to modify all of the sets produced during that period. The total was 154,208, out of which 42,593 were under our direct control and modification could be simply effected. Out of the remaining 111,615, approximately 22,000 are in dealer stock and are being modified before installation. The remaining number approximating 90,000 are in customers' homes and are involved in the modification program that we announced. Incidentally, in order to avoid any misunderstanding you might wish to note that the tubes used are not defective, but are high quality tubes which met all existing industry specifications and standards. Unfortunately,

the particular color television sets involved do not provide sufficient shielding to fully contain the downward beam when it occurs.

2) As of June 7th, a conservative count of those now officially reported to have been corrected in public use was 17,968. Actually, our information is that the number is greater due to a lag in reporting to us and we have every reason to believe that we will reach our target by July 31, 1967.

3) No sets of other manufacturers use the tubes involved. Any of such tubes supplied by us to other tube distributors are for use in General Electric sets and are not compatible with sets of other manufacturers.

With respect to the other three items mentioned in your letter, please note that we have recently made arrangements to supply Mr. Terrill with four television sets and a quantity of tubes for testing purposes which will serve to develop the detailed information that you indicated is a matter of mutual concern. We would propose to continue working closely in this fashion with Mr. Terrill and will periodically apprise him of our progress in locating and correcting television sets now in the hands of the public. We would also be pleased to submit directly to you a final report concerning the progress of our modification program subsequent to our target date of July 31st if this is consistent with your wishes.

Again thank you for your letter of May 29 and you may rest assured that the Public Health Service will continue to receive our cooperation.

Very truly yours,

R. C. WILSON, *Vice President.*

ITEM 24

Report titled "X-ray Emission From Shunt Regulator Tubes for Color Television Receivers", dated June 1967. (In committee files.)

ITEM 25

MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
July 3, 1967.

To: Director, NCRH.
From: Richard F. Wromble, Staff Engineer, DAOS, SIB.
Subject: Conference with representatives of the Electronic Industries Association, June 29, 1967.

A conference, to review and discuss the initial Electronic Industries Association (EIA) report on X-ray emissions from television receivers, was held on June 29, 1967, at the Chapman Avenue facilities of the National Center for Radiological Health (NCRH) in Rockville, Maryland.

The following individuals attended:

Industry Representatives:
- For EIA/Industry Steering Committee:
  - Mr. B. S. Durant, Radio Corporation of America
  - Mr. A. E. Allen, Philco-Ford Corporation
  - Mr. Walter Fisher, Zenith Corporation
- EIA/Industry Counsel:
  - Mr. E. W. Henry, Arnold & Porter, Attorney
- EIA/Industry Ad Hoc Committee:
  - Mr. J. L. Sheldon, Chairman, Corning Glass Works
  - Mr. H. O. Wood, Philco-Ford Corporation
  - Mr. C. E. Coon, EIA
  - Mr. L. M. Rundlett, EIA

NCRH Representatives:
- Mr. J. G. Terrill, Jr., Director
- Dr. R. T. Moore, Deputy Director
- Mr. J. Arthur Lazell, OI
- Dr. H. L. McMartin, CCB
- Mr. D. J. Nelson, Jr., OCD
- Mr. Henry J. L. Rechen, SSL
- Dr. Harold Stewart, XECL
- Mr. Roger H. Schneider, SSL
- Mr. R. F. Wromble, SIB

The conference was opened by Mr. Terrill with a prefaced remark that all materials and information brought out in the meeting will be considered public information. The NCRH is presently experiencing pressures from the Congress and other areas for release of information on television emissions. While NCRH would prefer to await development of a more complete analysis of the emissions data, the accelerating pace of activities requiring this information may not permit such a thorough study at the present time.

Mr. Henry outlined the contents of the EIA reports. He stated that, as the title indicates, this report is an interim report which does not contain all of the information requested by NCRH. As additional data and/or analyses becomes available, these will be released in subsequent EIA reports. The first report is in three parts: a letter of transmittal, a report of the survey procedures and findings, and copies of the basic data sheets received from the 20 television receiver manufacturers represented in the survey.

Mr. Terrill took exception with the second paragraph of the letter of transmittal which he said misrepresented the activities of the NCRH. The National Center has not conducted what could properly be termed "studies" on the x-radiation exposure levels from color television receivers. Only a limited number of sets (less than 50) have been examined, to date, by the NCRH. The work has been primarily directed toward development of instrumentation techniques for measurement of the soft X-rays emitted by TV receivers. The exposure data obtained in conjunction with this work can not be considered as indicative of the actual exposure rates associated with either the color television receivers measured or those in general usage.

The question was raised as to the Underwriters' Laboratories (UL), input into the interim report. Mr. Wood pointed out that UL is one of the agencies that participated in making the measurements included in the report. He said that, in addition to data reported, UL tests a prototype of each TV receiver for fire, shock and X-ray hazards. To receive the UL seal of approval, the set must meet the UL specifications for each of these hazardous agents. In the case of X-rays, the UL standard is 2.5mR/hr at the outer surface of the set.

Dr. Sheldon discussed the summary of measurements starting on page 6 of the Interim Report. He questioned the health significance of the low exposure levels from the three types of emissions measured. He pointed out that the highest X-ray exposure rate detected, 27.00 mR/hr, was for an 18 inch receiver of Japanese manufacture.

It was estimated, by the EIA, that over 25,000 individual measurements were made in preparation of the interim report. Only the maximum measured X-ray exposure rate for the reported operating mode are indicated on the data sheets. Where more than one set was surveyed, the maximum reported level is the highest value found for any one of these sets when tested under the same operating conditions.

The Director indicated that the NCRH desires to work with EIA in development of a body of information pertaining to the broad aspects of the TV emissions problem. He distinguished this from NCRH's present involvement with the General Electric Company in which the Center's primary concern is for immediate and effective correction of the defective receivers. Mr. Terrill suggested that this distinction be indicated in all correspondence and contacts between the two organizations until the GE problem has been remedied.

The NCRH technical staff plans to provide the EIA with a critical review of the interim report and will indicate those areas where additional information would be desirable. The NCRH does not plan to attempt an evaluation of the interim report results but should questions arise, particularly from Congressional quarters, they will be referred to the EIA Ad Hoc Committee on Radiation Hazards.

Mr. Terrill pointed out the present need for exposure data in industrial and service environments. He questions the adequacy of shielding for assembly line, testing, and servicing personnel. He proposed that the EIA arrange to evaluate the radiation hazards to workers in such areas.

The meeting ended with Mr. Terrill's assurance that NCRH comments would be received shortly by the EIA Ad Hoc Committee. He expressed appreciation for the cooperation and materials provided by the EIA and reiterated NCRH's desire to continue its association with EIA in the collection of emissions data.

RICHARD F. WROMBLE.

ITEM 26

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
PUBLIC HEALTH SERVICE,
OFFICE OF THE SURGEON GENERAL,
Rockville, Md., July 4, 1967.

Mr. R. C. WILSON,
Vice President, General Electric Company,
Syracuse, N.Y.

DEAR MR. WILSON: Thank you for your letter of June 9 and for the information which it contained. We appreciate having your confirmation that there were about 90,000 General Electric television receivers in customers' homes involved in your company's modification program as a result of x-ray emissions from certain General Electric color television sets. We note also that you estimate at least 17,968 of the sets in public use had been corrected as of June 7, that the electronic tube involved in the x-radiation is not used in sets manufactured by other companies, and that tubes provided other tube distributors for use in General Electric receivers are not compatible with sets of other manufacturers.

We would like to receive a final report on the progress of the Company's modification program as soon as possible after the target completion date of July 31, 1967. We will appreciate receiving any interim progress reports that are available.

Sincerely yours,

WILLIAM H. STEWART,
Surgeon General.

ITEM 27

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, PUBLIC HEALTH SERVICE,
NATIONAL CENTER FOR RADIOLOGICAL HEALTH, ROCKVILLE, MD.

Press release, July 21, 1967

About 9,000 General Electric large-screen color television receivers which may be leaking excessive amounts of X-radiation have not been located for modification despite intensive search by the company's distributor-dealer service organization, Surgeon General William H. Stewart of the Public Health Service reported today.

"Tests made in laboratories of the National Center for Radiological Health suggest that a large percentage of the receivers not yet located for correction by the company leak X-rays at levels representing a potential hazard to human health," Dr. Stewart said.

Corrections have been made in more than 90 percent of the approximately 112,000 receivers which were in the hands of dealers and customers when the company discovered that some sets were leaking X-rays from shunt regulator tubes, Dr. Stewart said.

The receivers in question are large-screen color consoles and table models purchased between September 1, 1966 and May 31, 1967. Small-screen color and black and white receivers are not involved.

"Persons who purchased their large-screen General Electric color television receivers between September 1, 1966 and May 31, 1967 and whose sets have not been corrected, should disconnect the sets and immediately notify a General Electric dealer or service agency or, in the event neither can be reached readily, their State or local health departments," Dr. Stewart said.

General Electric's entire distributor-dealer organization and about 80,000 independent service men were mobilized to locate and correct receivers without charge in owners' homes as soon as company tests revealed X-ray leakage. An incentive program was initiated to accelerate the set correction effort.

"We feel that the company has done an outstanding job in correcting these sets," Dr. Stewart said.

The National Center for Radiological Health has tested 185 tubes of the type associated with the radiation. A major portion of the tubes was found to emit X-rays which could produce exposures in excess of limits recommended by the National Council on Radiation Protection and Measurements.

Distribution of X-radiation measurements from shunt regulator tubes for color television receivers

Radiation level [1]	Test sample, 6EF4 tubes		Test sample, 6LC6 tubes		Total test sample	
	Number of tubes	Percent	Number of tubes	Percent	Number of tubes	Percent
Less than 0.5 [2]	4	4	38	43	42	23
0.5 to 5	28	29	35	39	63	34
5 to 50	30	31	16	18	46	25
Above 50	[3] 34	36	0	0	34	18
Total	96	100	89	100	185	100

[1] Values shown are readings in milliroentgens per hour taken 9 in. below the base of the tube by an end window geiger probe calibrated to X-ray energies. Tubes provided by the General Electric Co.

[2] In July 1960, the National Council on Radiation Protection and Measurements recommended "that the exposure dose rate at any readily accessible point 5 cm. from the surface of any home television receiver shall not exceed 0.5 mr. per hour under normal operating conditions."

[3] 16 of 34 tubes emitted greater than 500 mr. per hour; 11 tubes emitted between 500 and 5,000 mr. per hour; 4 tubes emitted between 5,000 and 50,000 mr. per hour; 1 tube emitted greater than 50,000 mr. per hour. Results obtained using calibrated film technique.

Mr. Moss. Mr. Jarman?

Mr. JARMAN. Mr. Chairman, I have two brief questions. Mr. Terrill, how many people have you working at the National Center for Radiological Health?

Mr. TERRILL. Total?

Mr. JARMAN. Yes, sir.

Mr. TERRILL. Roughly 800 through appropriated funds and another 200 under contract with the Atomic Energy Commission.

Mr. JARMAN. Then the other question would be how many people have you had working in this field of the possible excess radiation problem in color television sets.

Mr. TERRILL. It is gradually increasing from a staff study to a point where I guess we are probably at this time spending at the rate of over $300,000 a year because they also include people now who are working on possible biological effects.

Mr. JARMAN. Could you estimate the number of people involved in this program?

Mr. TERRILL. I would say as of today in terms of professionals and technical support personnel probably 40 at the moment.

Mr. JARMAN. Thank you, Mr. Chairman.

Mr. Moss. Thank you, Mr. Jarman.

Gentlemen, I want to thank you for your appearance.

Mr. TERRILL. Thank you for the opportunity, sir.

Mr. Moss. Mr. Donald D. Scarff, vice president, General Electric Co., general manager, Consumer Electronic Division, and Mr. Richard Christie, general manager, Major Television Department.

Mr. Scarff, you may proceed.

STATEMENTS OF DONALD D. SCARFF, VICE PRESIDENT AND GENERAL MANAGER OF CONSUMER ELECTRONICS DIVISION; RICHARD E. CHRISTIE, GENERAL MANAGER, MAJOR TELEVISION DEPARTMENT; CHARLES H. LAKE, COUNSEL, THE CONSUMER ELECTRONICS DIVISION, GENERAL ELECTRIC CO.

Mr. SCARFF. Thank you. Mr. Chairman and members of the subcommittee, my name is Donald D. Scarff and I am a vice president of

the General Electric Co., and general manager of its Consumer Electronics Division with headquarters in Syracuse, N.Y.—a position I have held since July 1 of this year.

I welcome this opportunity to respond to your invitation to discuss our color television problem with your subcommittee. With your indulgence, I shall proceed straight on through my prepared statement, and then my associates and I will undertake to answer any questions which the members of the subcommittee may have.

With me today are Mr. Richard E. Christie on my right, general manager of the Major Television Department and Mr. Charles H. Lake, on my left, counsel to this division—bith of whom have been active participants since the outset in our efforts to remedy this problem.

Products of the Consumer Electronics Division, which I now head, include radios, tape recorders, broadcasting equipment, phonographs and television sets. The division includes five product departments, each headed by a general manager who reports to me. Mr. Christie is one of these.

As I mentioned, I have been general manager of the Consumer Electronics Division only since July 1. So in answer to your questions, I will necessarily leave the discussion of certain particulars to Mr. Christie and Mr. Lake.

For your information, previously I headed the company's Lamp Division in Cleveland, Ohio, and Mr. Robert C. Wilson, with whom you have corresponded, Mr. Chairman and who previously headed the Consumer Electronics Division, has now become vice president and general manager of the Industrial Drives Systems Division in Erie, Pa.

Before telling you how our color television problem arose, when and why it happened, and the steps we have taken to correct it, may I first take a moment to place the particular questions that concern us today into the larger context of the General Electric Co.'s concern for and dedication to the safety of its products?

In considering the need for a National Commission on Product Safety, your subcommittee has focused on consumer products used in and around the home. I am sure you will recall that General Electric earlier this year filed with the subcommittee a statement which is now part of the record (see p. 291), and expresses the company's unqualified support of the chairman's proposal that such a product safety commission be created.

The General Electric Co. is principally engaged in the manufacture of products for the generation, transmission, distribution, and use of electricity. This is a wonderfully useful form of energy and a mainstay of our high national standard of living. But like any other form of energy it must be carefully and scientifically controlled.

For this reason, General Electric has historically been dedicated to the safety of its products. The company also has traditionally worked for and participated in the development of standards for product manufacture and performance, and has sought to insure that its own products equal or exceed the standards generally applicable to the industry.

Moreover, in the company's consumer products group each division now has product safety councils composed of qualified managers and

specialists to review the adequacy of their division's safety policies, standards, and procedures.

Despite our continuing efforts, we regret we have not been successful in this particular situation.

Let me state at the outset, Mr. Chairman, my firm conviction that if we previously had in place the exacting preventive procedures presently in effect, the situation would have been avoided.

The problem was that the design of the chassis of the set did not provide sufficient shielding of the regulator tube to fully contain the X-ray emission when it occurred. Before detailing just what happened, I want to offer four key points.

1. We are advised by both company and independent medical experts that the likelihood of anyone's being injured is extremely remote.

2. We have mobilized all available resources to locate and to fix every set that might be affected. As of July 28 we had corrected 100,737 or about 91 percent of the approximately 111,000 sets in the hands of consumers and dealers.

3. Our modification program was devised and carried out at our own initiative at a cost of several million dollars.

4. We have worked in close cooperation with Federal, State, and local public health agencies to help erase this problem.

Now, Mr. Chairman, let me review the origins of the problem and what we have been doing and are doing to eliminate it.

The downward, soft X-radiation from the regular tube involves some but not all of the large screen color television sets manufactured between June 1966 and February 1967. All these sets are being modified, even though the X-radiation does not emanate from all.

The total of sets of the type under discussion produced in this period was approximately 154,000.

Of these, about 43,000 were in factory or distributor warehouses, and thus under our direct control for modification prior to shipment.

Of the remaining 111,000 we estimated that approximately 90,000 were in consumers' homes and are being modified free of charge in the home. The remaining 21,000 were in dealer stock.

May I emphasize that no black and white sets are involved; neither are our Porta color sets involved.

The radiation emission problem resulted from the redesign of the television set chassis in the spring of 1966. In this redesign, the base of the voltage regulator tube was inserted into a well in the chassis. This change prevented the chassis itself from acting as a shield for soft X-rays that might emanate downward from the regulator tube. There remained some shielding but not sufficient to contain the downward beam altogether when it occurred.

The redesign was evaluated at the time, but of course it is now apparent that the evaluation did not catch the downward X-ray beam.

The first detection of the downward radiation came last November 21 during an inspection by the company radiation safety officer in the Syracuse plant. This discovery set in motion complicated measurements and analyses to discover the extent of the radiation and develop remedial measures.

Existence of the beam had been undetected earlier for two reasons. First, there was no apparent reason to expect radiation from the bottom of the set and our test procedures were not so oriented.

Second, the downward beam was extremely narrow and elusive. It was found to emerge from only 1 square inch of the set, and this compares with some 5,000 square inches on the surface of our sets in console models. Moreover, the difficulty in discovering the beam was compounded by the fact that it did not emerge from all sets.

After discovery during the analysis phase, in which we were striving to identify the dimensions of the problem, company medical and radiological experts advised us that the likelihood of any personal injury was extremely remote.

However, independent medical evaluations were sought. One of the outstanding radiological physicists in the United States was retained to work with us on our measurements to assure their accuracy and objectivity.

Three nationally recognized physicians, expert in the radiological health field, were retained to evaluate the possible health hazard involved. Their preliminary opinions, subsequently confirmed after thorough analysis of a vast accumulation of data, supported those of company experts and persuaded us that an effective, orderly process of field modification was the most responsible approach to the problem.

One method which applied to new production was to supplement shielding of the regulator tube so no radiation could escape. Thus, additional shielding was added to the chassis design, and this is the reason the downward radiation problem does not occur in sets manufactured after last February.

Although this method was appropriate for use under controlled factory conditions, it is not considered so for a field modification. Thus, our attention turned to developing an internally shielded tube, if this could be successfully done.

The challenge of designing and manufacturing such a tube was given to General Electric's receiving tube department in Owensboro, Ky. And the tube department did a remarkable job of designing a new tube and getting into mass production in record time for use in our modification program.

The new tube, whose design prevents external radiation, was adopted as the most appropriate and effective method of modifying sets already produced and in the hands of distributors, dealers, and consumers.

The field modification consists primarily of replacing the present, unshielded regulator tubes with the tubes of the new, internally shielded design. In addition, all factory stocks of the replaced tubes have been frozen and the obsolete tubes in the field have been recalled.

It might be appropriate to mention at this point that the tubes being replaced have not been used in and are not suitable for use in any but General Electric sets. The replaced tubes do not fit the sets of other television set manufacturers, and they do not and did not use them in their sets.

Locating and modifying the 90,000 sets in consumers' homes is a difficult and complex task.

The main elements of the task have been to get the names and addresses of the 90,000 owners and to insure that our service representatives and some 80,000 independent TV servicemen across the Nation get the new tubes into the sets.

Set owners have been and are being identified in various ways:

1. Through sales records of the dealers who sold the sets to their present owners.
2. Through records of service calls.
3. Through service contracts.
4. Through the sales registration cards packed with every new set to be returned by customers to our Syracuse headquarters.
5. Through finance company records, identifying owners of sets sold on credit.
6. Through the sales registration records of independent service contractors.
7. Through our own field salesmen and servicemen.
8. And finally, to locate set owners who have moved from an address identified through these methods I have listed, we are making direct inquiry to post offices, former neighbors, and credit companies.

As we near the final cleanup stage of the program it becomes increasingly difficult to locate the remaining sets. Our reports from the field indicate that at present we have been unable to locate between 6,000 and 7,000 sets.

We are working with the Public Health Service, and through them with local health agencies, to help locate the remaining owners.

We have also established an incentive program involving the approximately 80,000 independent TV servicemen across the country. Under this program General Electric supplies a free replacement tube and pays a $5 bounty to any such serviceman who locates and replaces obsolete type regulator tubes in customers' sets.

In view of the normal failure rate of regulator tubes, coupled with the frequency with which color TV sets are exposed to service, we are confident these remaining unmodified sets will ultimately all be corrected.

In summary, then, once we discovered the problem we have with these sets, we analyzed and sought advice upon its medical implications, we devised means of correcting it, we informed appropriate health authorities, and we set about with all available resources to correct the problem as expeditiously and as thoroughly as possible.

Now, Mr. Chairman, before concluding, let me state that my first concern as a manager, and the company's concern as a manufacturer of electronic products, is and has been to take all appropriate steps to make sure that the kind of situation that brings us here today cannot recur. Neither the public interest nor good business can tolerate less.

The comprehensive preventive program which has been developed and thus far instituted includes:

1. Design corrections that fully eliminate the possibility of X-radiation emissions in excess of standards from current and future General Electric color television receivers under any normal operation conditions.
2. Explicit manufacturing instructions and quality operational instructions requiring various checkpoints for examining for the presence and proper assembly of all necessary shielding materials.
3. A daily quality control check to assure the continuing adequacy of the design solution.

4. A weekly check by our engineering organization.

5. A monthly independent evaluation by the radiation safety officer, General Electric electronics laboratory.

We will continue, of course, to seek out and devise new and better methods of testing and associated instrumentation for all our products. We believe that the Commission on Product Safety which you have proposed can be helpful in this whole area and we will look forward to working with it.

And now Mr. Christie, Mr. Lake, and myself will undertake to answer any questions which you may have.

Mr. Moss. Before recognizing the members for questions I would like to again emphasize that it is not the purpose of this committee to determine whether or not there were adverse health effects as a result of these sets. We are concerned with the manufacturing procedures, with care taken in the design of new sets, and the controls that are exercised internally to assure a safe product. Mr. Keith.

Mr. KEITH. Thank you, Mr. Chairman.

What, if any, role does the Federal Trade Commission play in this matter?

Mr. LAKE. In the establishment of standards?

Mr. KEITH. Yes, sir.

Mr. LAKE. Or in regulating?

Mr. KEITH. Either one.

Mr. LAKE. I know of none.

Mr. KEITH. What about small sets, black and white, if there was an absence of shielding. Could there be a hazard?

Mr. SCARFF. Mr. Christie, would you want to comment on that?

Mr. KEITH. May I be more specific? Let us say that some young person, an embryonic electrical engineer, as many of us are in our childhood, takes one of these things apart and doesn't get the shield put back on. Is there a potential radiation danger?

Mr. CHRISTIE. I believe you mentioned black and white.

Mr. KEITH. Yes; black and white and small color sets.

Mr. CHRISTIE. In the voltages required for driving the picture tubes on both black and white and the small color sets you do not achieve the voltages and the circuitry that produce the same problem we are discussing here.

Mr. KEITH. When you say on page 2—"The company also has traditionally worked for and participated in the development of standards for product manufacture and performance, and has sought to insure that its own products equal or exceed the standards generally applicable to the industry."

What do you mean by "applicable" in this case? I assume these are informal standards which have no standing in law, or in any other respect, but which are self-imposed and agreed upon within the industry.

Mr. SCARFF. I think in general, sir, as stated, in all of our businesses we work with appropriate organizations that are concerned with setting standards and in many areas we work to standards that I guess you would characterize as you did, are not so-called legal standards, but they are accepted industry standards.

Mr. KEITH. Let's just say that you have someone who is unhappy with his employment at GE or some other firm and raises some capital,

has an idea, and goes out and organizes a fly-by-night television manufacturing company. He is going to make his product by cutting costs wherever he can. He will not necessarily apply the "accepted industry standards."

What other manufacturers without a great deal of experience, who will perhaps not follow the industry standards you follow, are moving into this field?

Mr. SCARFF. Sir, you asked what other manufacturers are there in this field?

Mr. KEITH. Yes. Is it an expanding industry with new people coming in attempting to compete with you?

Mr. SCARFF. There are a number of manufacturers and I am sure through the trade association that a list of these can be provided.

Mr. CHRISTIE. I would say this: That the EIA can supply such a list of the domestic manufacturers and I think you are very much aware of the fact that the Japanese industry is moving rather broadly to penetrate the lower or smaller color portion of the market, so there is quite an expansion of manufacturers in that regard.

Mr. KEITH. But generally speaking you believe they would adhere to the same standards that you described as being generally applicable to the industry?

Mr. SCARFF. Yes, I believe so.

Mr. KEITH. You are speaking very highly of your potential competitors. You say on page 3, paragraph No. 3:

> Our modification program was devised and carried out at our own initiative at a cost of several million dollars.

What was the timing in connection with that?

Mr. SCARFF. At what time did the program commence, sir?

Mr. KEITH. The initiative was shown and money was expended sometime after the threat was observed. How closely, and perhaps it was outlined by earlier witnesses in the testimony, did that follow?

Mr. SCARFF. Well, the date of the kickoff of the modification program——

Mr. LAKE. April 10. The program actually was instituted on April 10, but this was after considerable review had been given to the dimensions of the problem because there had to be considerable measurements made and ascertainment of just what was involved and also because of the depth and breadth of the field modification program because we had to think through all of the problems as to how to get to the multitudiness GE dealers, how to get to the GE servicemen, outside servicemen. There were many complications that were considered, but the program was implemented on April 10 and communicated broadly to the field after we discussed it with the Public Health Service.

Mr. KEITH. From time to time the Congress and the State legislatures are encouraged to enact legislation that enables proper and easy product identification by serial numbers, and other means. It would appear from what you have shown here that you are quite sophisticated in this respect, but perhaps you have now worked out even a better procedure for similar problems should they occur in the future.

Have you learned greatly from this experience?

Mr. SCARFF. Yes; we certainly did and I noted in the concluding portion of my original remarks we have a procedure now which I

have personally gone over and personally observed in operation and I believe that it is completely adequate to control such a situation in the future.

Mr. KEITH. On page 6 you talk about—

> The field modification consists primarily of replacing the present unshielded regulator tubes with the tubes of the new, internally shielded design.

Is it possible for a television repairman to put into one of the sets that has inadequate shielding the tube of another supplier that is not internally shielded?

Mr. CHRISTIE. In this particular case the tube involved is specifically for just General Electric. The socketry, the circuitry within the tubes, becomes a part of the set and is peculiar to us.

Mr. KEITH. I have no further questions at this time.

Mr. Moss. Mr. Stuckey?

Mr. STUCKEY. Thank you, Mr. Chairman. Mr. Scarff, I would just like to say that I think you and General Electric should be commended for the efforts that you have made once you found a defective product was on the market and the efforts that you have made to correct this, and I think it speaks well also that you have publicly stated that any type of commission to prohibit this from happening again you will work with, and I would like to say that. Thank you.

Mr. SCARFF. Thank you, Mr. Stuckey.

Mr. Moss. Dr. Carter?

Mr. CARTER. Mr. Scarff, I would like to ask about how many roentgens in 24 hours that one of these tubes would emit?

Mr. SCARFF. I am sorry.

Mr. CARTER. How many roentgens per 24 hours would one of these tubes in your defective television sets emit?

Mr. SCARFF. There is a great variety of radiation, as we have testified. It can be at various levels. It can cover various areas. I have some difficulty in being completely responsive to your question.

Mr. CARTER. I believe you recognized the roentgen is the unit of measure in X-rays, is it not?

Mr. SCARFF. Yes.

Mr. CARTER. My question was about how many roentgens in 24 hours would one of these defective sets emit?

Mr. LAKE. May I attempt to answer, Mr. Carter? I am not an expert in the field, but I can only point up some of the problems that we have encountered in trying to ascertain this very thing. When you talk about how many roentgens or milliroentgens may be emitted from a set, this depends upon, as I understand it, the attenuation factors of the cabinet.

If it is a metal cabinet it would block those X-rays more than a wooden cabinet. We have seen that even components of the chassis if it is in the way of where the beam might come out would cut down the amount of roentgens, milliroentgens, that might be emitted from that set, so our technical experts have had to engage in complicated measurements to make some rough "guestimates" for our medical experts.

Mr. CARTER. It seems to me that this might very well be done as radiologists do, have a little radio-sensitive tag and when you go to an X-ray room you have it and you get an amount of exposure and it shows on that tag. It doesn't seem to be a great problem to determine

the number of roentgens or units which would be emitted and which would possibly affect the family looking at color television. You can do that just the same way as a radiologist determines the amount of exposure he has when he is going about his radiological procedures.

Is that not true? I don't see any great problem here. Of course, it is true that shielding of any type does prevent the amount of X-ray emission. We know that. We know that the main shield in electrical laboratories usually is composed of lead. You speak of your tubes here, a certain type of shielded tube.

What is that tube shielded with?

Mr. SCARFF. The so-called replacement tube used in the modification program has a different internal design than the previous tube. The internal design prevents the radiation from escaping from the tube.

Mr. CARTER. Is it lined with lead or some other medium which is translucent to X-ray? Is that a secret?

Mr. SCARFF. No, no; not at all. I would be glad to give you technical information on the tube. None of us is particularly too expert. I assure you there is no secret process involved.

Mr. CARTER. Another thing. Of course, we know from the very start of X-rays that they can be highly dangerous. For instance, our pioneers in X-ray work lost fingers and developed cancer as a result of exposure to radiation.

Further, we know there is a possibility of sterilization of people who are constantly exposed to X-rays and the reason why I am asking you how many roentgens that one of these television sets emits in a 24-hour period is to find out if there is a possibility or has been a possibility of sterilizing the viewers of these color television sets.

Mr. LAKE. Mr. Carter, again I will attempt to give you the benefit of what information we do have on this subject.

Mr. CARTER. This is your own product and you don't know this. Personally I think you should take immediate steps to find out about this. A company as large as yours which knows that your sets are emitting dangerous X-rays on an innocent public and you made no attempt to measure the amount of radiation emitted.

Mr. LAKE. No, sir; that is not true that we haven't made attempts. Our experts have spent not inconsiderable time in making measurements of the tubes, of a spectrum of tubes, and they have come up with a data base which they have submitted to three independent outside medical experts who unanimously have said on evaluation of that data that the likelihood of our causing injury to anybody is extremely remote.

Mr. CARTER. You are sort of beating around the bush. Never yet have you told me in exact units the amount of roentgens that comes out of this television set to affect the people who are viewing it, and I think that this can be done.

I don't think it is an insurmountable problem because commonly this is done today, as we know, over a short period of time by people who work with X-rays.

I notice you state that these are soft X-rays. Of course there are three types, as we understand it, of X-rays, alpha, beta, gamma rays. Just which are the soft X-rays that you are talking about? There are many.

Mr. SCARFF. I can't personally answer that, sir. They have been characterized to us by the experts in the field as soft X-radiation and I am sure they could provide more information on that point.

Mr. CARTER. The only thing that we can get is that your experts say that the X-rays emitted are not of sufficient amount to cause skin cancer or cancer of other types probably, or that they are not liable to cause sterilization. Is that true?

Mr. LAKE. Yes, sir.

Mr. CARTER. Well, I think you should do more research on that. Personally, I am very much interested to see that it is done and that you have an exact measurement of the rays that are emitted and that affect the viewing audience.

Mr. LAKE. Sir, I was attempting to tell you that this is exactly what our own technical people with the help of one of the foremost measurement experts, Mr. Carl Braestrup, has been doing and has done.

What they have done is they have made measurements. You have to bear in mind that of all of the sets in the field, not everyone of those sets give radiation to the utmost limit.

There has been a continuum from a low emission all the way up to the highest one that we have uncovered in a very small percentage of the sets of 4,000 milliroetgens per hour. The data that was submitted are much more complicated than I am saying because I can't give you the details of the total data or express to you the endless hours that I know personally has been put into this, so we haven't taken it lightly.

Mr. CARTER. You have reached a high figure of emission and a low figure. What are those?

Mr. LAKE. Ranging from less than 0.5 milliroentgens to 4,000.

Mr. CARTER. State that again please, sir.

Mr. LAKE. Ranging from lower than 0.5 milliroentgens per hour up to 4,000.

Mr. CARTER. Point five milliroentgen per hour to how much?

Mr. LAKE. To 4,000 milliroentgens.

Mr. CARTER. To 4,000?

Mr. LAKE. Yes, and that is only in a small percentage of the sets that we have in our modification program. What we have done is, we have submitted four television sets with 220 tubes of different types to the U.S. Public Health Service. We have established a coordination between our own measurement experts and theirs. They have had a number of discussions with respect to this data and we have told them that we are perfectly willing to discuss and assist in any way possible.

Mr. CARTER. Is this data available to this committee?

Mr. LAKE. I would say so, sir.

Mr. CARTER. Mr. Chairman, I would like to see that made a part of the record if it is possible.

Mr. MOSS. Dr. Carter, it has been made a part of the record in the exchange of correspondence between myself and Mr. Terrill, and on the figures on highs and lows, the lows would coincide with the figure just stated. The highs would be, on the tests made by the Public Health Service, considerably higher than the 4,000 here indicated.

An appropriate tabulation will be included in the record and when Mr. Jarman's subcommittee—I believe you are a member of that committee ——

Mr. CARTER. Yes, sir.

Mr. Moss (continuing). Commences its hearings in this area this will be gone into very carefully.

Mr. CARTER. Thank you, Mr. Chairman.

Mr. Moss. Mr. Scarff, I would like to ask you just a few questions. On page 1 of your statement you mention, among the Consumer Electronics Division products, broadcasting equipment. Has there been any indication of excessive radiation from any of the broadcasting equipment utilized in connection with color telecasting?

Mr. SCARFF. Not that I know of, sir.

Mr. Moss. Has this area been carefully evaluated to determine whether it does exist or has existed?

Mr. SCARFF. I am informed that we have test and quality control procedures in that area. To be frank, sir, since the time that I have arrived in Syracuse I have directed my interest mainly toward the question at hand.

Mr. LAKE. I can add something, Mr. Moss, to that. When this situation came to our attention every department in our division was alerted to this situation and to check their own products in this regard and make sure that there is no similar problem.

Mr. Moss. In other words, prior to this time there has not been a consistent quality control program concerned with finding excessive X-ray emissions wherever they might occur?

Mr. SCARFF. Well, because of the differences in equipment this program would not be the same in each case. It is tailored to the needs of the department and I have been informed that our broadcast equipment department has adequate means at hand in this regard.

I was merely being frank with you to say that I personally have not had an opportunity as yet to review this.

Mr. Moss. As I understand it from Mr. Lake—correct me if I am wrong—you stated that since this incident developed each department has taken steps to insure the safety of the product in that department.

Mr. LAKE. Yes, sir.

Mr. Moss. The implication I gain from that is there were previously no steps in existence or they were not developed yet to give the assurance you are now attempting to achieve.

Mr. LAKE. No, if I understand your query, Mr. Moss, what I was intending to imply was that we became aware of this radiation problem in the television department it was made aware to each department in the division and they looked at their own situation to assure that there was no equivalent situation prevailing there, and none has come to our attention with respect to broadcasting equipment whatsoever.

Mr. Moss. This is produced as a result of high-voltage circuits, is that correct?

Mr. LAKE. That is my understanding. Mr. Christie, this is your area.

Mr. Moss. And in the design of these circuits are the initial—what? Pilot products subjected to intensive evaluation to determine levels of radiation both out of the cabinet or case and after being placed in a cabinet or case?

Mr. SCARFF. Yes, sir; they are. In addition to the preventive and quality control check methods I mentioned we have a hazards review board that particularly concerns itself with the development of the design of the set and at various stages during the engineering work where the set is designed the first prototype is made, pilot runs are

made, and the review board meets and conducts measurements in great detail.

Mr. Moss. Has that always been the case?

Mr. CHRISTIE. Let me comment to this point. As we stated in our statement, if we had the type of preventive procedures in place in the past we would not have been in the difficulty we are in today. We have had traditionally a Hazards Review Board who has gone over the product in the initial design and pilot phase.

I would like to point out that the problem that we are now confronted with has been a very small percentage of the total sets, something in the order of 2 to 7 percent that are in difficulty, and so the weakness in the past system that we have strengthened and put in place now is the continuing surveillance of production as it is manufactured.

Mr. Moss. When you say the total production of sets are you talking now of large screen color sets, or the total black and white production, or all sets?

Mr. CHRISTIE. Fundamentally we are surveying all of our products from a safety hazard point of view.

Mr. Moss. When you refer to the percentage?

Mr. CHRISTIE. Percentage is just a percentage of the large screen color sets, yes, sir.

Mr. Moss. In other words, you are going to build 2 percent and you have 111,000. That 111,000, or 154,000 represents about 2 percent of your total large screen production for a 12-month period?

Mr. CHRISTIE. It is about 2 to 7 percent, sir, that emit the high readings that we are concerned with here.

Mr. Moss. But the 154,000 would represent significantly more than 2 to 7 percent?

Mr. SCARFF. Mr. Chairman, the 154,000 was our total production of large screen sets between June 1966 and February 1967. Mr. Christie is referring to a percentage of that total that are in trouble.

Mr. Moss. How many modifications have you made? Did you have to modify all of the 90,000 in consumer hands?

Mr. CHRISTIE. Yes, we are modifying all of the sets, including the total of 154,000.

Mr. Moss. Did you at the time of modifying the sets in the homes of owners tell them the reasons for the correction which was being undertaken?

Mr. SCARFF. I think it is difficult, sir, when you consider the extent of this modification program. It involves not only our own 32 distribution centers probably a like number of additional repair centers, all of a great number of people——

Mr. Moss. Mr. Scarff, you can answer that question yes or no. You informed the owners of the nature of the defects which required correction or you did not.

Mr. CHRISTIE. We did not give written instructions to inform——

Mr. Moss. Did you have any other means of communication other than written instructions to this servicing organization?

Mr. CHRISTIE. We gave verbal instructions to our distribution centers. I think in response to your question, sir, you must realize that we have a tremendous field force.

Mr. Moss. You are avoiding my question. I must insist upon a direct answer because it is a very simple question. It is not a complex question.

Mr. LAKE. I will answer.

Mr. Moss. You did or did not.

Mr. LAKE. The answer is that we did not.

Mr. Moss. You did not.

Mr. LAKE. We did not.

Mr. Moss. Don't you think it would have been advisable to inform the set owner? Do you require at the time of modification in the home any kind of acknowledgement by the set owner that the modification had been completed and it incorporated in any manner, directly or indirectly, a radiation problem?

Mr. LAKE. No, sir. Let me expand a bit here. When we first contemplated the field modification program we gave significant consideration to the very question that you are asking us now and we concluded at that particular time, and after we had discussed it with many, many persons and also the three medical experts, whether or not we should make a public announcement at that particular time, we concluded that, and we were advised that, it would not be advisable to make a public announcement at that particular time.

Therefore, our communication to the field was not of the nature of saying this is a great radiation problem because we were advised it was not a radiation problem. We discussed this with the Public Health Service likewise and indicated to them that we were not anticipating making an announcement because the feeling was that it would cause more concern, that we were advised it would be unjustified if we got people excited by going into the home and saying, "You have a radiation problem in your set."

So the answer to your question is we did not and that is the reason why we didn't.

Mr. Moss. You know, you have at least one very irate Member of the House of Representatives, my colleague from West Virginia, Mr. John Slack. His house was contacted and the modification was made and his wife was asked to sign something. He doesn't know what. And he is quite disturbed over the fact that he was not informed as to the reasons for the modification.

Mr. LAKE. I can assure you, Mr. Moss, that there was never any utterance, there was never any communication from our division, from our headquarters, to get any waiver signed, signed by anybody.

Mr. Moss. I haven't identified it as a waiver. I said something was signed and he does not know what it was. That is why I asked the nature of anything that was required to be signed.

Mr. LAKE. We have asked our servicemen to make sure that they report the fact that this has been done so that we ascertain the number of sets that have been modified. We keep a weekly tabulation of all of those sets that have been modified and we place it on computer to keep adequate records. This may be it.

Mr. Moss. What form of communication did you undertake with the general independent service organizations across the Nation, independent radio and television repairmen?

Mr. LAKE. Field letter communications.

Mr. Moss. Directly to all of them?

Mr. LAKE. I think this is right.

Mr. CHRISTIE. Yes.

Mr. Moss. Can you supply for the committee for inclusion at this point in the record a copy of those communications?

Mr. LAKE. Yes, sir.

Mr. Moss. And the dates of such communication?

Mr. LAKE. We have a binder this thick of all the communications that have been sent to the field in an attempt to have an appreciation of this problem and to get it under control and it would be a pleasure for us to let the committee see just the magnitude of the task and the extent.

Mr. Moss. Will you supply for the committee a copy of those communications?

Mr. LAKE. Yes, sir.

(The information referred to follows:)

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
Syracuse, N.Y., August 11, 1967.

Hon. JOHN E. MOSS,
Chairman, Subcommittee on Commerce and Finance, House Interstate and Foreign Commerce Committee, Washington, D.C.

DEAR CONGRESSMAN MOSS: In the course of hearings before the Subcommittee on Commerce and Finance on July 31, certain items were to be submitted by us through subsequent correspondence.

Regarding our field modification program, you inquired concerning communications which we have "undertaken with general independent service organizations" (transcript p. 401). I am enclosing herewith copies of this correspondence along with some other material that is pertinent in this regard identified as Enclosure A. We have not included all of our field communications relating to the modification as they are quite voluminous. However, should you so desire, we would be pleased to supply the balance of that material even though it does not relate directly to the independent serviceman.

Also, as mentioned by Mr. Terrill at the hearing, we are presently in the process of preparing with Public Health Service a more general discussion of X-rays from color television receivers for use by servicemen.

At the July 31 hearing, Mr. Borkowski, expressed concern that a servicemen might replace one of the new tubes used in the modification program with an obsolete tube which does not have the built-in shielding (transcript pp. 462–463). While the possibility of this happening cannot be absolutely eliminated, we have taken a number of steps to forestall such an occurrence. First, two identical labels (sample marked as Item 1 on Enclosure B) are applied to the set during the modification. One such label is applied to the exterior of the back of the set; the other is applied on the high voltage compartment adjacent to the regulator tube. As a result, the serviceman would have to disregard these labels in seeking to insert an obsolete type tube in a modified set. In addition, a third caution label (Item 2 on Enclosure B) is applied at the point where a serviceman might subsequently seek to adjust the high voltage control.

As referred to in my opening statement at the hearing, the Receiving Tube Department has instituted steps to obsolete replacement stocks of the three tube types (6EA4, 6EF4 and 6LC6) which were originally installed in portions of the unshielded color television production with which we are concerned. As set forth in Mr. McElfresh's June 13, 1967 letter and its attachments (included in Enclosure A), financial incentives have been utilized in order to accelerate the process of recalling the obsolete tubes from the replacement market. Each new replacement tube produced has instruction covering the modification packed in its box (See Item 3, Enclosure B). Furthermore, in addition to our field communications to servicemen, there has been extensive coverage of this matter in newspapers and the trade press. This coverage plus our recently instituted tube bounty should help to alert servicemen to this problem. As you may recall, our bounty program provides both a five dollar payment plus a free replacement tube for each obsolete tube turned in by the serviceman. As a result, we believe we

have instituted an effective program to reduce to a minimum the possibility that a serviceman would insert an obsolete tube in a modified set.

Lastly, I would like to clarify the confusion surrounding the position of the Public Health Service with respect to a public announcement which seems to us to be more apparent than real. Actually, any difference between the Public Health Service and General Electric on this question appears to have been one of timing. As stated by Mr. Lake at the hearing, our field modification program commenced on April 10 and we did not make an announcement at that time, primarily because we had been advised by medical experts that the possibility of any hazard to health was extremely remote. In addition, we did not have enough of the new replacement tubes to meet a disruptive surge in demand at the outset of the program. After more data was developed and made available to Mr. Terrill, he did urge us to make a public announcement. This question was resolved shortly thereafter when coordinated announcements were made on May 18 by both General Electric and the Public Health Service.

With respect to the progress of our field modification program, an encouraging note is that our most recent report shows that as of August 9 there were only about 2,000 sets in the customer/dealer category remaining to be reworked. Thus, we have presently modified over 98 percent of the sets which we are after.

Very truly yours,

D. D. SCARFF,
Vice President.

ENCLOSURE A

COMMUNICATIONS—FIELD MODIFICATION PROGRAM—SERVICEMEN

EXPLANATORY NOTE

General Electric large screen color television receivers are manufactured in Syracuse, New York, by the Company's Major Television Department (MTD), a component of its Consumer Electronics Division. These sets are distributed through 32 regional distribution channels of which approximately two-thirds are Company-owned with the balance being handled by independent distributors. The headquarters for the Company-owned distribution is at the Major Appliance and Hotpoint Division in Louisville, Kentucky. Field product service activity, including the color television modification program, is administered from Louisville through the Distribution Finance and Service Operation (DFSO) together with the product service personnel of the Major Television Department. The regulator tubes involved in the modification program are manufactured by the Company's Receiving Tube Department in Owensboro, Kentucky.

The color sets to be modified were subject to a one-year warranty on the picture tube and all parts. Therefore, they were still under warranty and service would normally be handled in one of two ways: (a) by Company or independent distributor service operations which were utilized by non-servicing GE television dealers, or (b) by GE television dealers who chose to set up their own service facility (servicing dealers). As the color television modification program included all GE television dealers, servicing and non-servicing, from its inception on April 10, it encompassed the vast majorty of servicemen coming in contact with the color receivers in question. In addition, communications were directed to independent servicemen through Howard W. Sams nationwide mailing list. Also, a contact was made with the National Alliance of Television and Electronic Service Associations (NATESA) and they issued a bulletin to their membership with respect to the General Electric modification program.

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
TELEVISION RECEIVER DEPARTMENT,
Syracuse, N.Y., April 13, 1967.

To: All product service managers—independent distributors.

The following information is provided for your guidance in the execution of our current regulator-tube replacement program on KC-model chassis.

Distributor Inventory

The rework program, as previously described, is to be carried out as intensely as possible. All warehouse stocks must be completely reworked by July 31, 1967.

New tube types will be supplied and billed to you in quantities as you will indicate. Your direct cost of parts and labor for this stock rework will be billed directly each week to M.T.D. Product Service in Syracuse. Each billing must be substantiated with the model and serial number of the receivers modified. All regulator tubes removed from sets must be securely retained until further notification to be issued shortly.

Non-Servicing Dealers (Dealers for whom you provide warranty service directly or under separate contract)

Since these dealers do not provide for their own service, it will be necessary for your own operations to look after such sets on dealers' floors, in dealers' stocks, or sets already in customers' homes as sold by such dealers. All sets must be reworked by July 31.

a. If you assign a technician to rework dealer stocks, his expenses, for bill-back purposes, will be based at the rate of normal service-shop liquidation rate (not at retail service in-home rates.).

b. It will be necessary, for control purposes, to attach a listing of the dealer names, addresses, model and serial numbers covering each set reworked on dealers' floors or in dealers' stocks.

c. Sets already in customers' homes. Rework is required at the time of setup, if set has escaped dealer rework. Otherwise, rework is to be performed on sets previously sold during a normal customer-requested service call within the next three months, during warranty, contract or non-warranty.

d. Sets already in customers' homes on which no service call is anticipated within the next 90 days must be located and reworked. For location, it is suggested you use warranty registration cards, previous service records, service contract records, dealer sales records, your own records of sales to your dealers and any other sources available to you.

e. All sets of this type sold non-serving dealers must be modified by July 31.

f. In those instances where it is deemed necessary to generate a retail service call to specifically change the regulator tube and check high-voltage, you may bill back such calls to M.T.D. at your normal rates.

g. For each set so reworked, you must attach to your weekly invoice the details of customer's name, address, model and serial number.

Servicing Dealers (Dealers who perform or otherwise arrange for their own service to be performed by others)

a. Negotiate with the dealer a single flat rework rate to cover stock and replacements in customers' homes. It should be considered that some sets are unpacked on dealers' floors, others are still packed in warehouses, some dealers provide an initial set-up call in customers' homes, some sets already sold may require a service call in next 90 days and, in some cases, it will be necessary to generate a specific service call to replace the tube within the specified time limit. DFSO retail service in Detroit and Jacksonville estimate that a rate in the area of $5.00 per tube returned may be a sufficient allowance rate to obtain the desired results.

b. To obtain this special rework allowance, it is required that the dealer return the old tube, model, serial number and his location for each tube replaced in a non-customer set, and, in the case of a set reworked in the home, the customer's name and address is also required.

c. To further assure the effectiveness of this operation relative to sets sold through servicing dealers, you should, at the onset, determine exactly how many of these specific models have been sold to each dealer and then endeavor to get back through that dealer the same number of old tubes.

d. Dealer reimbursement claims are to be paid by the Independent Distributor and re-billed to M.T.D. In each case, each claim must be substantiated with individual customer's name, address, model and serial number.

e. Credit for rework will be confined to replacement of 6EF4 and 6LC6 regulator tubes replaced in subject KC models.

General

It is recognized that additional clerical help may be required to develop rework lists, schedule calls, check off rework and accumulate information as required by M.T.D. A record of such expense is to be maintained and billed monthly to M.T.D. Product Service with a full explanation.

W. H. MEYER,
Manager-Product Service.

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
MAJOR TELEVISION DEPARTMENT,
April 25, 1967.

Subject: HV regulator tube rework program.
To: DFSO & independent distributor managers—product service.

The following supplementary labelling instructions are to be followed in *all phases* of the rework program, regardless of whether the tube is changed in distributor stock, dealer stock or customer home.

There will shortly be two duplicate tube type labels (rather than one) packed with each replacement regulator tube shipped from Owensboro. These labels are to be installed as follows:

1. Install one label on the lower half of rear side of H.V. compartment.
2. Install one label on the outside of the cabinet back near the top, so that persons subsequently coming in contact with the receiver will know that the change has been accomplished.

NOTE.—Caution label 23A201255 is to be used as previously instructed.

W. H. MEYER,
Manager, Product Service.

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
MAJOR TELEVISION DEPARTMENT,
April 28, 1967.

To: All DFSO and independent distributor managers—product service.
Subject: Rework program—color TV.

Now that we have the supply of new type tubes flowing into the system, we must institute the top priority phase of this program—*rework of customers' sets.*

1. This phase must start with your own servicemen replacing these tubes on every service call on the receivers in question.
2. All obsolete type tubes must be removed from your servicing dealers' stock or your servicing dealers' service facility stock and replaced with new types. It is mandatory that no obsolete type regulator tube be used by anyone under any circumstance after April 15, 1967.
3. All Tube Distributor stocks of obsolete type regulator tubes are being recalled by Owensboro.
4. Owensboro is advising independent service technicians that the tubes are to be returned to them for credit. You must arrange to follow this up to make sure that all obsolete types are withdrawn from service stocks and servicemen's tube caddies. Since all KC sets are still under warranty, you should be able to reach *all* technicians servicing these sets.
5. *It is emphasized that this rework of customers' sets take precedence over rework of sets in inventory.*
6. Make sure that *all* men servicing these sets have a supply of new type tubes and that they report all sets that they fit with new tubes. This will speed up the rework program in line with priorities established by management.
7. Your target number of sets to be reworked in customers' homes and dealers' stock must be realized by July 31, 1967. This leaves you only 12 weeks to complete the total task. This is a "Company Directive" program and must be completed on schedule.

W. H. MEYER,
Manager—Product Service.

GENERAL ELECTRIC CO.,
ELECTRONIC COMPONENTS SALES OPERATION,
Owensboro, Ky., May 3, 1967.

To: All franchised entertainment receiving tube distributors.

We are obsoleting from our line as of the date hereof, the following three tube types which are exclusively manufactured by General Electric:

Replace with:	Obsolete type:
6EH4	6EA4
6EJ4	6EF4
6LH6	6LC6

To avoid dead inventory being carried in your stock as well as your dealer's, we recommend that your sales personnel make contact with your TV service customers so that these carton pack replacement tubes may be collected and returned to us for full credit or no cost replacement. To aid your sales personnel, we are notifying TV services dealers of the obsolescence of these three types. Since these were exclusive GE types, we will accept *all domestic brands.*

In accordance with our regular obsolescence policy, the return shipments should be made by August 1, 1967.

Enclosed is a price revision notice showing the pricing structure of the replacement types. You will note there is no price change on the replacements.

Very truly yours.

CHARLES A. RICHARDSON,
Acting Manager—Distributor Sales Operation.

MAY 3, 1967.

RECEIVING TUBES PRICE REVISION NOTICE NO. 1

Please note the following revisions to your Distributor Price Schedule ETR–39K dated April 14, 1967, as follows:

DELETIONS

Type	Distributor's price (including warranty)	Distributor's price Alpha brand	Suggested list price	Comments
6EA4	$2.47	$2.35	$7.30	Replaced by 6EH4.
6EF4	2.57	2.44	7.60	Replaced by 6EJ4.
6LC6	2.30	2.19	6.80	Replaced by 6LH6.

ADDITIONS

6EH4	$2.47	$2.35	$7.30	
6EJ4	2.57	2.44	7.60	
6LH6	2.30	2.19	6.80	

Distributors have 90 days to return inventory of those types being dropped from our line.

General ELECTRIC Co.,
ELECTRONIC COMPONENTS SALES OPERATION,
Owensboro, Ky., May 5, 1967.

To: All television service dealers.

Types 6EA4, 6EF4, and 6LC6, regardless of brand name or trade mark, were manufactured only by General Electric. We have now obsoleted these types and replaced them as follows:

Obsolete types	Replacement	Suggested list price
6EA4	6EH4	$7.30
6EF4	6EJ4	7.60
6LC6	6LH6	6.80

Since no further 6EA4, 6EF4, or 6LC6 tubes will be sold, we want to give you the opportunity to return any inventory (regardless of domestic brand name or trade mark) you might have on these types for full credit or no-cost replacement. These should be returned to your nearest General Electric distributor. Should there be no franchised GE distributor in your area, please advise the quantity and types you have in stock and your complete address. Send this to my attention at the General Electric Company, 316 East 9th Street, Owensboro, Kentucky, no later than July 1, 1967.

To avoid your carrying unsaleable inventory, we suggest you take advantage of this opportunity.

Very truly yours,

CHARLES A. RICHARDSON,
Acting Manager—Distributor Sales Operation.

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
MAJOR TELEVISION DEPARTMENT,
North Syracuse, N.Y., May 5, 1967.

To: All DFSO and independent distributor managers—product service.
Subject: KC chassis rework program.

As we have indicated to you, it is most important that we replace obsolete type regulator tubes in all customers' KC receivers in the shortest possible space of time.

Since there will be a substantial number of service calls performed by independent servicemen who may not be reached immediately by your communications, we are providing you with copies of a special edition of "Service Talk" (sample attached) to be used as a handout at all of your parts counters. We will be shipping you bulk quantities of this publication to cover main houses and branches. Please instruct your counter men to hand out a copy to every person who comes in for tubes or electronic parts of any kind.

Your counter men should be instructed to check all the returned tubes for complete and legible customer's name, address, model and serial number of the receiver. Also, all such regulator tubes returned to your parts counters must be passed to your Program Coordinator for recording. Failure to do this will result in unnecessary service calls at a later date as all customer sets requiring rework must be accounted for.

R. C. HANNUM,
Supervisor, Technical Service.

[Service Talk, from Television Receiver Product Service, Electronics Park, Syracuse, N.Y., April–May 1967]

To: All Servicemen Servicing G-E Color TV Receivers.

Regardless of the type of service being done on *KC Chassis* color receivers, the High Voltage regulator tube V17, with white printed code (white branding) is to be changed to a new type, as detailed below. Tubes with yellow code and branding are not to be changed. Receivers stamped EN378 or higher do not require this change.

The old tube removed from the receiver is to be tagged with customer's name and address, along with the model and serial number of the receiver. Return the tagged tube to the nearest General Electric Television Distributor for a credit or exchange.

For 6EA4: use 6EH4
For 6EF4: use 6EJ4
For 6LC6: use 6LH6

After installing the new tube type, attach one of the new tube type labels (packed with the tube) to rear wall of the High Voltage compartment and the other label to the outside of the cabinet back—near the top. The information on the label will then indicate that the new type tube has been installed to anyone subsequently servicing the receiver.

Operate receiver and adjust the High Voltage as instructed on Page KC3–14, dated 5/67, in the KC Service Manual.

GENERAL ELECTRIC CO.,
MAJOR APPLIANCE AND HOTPOINT DIVISION,
Appliance Park, May 8, 1967.

To: District product service managers.

It is imperative that your rework program on KC color receivers proceed without further delay. Instructions relative to this program are now complete and we understand that the required tubes are being produced and shipped at a rate which will guarantee continuity of your schedule.

Your lists of set sales to servicing dealers by dealer, of non-servicing dealer inventory, and of consumer's sets requiring rework should be *completed by May 15* so that quantities can be given to Syracuse on that date. This is important so that Syracuse can inform management as to the full scope of the program and as to progress on both your own and dealer rework.

Your consumer electronics technicians, and your servicing dealers and their service contractors must receive the *initial supply* of the new receiving tubes so that customer's sets may be reworked as a part of regular service calls.

A sufficient number of your technicians must be assigned specifically to the program to assure completion by the deadline date. You may wish to prepare "route sheets" for these technicians so as to limit the area in which they work each day and thereby increase their productivity.

Servicing dealers and service contractors must be followed at least bi-weekly as to progress. You will want to furnish these dealers with customer lists prepared from the "Purchase Record" cards which have been given to you—especially if any dealer does not have a record of all of his sales.

Please forward a copy of your weekly MTD009 "Progress Report" to Earl Patton, to arrive in Louisville each Monday.

Again, bear in mind that 100% of the affected sets are to be located and reworked. Your procedures and schedules must be directed towards accomplishing this objective by July 31, 1967. Any problems encountered should be discussed with Bob Hannum, Dutch Meyer, or Earl Patton who will give you all possible assistance.

J. R. DAVIS.

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
MAJOR TELEVISION DEPARTMENT,
Syracuse, N.Y., May 19, 1967.

To: All electronic technicians.

The following press release was made public May 18, 1967.

"General Electric's Major Television Department has announced a program to modify some of its large screen color TV sets. The program is being carried out on a national basis and should be completed by July 31.

"Modification involves replacement of the regulator tube and adjustment of the power supply. Quality Control tests indicate that some of the sets produced between July of 1966 and February, 1967 may emit soft X-radiation in excess of desirable levels. When present, this emission is directed toward the floor and not toward the viewer. The picture tube is not involved.

"Nationally recognized radiological health experts have confirmed preliminary Company findings that emissions have not been sufficient to cause harm to viewers. However, in view of its 26-year effort in providing customers with reliable and safe television receivers, the Company has a program underway to make appropriate changes in the models involved. These changes will resolve any problems that may exist as well as materially improving performance and reliability.

"Approximately 90,000 of these models have been sold. Sets currently available will be modified before sale. For sets already sold, General Electric service representatives are contacting customers who purchased these specific models since last June and are willing to make the modification without charge at the customer's convenience.

"Owner identification is being achieved through mobilization of General Electric's entire distributor-dealer organization.

"Factory records, dealer sales records, warranty cards, service records and contracts and finance records are among the many sources being used to derive this information. It is estimated that the program will be complete by July 31, 1967. Set owners may wish to contact their dealer or serviceman if the modification of their sets has not been completed by that time. No black and white sets, no Porta-Color sets and no sets purchased before June 1966 are involved in the modification."

These color television receivers are those involved in our present field rework program. By now all dealers should have received the details of the program; if by any chance there are any who have not yet been notified of the details of the Program, they will receive detailed instructions very shortly.

In response to customers inquiries which will probably result from the above release, dealers are advised to assure the customer that since the emission is directed toward the floor and not toward the viewer, they can continue normal viewing without concern. At the time of the call, dealer should obtain the name and address of the customer as well as the model and serial number of their set if possible.

Assure the customer that if theirs happens to be one of the sets involved, they will be contacted shortly and arrangements will be made to correct this condition at no charge to them.

Dealers should refer Press inquiries to T. M. Egbert, Consumer Electronics Division, Electronics Park, Syracuse, New York, Area Code 315, 456–2292.

(From the New York Times, 5/19/67—Quoted by Permission)

Quote from Mr. Terrill of the Public Health Service, Washington, D.C.

"Mr. Terrill said that he found it hard to visualize any way in which a television viewer could get exposed to enough radiation from such a set to constitute a health problem.

"The radiation that the defective sets leak is in the form of low energy x-rays."

W. H. MEYER,
Manager—Product Service.

The above release was made to 68,000 service technicians through the Howard W. Sams' mailing list.

W. H. MEYER.

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
MAJOR TELEVISION DEPARTMENT,
North Syracuse, N.Y., June 6, 1967.

To: All district service managers DFSO and independent distributors.

To dispel any possible misunderstanding that might have arisen in regard to our national rework program, I would like to re-emphasize what is expected of our distribution system.

1. The rework program must be completed by July 31st.
2. No stone must be left unturned in the location and rework of every set.
3. The *only* restriction placed on you is the requirement to get the job done on time.
4. You must use every possible resource that you can muster to get the job done on time.
5. The supply of 6LH6 tubes is improving daily. Remember, every set purchased by a customer before January 1, 1967, requires a 6EJ4.

There are only nine weeks to go and the majority of customers' sets still to rework.

W. H. MEYER,
Manager—Product Service.

GENERAL ELECTRIC CO. NEWS RELEASE, MAY 18, 1967

General Electric's Major Television Department has announced a program to modify some of its large screen color television sets. The program is being carried out on a national basis and should be completed by July 31.

Modification involves replacement of the regular tube and adjustment of the power supply. Quality control tests indicate that some of the sets produced between June of 1966 and February 1967 may emit soft X-radiation in excess of desirable levels. When present, this emission is directed toward the floor and not toward the viewer. The picture tube is not involved.

Nationally recognized experts have confirmed preliminary Company findings that emissions have not been sufficient to cause harm to viewers. However, in view of its 26-year effort in providing customers with reliable and safe television receivers, the Company has a program under way to make appropriate changes in the models involved. These changes will resolve any problems that may exist as well as materially improving performance and reliability.

Approximately 90,000 of these models have been sold. Sets currently available will be modified before sale. For sets already sold, General Electric service representatives are contacting customers who purchased these specific models since last June and are willing to make the modification without charge at the customer's convenience.

Owner identification is being achieved through mobilization of General Electric's entire distributor-dealer organization. Factory records, dealer sales records, warranty cards, service records and contracts, and finance records are among the many sources being used to derive this information. It is estimated that the program will be completed by July 31, 1967. Set owners may wish to contact their dealer or service man if the modification of their seats has not been completed by that time. No black and white sets, no portacolor sets and no sets purchased before June 1966 are involved in the modification.

GENERAL ELECTRIC CO.,
TUBE DEPARTMENT DISTRIBUTOR SALES,
Owensboro, Ky., June 13, 1967.

Subject Obsolescence and replacement of 6EA4, 6EF4, 6LC6 in the GE entertainment receiving tube line.

To : All ESCO/DSO district sales managers and zone managers.

Attached is a new mailing which is being made to all distributors and dealers concerning the obsolescence of types 6EA4, 6EF4, 6LC6. Obsolescence of these types has been made necessary since the finding at Major Television Department that in certain chassis where the types have been used, there may have been, because of inadequate shielding in the set, the emission of soft x-radiation in excess of desirable levels. The General Electric Company's position regarding this situation is reflected in its news release of May 18, 1967; copy attached. We are making another mailing to distributors and dealers concerning the urgency to return the three obsoleted types as part of the Company's maximum effort to recall every tube in these types that may now exist in the market place. The U.S. Department of Health has been assured that an intensive effort will be made by the General Electric Company to complete the recall and replacement by July 31, 1967.

You will note from the attached letters, we are urging dealers to immediately return these tubes to franchised GE distributors but will also allow them to return tubes directly to GE. In this event, GE will issue a check to the dealer in an amount equal to 50% of the current suggested list price. Distributors, likewise, should promptly send dealer returns as well as their own inventory stock back to us for credit. It is important that returns be made immediately since the total recall program must be accomplished prior to July 31.

We would like for you, personally, on every distributor sales call that you make, to discuss this matter with the appropriate distributor personnel and to personally check the distributor's inventory yourself to insure that tubes are not being left on the shelf. You will note that we have indicated to distributors that credit for returns would be issued to them in an amount equal to 50% of the current suggested list price of these tubes rather than at normal distributor cost. This will give your distributors an amount ranging from $1.21 to $1.36 above distributor cost for handling these returns.

	6EA4	6EF4	6LC6
List	$7.30	$7.60	$6.80
50 off	3.65	3.80	3.40
Distributor cost (Alpha brand)	2.35	2.44	2.19
Excess of credit above distributor cost	1.30	1.36	1.21

In the distributor letter we have also indicated availability on the replacement tubes for those types being obsoleted. There should not be any long delays in obtaining product on any of the three replacement types. However, please do not have your distributors hold up obsolete type returns to coincide with availability of new types. It is very important that we have these obsolete types returned with maximum speed. Inasmuch as returns are going to be handled on a credit reimbursement basis rather than a tube for tube basis, there should be no reason for returns to be held up to coincide with new tube availability.

We know we can count on your conscientious support of this recall program.

J. E. MCELFRESH.

P.S. Additional letters to cover the return of these osoleted tubes from base working stocks and from tube checker consignments have also been prepared in order to leave no doubt in anyone's mind concerning the need to return the tubes from these sources. These letters have been mailed to all base working stock accounts and to all tube checker operators with GE tube consignments. Familiarize yourself with the procedure outlined in the letters for handling these returns so that you can handle any questions concerning them. Note that in the case of base working stock accounts, the obsolete tubes are being billed out to the distributor at normal distributor cost. Upon return of the tubes to us, he will receive credit in an amount equal to 50% of suggested list price. In the case of tube checker

consignments, there will be no billing issued for the obsolete types. The operator will merely return the tubes to us and an adjustment in his consigned stock level will be made to reflect the withdrawals.

GENERAL ELECTRIC CO.,
ELECTRONIC COMPONENTS SALES OPERATION,
Owensboro, Ky., June 21, 1967.

To: All franchised General Electric entertainment receiving tube distributors.

We advised you on May 3 of our intention to obsolete from our entertainment receiving tube line the following three tubes types which are manufactured exclusively by the General Electric Company:

Obsolete types:	Replace with:
6EA4	6EH4
6EF4	6EJ4
6LC6	6LH6

These are the types involved in General Electric's Major Television Department program for modification of some of its large screen color television sets. This program is referenced in the attached news release, which appeared in daily news media all over the United States on or about May 18, 1967.

As indicated in the news release, the General Electric Company is making scrupulous efforts to insure the reliability and safety of all its television receivers. Consequently, in addition to the set modification alluded to in the news release, maximum effort is being made to recall every last tube of the above-listed obsolete types that may now exist in the market place. Only by doing this can we eliminate the possibility of continued utilization of these tubes in those chassis where soft x-radiation might be emitted in excess of desirable levels because of the inadequate shielding in those sets. Therefore we are again requesting that you immediately return to us all stock which you may have in these obsolete types.

Another letter is being sent to TV servicemen with a copy of the attached news release requesting that they return the obsoleted types through their General Electric distributor promptly. Our letter to them also states that if tubes are returned to us directly we will issue them a check for their return of the three obsoleted types in an amount equal to 50% of our current suggested list prices.

Your cooperation in accepting from them for return to us any tubes that they hold is earnestly solicited. We also urge that your sales personnel make a special effort to collect these tubes from TV service customers.

All domestic brands of these types should be accepted by you for return to us. In return for your cooperation in the effort to withdraw these tubes from the market, you will be credited for your returns in an amount equal to 50% of the current suggested list price of these tubes rather than at normal distributor cost:

Obsolete types:	Reimbursement credit:
6EA4	$3.65
6EF4	3.80
6LC6	3.40

It is important that returns be made promptly and that all of these tubes be in our possession no later than July 31, 1967 since the U.S. Department of Health has been assured that every effort to do this will be made. The replacement types which are listed above for the obsolete tubes are being made available to fill your orders as rapidly as possible. Availability status for the three replacement types is as follows:

Replacement types:	Availability:
6EH4	Current Stock
6EJ4	Stock week of 6/26
6LH6	Stock week of 7/5

Your cooperation is sincerely appreciated.

Very truly yours,

CHARLES A. RICHARDSON,
Acting Manager—Distributor Sales Operation.

GENERAL ELECTRIC CO.,
ELECTRONIC COMPONENTS SALES OPERATION,
Owensboro, Ky., June 21, 1967.

To: All television service dealers.

We advised you on May 3 of our intention to obsolete from our entertainment receiving tube line the following three tube types which are manufactured exclusively by the General Electric Company and are replaced with the types indicated at the list prices suggested below:

Obsolete types	Replace with	Suggested list price
6EA4	6EH4	$7.30
6EF4	6EJ4	7.60
6LC6	6LH6	6.80

These are the types involved in General Electric's Major Television Department program for modification of some of its large screen color television sets. This program is referenced in the attached news release, which appeared in daily news media all over the United States on or about May 18, 1967.

As indicated in the news release, the General Electric Company is making scrupulous efforts to insure the reliability and safety of all its television receivers. Consequently, in addition to the set modification alluded to in the news release, maximum effort is being made to recall every tube of the above-listed obsolete types that may now exist in the market place. Only by doing this can we eliminate the possibility of continued utilization of these tubes in those chassis where soft x-radiation might be emitted in excess of desirable levels because of inadequate shielding in those sets. Therefore, we are again most urgently requesting that you immediately return to your nearest General Electric distributor, all stock which you may have in the obsolete types (regardless of domestic brand name or trade mark) for reimbursement.

All General Electric tube distributors have been advised of our message to you concerning the return of these tubes, and we urge that these returns be made promptly since the U.S. Department of Health has been assured that General Electric will exert every effort to do this without any delay. Should you be uncertain as to your nearest franchised GE distributor, please advise me of your name and address, and I will send you a list of the General Electric tube distributors in your area.

If you desire or prefer to return these three obsoleted types directly, they may be sent, transportation collect, to General Electric Company, Return Tube Section, 316 East Ninth Street, Owensboro, Kentucky by July 1, 1967, and a check will be mailed to you for your returns in an amount equal to 50% of the suggested list price.

Obsolete types:	Reimbursement credit to TV service dealers when returned to Owensboro:
6EA4	$3.65
6EF4	3.80
6LC6	3.40

Your full and immediate cooperation will be most appreciated.

Very truly yours,

CHARES A. RICHARDSON,
Acting Manager—Distributor Sales Operation.

GENERAL ELECTRIC CO.,
ELECTRONICS COMPONENTS DIVISION,
TUBE DEPARTMENT,
Owensboro, Ky., June 15, 1967.

To: All tube checker operators currently holding consignments of General Electric receiving tubes.

We are withdrawing from our line the following three tube types which were exclusively manufactured by General Electric:

Obsolete types:	Replace with:
6EA4	6EH4
6EF4	6EJ4
6LC6	6LH6

These are the types involved in General Electric's Major Television Department program for modification of some of its large screen color television sets. This program is referenced in the attached news release, which appeared in daily news media all over the United States on or about May 18, 1967.

As indicated in the news release, the General Electric Company is making scrupulous efforts to insure the reliability and safety of all its television receivers. Consequently, in addition to the set modification alluded to in the news release, maximum effort is being made to recall every last tube of the above-listed types that may now exist in the market place. Only by doing this can we eliminate the possibility of continued utilization of these tubes in those chassis where soft x-radiation might be emitted in excess of desirable levels because of the inadequate shielding in those sets.

All domestic brands of these types should be withdrawn from your stocks for immediate return to us. Upon receipt of your tube returns, a credit will be made to your consignment account.

It is important that returns be made promptly and that all of these tubes be in our possession no later than July 31, 1967 since the U.S. Department of Health has been assured that every effort to do this will be made.

Your cooperation is sincerely appreciated.

Very truly yours,

R. M. DUNCAN,
Manager—Marketing.

GENERAL ELECTRIC CO.,
ELECTRONIC COMPONENTS SALES OPERATION,
Owensboro, Ky., June 15, 1967.

To: All holders of General Electric entertainment receiving tube base working stocks.

Attached is a copy of a letter already sent to you under separate cover concerning the recall of three tube types in the GE entertainment receiving tube line. You will also find attached an invoice billing you for those quantities of the three types in question which are currently part of your base working stock. To clear these tube types from your base working stock, we have billed you at normal distributor cost for the types. Upon prompt return by you of the base working stock quantities, we will issue you a credit at 50% of the current suggested list price for these tubes.

As we have indicated in our previous communications to you, it is imperative that all tubes in these three type designations be immediately withdrawn from the market, so please do not delay in making your return to us. Your cooperation is sincerely appreciated.

Very truly yours,

CHARLES A. RICHARDSON,
Acting Manager—Distributor Sales Operation.

GENERAL ELECTRIC CO.,
CONSUMER ELECTRONICS DIVISION,
MAJOR TELEVISION DEPARTMENT
Syracuse, N.Y., June 23, 1967.

To all General Electric Television Dealers:

The past few weeks have been difficult ones for many General Electric television dealers across the country. Our modification program on large screen color television sets produced between June, 1966 and February of this year, and the associated newspaper publicity have undoubtedly created unnecessary customer concern and added extra burden to your sales force and service facilities.

We appreciate your dedication to the urgency of this program and know that it will pay pay off in improved customer relations and sales in the months and years ahead.

However, there are some problem areas which need your immediate attention.

1. We have a commitment to the U.S. Public Health Service to complete the effective modification of all affected sets in customer homes by the end of July. This is a *reasonable commitment which must be met.* There is no acceptable alternative.

This will require immediate identification of all owners of sets involved in the modification program if you have not already done so, and the scheduling of service calls to complete the rework. Where it does not hamper the effectiveness of your service operation, first priority should be given to modifying table model sets.

2. It is important that your sales force have an understanding of which models are involved in the modification program and enough of the details of the program to be able to reassure customers who are concerned about whether or not their set is involved. They should also be able to advise customers how to obtain prompt modification of their set.

Interested public officials have been making spot checks at dealers showrooms around the country and have reported that some dealers or their salespeople do not seem fully informed about the modification program. Of course, this observation can be damaging to both General Electric Company as a manufacturer and to you as a dealer. Obviously, when you can say that 100% of the sets which you have sold have been modified or that 100% of set owners have been identified, this will be a major advantage in responding to such inquiries.

Every customer inquiry should be viewed as an opportunity to secure another set owner's name and addres. In cases where your service is contracted, dealer/service facility coordination is essential.

3. There seems to be confusion in distinguishing between portable and table model color sets. It should be emphasized that no black and white or PortaColor sets are involved in the modification program.

However, the M258CWD (metal cabinet on tea cart) model is one of the models which *does require* modification. This distinction between PortaColor and the M258 should be made when responding to customer inquiries about involvement of portable color sets.

Specific questions relating to any of these problem areas or to other phases of the KC model large screen color television modification program should be referred to your Sales Counselor.

We cannot overemphasize the importance of this program and its timely completion. For this reason, your Distributor will be following you very closely during the remaining weeks to assure that all modifications are completed on schedule. You can help by submitting weekly rework reports promptly. This will facilitate crediting you for this work and permit us to accurately track our program.

R. E. CHRISTIE,
General Manager, Major Television Department.

ENCLOSURE B



ITEM 1



ITEM 2

HIGH VOLTAGE REGULATOR TUBE TYPES 6EA4, 6EF4 AND 6LC6 HAVE BEEN SUPERSEDED BY NEW TYPES AS FOLLOWS:

USE 6EH4 TO REPLACE 6EA4
USE 6EJ4 TO REPLACE 6EF4
USE 6LH6 TO REPLACE 6LC6

WHEN REPLACING THESE REGULATOR TUBES THE HIGH VOLTAGE SHOULD BE ADJUSTED TO 24.5 KV (NOT TO EXCEED 25.0 KV), TO ASSURE MAXIMUM RELIABILITY.

ITEM 3

Mr. Moss. Is it possible that in some subsequent servicing of these sets a serviceman could modify them to recreate the problem of X-radiation? You have indicated that you had two types of correction, one undertaken at the factory which was a different type than that undertaken in the field where you used a self-shielded or internally shielded tube. Will you describe the first correction, the one in the factory.

Mr. CHRISTIE. In the first instance we added secondary shielding around the tube. There were two reasons for this. First, we had to design and develop a brandnew tube that would contain the radiation for the field modification program, and so in the factory we put in additional shielding that was permanently attached to the chassis, so that it could not be removed.

It was during December 15 that this shielding was discussed with the New York Department of Labor. In the field modification program, however, the considerations here were rather large.

We are dealing with a lot of service people and their ability to apply metal shielding with drilling, screwing, riveting, and the like. It appeared to us to be a rather difficult practice. We could not guarantee that this would do it satisfactorily and so in our mind there was only one way that we could possibly do this to prevent these from dropping back, if you will, to the original problem, and that was to design and manufacture a special tube that would be merely a retubing situation in the field for which our service people are adequately trained and can do.

It also gave us the opportunity, if you will, to retrieve from the field those tubes that were in the sets and therefore we would not proliferate the problem and we could eliminate it.

Mr. Moss. Ultimately here in the evolution of this problem it was necessary to give a public notice. There were several thousand sets that you could not locate through the records of yourself and your distributor and dealer organization. Do you think as a matter of public policy for the future that it is a wiser policy to give notification in these instances as it has been through the action of the Congress in the auto safety legislation to require that the auto industry give notice of defects?

Mr. LAKE. Sir, may I answer that?

Mr. Moss. Yes.

Mr. LAKE. Because we dedicated some not insignificant time to the various aspects of this as they are related to the radiation problem. I think the fact that there was radiation involved certainly was a factor that played a predominant role in our evaluation.

We didn't know much about it, quite frankly. It was a subject that we had to learn quite a bit about very rapidly. We talked with our own medical director. We saw we had to go further. We got our radiological specialist involved. We discussed it with him. He suggested we get outside experts. We did. We discussed it with them. Their evaluation of our problem was that it didn't present a problem insofar as health was concerned, that it presented an emotional problem and they said that if you make a blast it will cause more harm than good because you won't be able to gear up to effectuate the change in the field.

This involved, as Mr. Christie said, the development of an alternative of a new tube. We didn't have the quantity of tubes available if we had made an immediate public announcement. We figured we would have been inundated with requests for modification that we could not effectuate.

Therefore, we worked with our receiving tube department in Owensboro to develop this tube and the supply of this tube and they put in extra effort to get a significant supply of this tube so that we could fill the channels and get out there in the field so that we could effectuate the change as opposed to facing a situation that we would have some thousands of persons calling us and not being able to do anything.

This was the consideration in this respect. I can't talk for general policy as to whether or not it would be advisable right across the board, but we very carefully considered our own situation.

Mr. Moss. You felt that the very limited part of the public involved here was better served in continuing to use these receivers without the knowledge of the potential hazards than they would have been had they gained that knowledge and had the free choice of discontinuing use until modification or correction was effected?

Mr. LAKE. Only in reliance upon what we thought was a better judgment than ours of three what we consider outstanding medical experts who told us that there was no such hazard as we hear from some quarters today, and we have consistently been so advised, Mr. Moss.

Mr. Moss. That is a matter which I sincerely trust and am quite certain will be gone into with great thoroughness with my colleague, Mr. Jarman.

Mr. LAKE. For your purposes, sir, I would hope that you appreciate that this has been a cornerstone of our field modification program and of our actions and we haven't gone precipitously without giving significant consideration.

Mr. Moss. I recognize that. I don't question but the hazard created by inadvertence is as deadly as the hazard created by design or by outright carelessness and we are concerned, as I know you are, with being able to reassure the consuming public that the products they use are, in fact, safe products.

Mr. LAKE. I might say, sir, as we discussed this with the Public Health Service there was no disagreement with our approach that this would be the more effective manner of getting at the problem in the field in replacing the tubes in an orderly manner as opposed to some other.

Mr. Moss. You mean Public Health advised you or concurred with you that the quiet operation was preferable to a public announcement?

Mr. LAKE. We have discussed this on occasion and this is exactly the impression I draw from my own personal discussions and others; yes, sir.

Mr. Moss. Was that communicated orally or by some written confirmation?

Mr. LAKE. No; it was just orally, sir.

Mr. Moss. There seems to be an area of disagreement. I notice Mr. Terrill is nodding in the negative. Is that correct?

Mr. TERRILL. Yes, sir. I think it ought to be made clear since some of the public statements were ambiguous on this point that from the time that this was brought to our attention we have consistently told General Electric that we thought it should be made public and it would be made public whether we did it or not and we never even considered that it shouldn't be made public.

We have told them if they didn't make it public that we would take it to the Secretary or somebody else.

Mr. MOSS. Did you do it in any written communications?

Mr. TERRILL. Well, of course the first time I met with General Electric staff came to my office, he just told me about the sets qualitatively. I told Mr. Healy that a public statement of some type would be made as soon as we had data. Our main discussions with General Electric early in May and the middle of May were in terms of how you can make these things public clearly since the types of sets that were involved were rather ambiguous. They didn't have serial numbers.

Mr. MOSS. Isn't that a rather unusual procedure for a set not to have a serial number? Aren't there some jurisdictions in this Nation where it is a requirement of law that they have a serial number?

Mr. CHRISTIE. I believe that there is a designation on each set. We certainly have it when we bring it back, the type and the number of the set. Now, this has not been true of our practice in the past, but it has been in this set as I remember it.

Mr. MOSS. You said in identification, the model number.

Mr. CHRISTIE. Yes.

Mr. MOSS. But no serial number.

Mr. CHRISTIE. We have a coding that would tell us when it was produced and manufactured. An exact number I will have to check. I thought it was there, an exact number, but I would have to go back and check. Now it is codified so the period of production is designated. This is required, of course, for many reasons.

Mr. MOSS. You are the production specialist in this team here, is that correct?

Mr. SCARFF. Mr. Christie manages the department, Mr. Chairman.

Mr. MOSS. To what extent is there a hazard to the public through the increase of the voltage during service or repairing of these large screen sets?

Mr. CHRISTIE. Let me start out first by saying that you have asked me for really a medical opinion and I am not qualified——

Mr. MOSS. No, I am not asking for a medical opinion.

Mr. CHRISTIE. We have consulted with our medical specialist in this regard as we did out factory employees and our customers. We have estimated the situation with our experts in measuring radiation and you must appreciate that our sets are spread across the country and the exposure therefore is rather slight when considering 70,000 service people.

From our investigation there was little, if any, exposure of the nature we are talking about and so we have as a result——

Mr. MOSS. I don't think you understand my question. I am now forgetting about the 154,000 sets. I am talking generally of the extent to which a hazard might be increased or a hazard created as a result of

modifications brought about through repair of a set by a serviceman where he increases the voltage.

Mr. CHRISTIE. I am sorry. In this case there is the opportunity for a serviceman to raise the voltage and drive circuit of cathode ray tubes. In our instructions we have told them that this must not exceed by a certain level on our sets.

Mr. Moss. But they are free, if they choose to ignore that warning, to go ahead and increase the voltage, are they not?

Mr. CHRISTIE. That is true on our production that we are considering here. I would like to add that as part of this safety program that we are now concerned with we have put what is called the voltage hold down circuit in our set.

Mr. Moss. I am talking about the previously manufactured sets generally in the industry.

Mr. CHRISTIE. I don't feel that I am technically prepared to answer that question.

Mr. Moss. Mr. Dixon.

Mr. DIXON. Mr. Scarff, is this an innovation of GE's, the voltage hold down, since this problem first arose?

Mr. CHRISTIE. I can't say that it is a patentable innovation. It is a new circuit for us and took some considerable design time to design it.

Mr. DIXON. Do you know whether any of your competitors are using it?

Mr. CHRISTIE. I can't say that they do or they don't.

Mr. DIXON. Would this be a potential circuit to retrofit on existing television sets?

Mr. CHRISTIE. With the circuit that we have and considering the past production we cannot apply the circuit to the older sets.

Mr. DIXON. You say you cannot.

Mr. CHRISTIE. Cannot.

Mr. DIXON. Is it fair to conclude that you don't know whether or not hazards are either increased or created throughout the country by bench repair in the thousands of shops and centers that repair television sets?

Mr. CHRISTIE. I would say that I don't believe that hazards are created by a proficient repair shop. In our service organization and I am sure the other service organizations in the country, training materials and the like I think would be such as to educate the serviceman not to create the additional hazards.

Mr. DIXON. What surveillance and testing or review procedures do you have to support that conclusion?

Mr. CHRISTIE. We have recently run a survey of training material generally available for service people.

Mr. DIXON. Is there a manual?

Mr. CHRISTIE. Yes.

Mr. DIXON. Anything else?

Mr. CHRISTIE. In that regard, sir?

Mr. DIXON. Yes, sir.

Mr. CHRISTIE. In our own case we have a staff of people from the factory who are running training manuals on a continual basis and we issue to the field periodically as to how and what not to do in servicing products.

Mr. DIXON. Mr. Scarff, you said that the emission that comes from the shunt voltage regulator which has been under discussion here came through 1 square inch out of 5,000 square inches in this particular line, is that right?

Mr. SCARFF. I said this could occur that way, yes.

Mr. DIXON. What did you do to determine what if anything was emitting from the other 4,999 square inches?

Mr. SCARFF. Well as soon as we knew we had a problem obviously our people took a much closer look at the whole set and the radiation measurement people are checking the entire area of course.

Mr. DIXON. And I presume that you ran a fully cubed test on the Porta Color set to conclude that you have no problem there? In other words, do you measure the entire surface of Porta Color sets and other GE sets before you say you have no problem.

Mr. SCARFF. I am hesitating, sir, to divide my own personal experience in the last month with what my information has been and that set is not produced in Syracuse. Mr. Christie, can you comment on that?

Mr. CHRISTIE. I would be glad to comment on this. First, the Porta Color set does not have a voltage regulator tube, point 1.

Mr. DIXON. Let me interrupt there. I believe it has been established that you could have X-radiation without even having a voltage regulator in the set. We have some X-radiation from other sources within television sets.

Mr. CHRISTIE. We have examined Porta Color both in the design phase and in production and we can assure you that radiation is minimal and below standard in this regard.

Mr. DIXON. The reason that I have raised the Porta Color—it could be any other set and it could be by any other manufacturer—is a report which came out in today's issue of Broadcasting. It contains an article referring to Mr. Nelson of the Public Health Service, who is here this morning with Dr. Terrill, and as of last week no excessive radiation had been found in the Porta Color sets. But, as I understand it, this test in their hands is just getting underway, so that you could not conclude one way or the other whether you have a problem in Porta Color or some other type of set.

Would you care to comment on that?

Mr. LAKE. I can comment on that. Similarly to the statement I made to Mr. Moss before, my comment is that when we discovered this problem Mr. Wilson, the precedessor to Mr. Scarff, called the department manager at our small screen, Personal Television Department and asked him specifically to check the Porta Color sets and we received the assurance that there was no radiation emitting from those sets.

It is certainly within the 0.5 limit.

Mr. Moss. I would like to interject that I sincerely hope that is the case because I have one.

Mr. DIXON. You mention 0.5. Again there is some confusion I believe in these various measures. The table which the committee received from Dr. Terrill has one tube emitting greater than 50,000 milliroentgens per hour. I believe you used a high figure of 4,000.

Mr. LAKE. Yes.

Mr. DIXON. The table has four tubes emitting between 5,000 and 50,000 milliroentgens and 11 tubes between 500 and 5,000 milliroent-

gens. Are you aware of the differences between your figures and Dr. Terrill's, and have you had an opportunity to see this chart?

Mr. LAKE. Yes, sir. This indicates the complexity of the problem which I am relatively certain myself in the final analysis is going to be settled by experts in the field, but in laymanlike language permit me to attempt to describe what we feel this difference is. The beam that emits from some of our sets is say for the sake of discussion 3 inches by 3 inches.

There is a measuring technique employed whereby you average the intensity of that emission. It is more intense in the center and as it radiates out to the side it gets of lesser intensity.

Our measurement technique, as reviewed with Mr. Braestrup was to average that beam, the whole beam, and we came up with a high in the small number of sets of 4,000. The Public Health Service has taken, as I understand it, the smaller more intense beam in the center of approximately one-sixteenth of an inch and they have measured those intensities and those are the ones that they are discussing.

Since we noted that they were getting higher measurements from the very same tubes that we supplied them and have measured we have arranged for our measurement experts to get in touch with them and we have been discussing it and attempting to be cooperative in a fashion to see how you can polarize this for somebody to understand it in very simple fashion because it does seem pretty complicated.

Mr. MOSS. This really points up the need for standards to be supplied in testing to determine the techniques which will be utilized in arriving at proper control procedures both in the manfacture, and I suppose that this is a case where modification can occur through servicing, at the service level as well.

Mr. LAKE. It would certainly seem, sir, if two bodies come up with data like this and with all the variables of testing instruments and testing techniques why there should be some uniformity as to how we approach it and how you extrapolate it; yes, sir.

Mr. DIXON. Is General Electric a member of Underwriters Lab?

Mr. CHRISTIE. Yes.

Mr. DIXON. You are?

Mr. CHRISTIE. We subscribe to their services.

Mr. DIXON. I appreciate the discussion on averaging that you gave us as to how you could have 4,000 and Dr. Terrill got 50,000 for the same emission depending on whether you go to the center of it or the edge of it, but with GE supporting a 0.5 milliroentgen versus a 2.5 milliroentgen standard has there been some difference between the international recommendations and the national recommendations?

Mr. LAKE. I don't know if it is a matter of supporting one or the other. GE subscribes to the view to get the radiation down to as low a percentage as we possibly can. If this means to 0.5 and lower, yes.

Mr. DIXON. The most desired level would be zero, would it not?

Mr. LAKE. Yes, sir.

Mr. DIXON. That is all, Mr. Chairman.

Mr. KEITH. I have some concern about your expressing your lack of knowledge of this because of your recent assignment and I wonder why GE would not have as their chief witness the man who knew the most about this subject.

Mr. SCARFF. Mr. Keith, I could comment that of course we can produce Mr. Wilson if this is desired, but Mr. Christie is the general manager of the department in which this entire activity took place. Mr. Lake has followed this as you can obviously appreciate from his position as legal counsel and from my viewpoint, my opinion, I have two gentlemen with me that are as responsive to any question you may have as anybody we could produce.

Mr. KEITH. It seems a little strange. When was Mr. Wilson transferred? Was it a promotion?

Mr. SCARFF. Yes. We realined four divisions as of July 1. I moved, he moved and two other division managers moved and this was a normal type of realinement of management that goes on in a company such as ours.

Mr. KEITH. You moved somebody from a lamp division.

Mr. SCARFF. I came from the Lamp Division, sir.

Mr. KEITH. Yes, and you moved the man who had been with X-rays, which are more closely allied to lamps, to the Industrial Drives Systems Division.

Mr. SCARFF. Mr. Wilson had previous experience in his career in that area.

Mr. KEITH. He had previous experience in the Lamp Division prior to going into X-rays.

Mr. SCARFF. No. Mr. Wilson wasn't associated with the Lamp Division. I came from there.

Mr. KEITH. I understand that.

Mr. SCARFF. No; he had not had experience in the lamp operation.

Mr. KEITH. What had been his previous experience?

Mr. SCARFF. I can't tell you exactly. I know that he had experience in what we generally characterize as the apparatus area and the Industrial Drives Division that he is heading up now has a portion of that area as compared to what we would call the consumer goods area.

Mr. KEITH. Did the company take any disciplinary action as a result of this flaw in their production of color sets?

Mr. SCARFF. I am not aware that we did. I have been interested in reviewing this with Mr. Christie as to those involved in this mistake. I think to respond to the intent of your question this mistake was made quite a way down the line and as a matter of fact some of the engineers associated with this both at the point where the mistake was made and up the line with their immediate supervision have moved for one reason or another but to be very frank I am not sure we moved them because of this mistake.

I think to be more generally responsive to your question that as we stated in the beginning this was an error that our systems should have caught and whether we disciplined these gentlemen or not, the facts of the matter are that a mistake was made and it did not come to the attention of the proper people soon enough.

Mr. KEITH. I don't think it is really typical of corporate executives to indicate mistakes that take place far down the line shouldn't be the responsibility of superiors all the way up and down the line.

Mr. SCARFF. Yes, sir; they are the responsibility of the superior. I thing this has to be assumed.

Mr. KEITH. This was not brought to the attention of the higher authorities in time for them to exercise their normal executive duties.

Mr. SCARFF. No, we have gone to——

Mr. KEITH. I don't want to pursue it any more. I think there has been recently in another area similar evidence offered of a corporate attitude comparable to this.

Mr. SCARFF. Mr. Keith, I would like to add if I may that through our organization structure of getting the elements of our business down to manageable pieces as it were, into departments where one man can properly manage that type of business, that we have done everything that we can to avoid this type of situation.

I would submit that with the great number of businesses we are in, the size of this total corporation, that this is a unique error because there are so few of these. We admit to this error but I have to say on the other side in thousands upon thousands of cases this system is working and working very well.

Mr. Moss. I want to thank you gentlemen, if there are no other questions, for your appearance.

The committee will now recess, to reconvene at 2 o'clock, at which time Mr. E. William Henry, of the Electronic Industries Association, will be the opening witness.

(Whereupon, at 12:33 p.m., the subcommittee recessed, to reconvene at 2 p.m., the same day.)

AFTER RECESS

(The subcommittee reconvened at 2 p.m., Hon. John E. Moss, chairman of the subcommittee, presiding.)

Mr. Moss. The subcommittee will be in order.

At this time, we would like to hear from Mr. E. William Henry on behalf of the Electronic Industries Association.

Mr. HENRY. Thank you, Mr. Chairman.

If I may, Mr. Chairman, I have some industry representatives with me.

Mr. Moss. Certainly. Introduce them for the record.

Mr. HENRY. If they might come up to the table with me.

Mr. Moss. We welcome you in your new role before this subcommittee. I want to express my personal pleasure. I enjoyed the several years when you appeared before us as Chairman of the Federal Communications Commission.

Mr. HENRY. Thank you, sir. The feeling is mutual. I am happy to be here in my new role.

Mr. Chairman, my statement today is made on behalf of U.S. television manufacturers, most of who are members of the Electronic Industries Association (EIA).

With me are engineering representatives of the industry who are here to answer questions and otherwise assist the committee in its deliberations today.

If I may, I would like to introduce them at this time.

On my immediate left is Mr. James D. Seacrest, who is the executive vice president of the Electronic Industries Association, EIA. On my far left is Mr. Hathan W. Aram. On my far right is Mr. Harris O. Wood. On my immediate right is Dr. John Sheldon.

These gentlemen are representatives of the Select Industry Advisory Committee on X-radiation, and are here to assist the committee today in any way that the committee would like them to.

I thought with your permission, Mr. Chairman, that I would simply read my statement and then be available for questions.

Mr. Moss. Certainly.

STATEMENT OF E. WILLIAM HENRY, REPRESENTING THE ELECTRONIC INDUSTRIES ASSOCIATION; ACCOMPANIED BY JAMES D. SEACREST, EXECUTIVE VICE PRESIDENT, EIA; HATHAN W. ARAM, HARRIS 0. WOOD, AND DR. JOHN SHELDON

Mr. HENRY. On April 17 of this year, the Consumer Products Division of the EIA submitted to this committee a statement on the resolution to establish a National Commission on Product Safety (see p. 303), which is also the subject of today's hearing. This statement pledged "the backing and support of the consumer electronics industry for (the) objectives" of this Commission.

It also welcomed the "proposed inquiry into the area of safety of consumer electronic products" and pledged "its full cooperation" in working with the new Commission. I am pleased now to reiterate this pledge, and to assure you that the consumer electronics industry is united in its support.

The EIA statement of April 17 also gave the background of the recent growth of this industry, which is well known and which need not be repeated here. Also outlined in that statement were the self-regulatory efforts of this industry to seek and, indeed, to achieve an enviable record of product safety.

The highlights of this record also need no repetition, but it is certainly worth noting again for the record. It is an achievement of progress, service and safety on which the industry looks with understandable pride.

Recently, following the hearing in which the EIA's prior statement was submitted, considerable attention has been focused on the fact that the General Electric Co. found it necessary to modify a large number of its color television receivers because of "soft X-radiation in excess of desired levels."

Investigation has disclosed that this is an isolated case and is not representative of television set operation. This fact is mentioned at the outset in order to place the remainder of our statement in proper perspective.

Questions have also recently been raised concerning the relationship of X-radiation to the public health and safety, and the appropriateness of the industry's performance standards which are aimed at maintaining such radiation well within acceptable levels.

We recognize the validity of both these questions, and their relationship to the public interest. We understand that the principal focus of this hearing is on the latter—X-radiation as it relates to the technical aspects of color television set operation—and it is to this that our statement will be primarily addressed.

We would like to express our appreciation for the informed and instructive concern that has been expressed on this subject by members of this committee and other Members of Congress. Radiation is a matter to which the industry has devoted, and is presently devoting, substantial effort and study. We believe that the data collected thus far clearly indicate that television sets normally operate within acceptable levels of radiation.

However, we welcome all additional efforts, including legislative inquiry, that might lead to more comprehensive information on the subject.

In your continuing assessment of the provisions of the resolution to establish a National Commission on Product Safety, we are pleased that you are drawing upon our experience, and we offer you our full cooperation in this regard.

At this point, we would like to make two observations in the hope of clarifying this committee's inquiry into the technical aspects of television set operation.

Any question concerning X-radiation levels is normally raised only with respect to color television sets. This is because X-radiation is directly related to the voltage utilized in a television set. Black and white sets operate at lower voltage levels, and, we believe, need not be considered in this context.

Also, as the General Electric situation has indicated, shunt regulator tubes (used in most but not all sets) can produce X-radiation. However, such radiation is kept well within acceptable levels by protective shielding which industry tests clearly demonstrate is an effective safeguard.

These tests were conducted recently by the set manufacturers at the request of the Public Health Service's National Center for Radiological Health. The data there developed consisted of X-radiation measurements on color television sets made by companies representing 95 percent of industry sales.

These tests showed that under normal operating conditions, the more than 500 sets measured fell within acceptable levels of X-radiation. These test results, along with their underlying data, have been submitted to Director James G. Terrill, Jr., of the National Center for Radiological Health.

The industry will continue to work cooperatively with his office to develop additional data and otherwise to assist his efforts in any way we can.

This brings us to the question of the standards presently established for the control of television set X-radiation.

Underwriters' Laboratories has, over the years, established standards of product safety, including performance standards for television set X-radiation. Each set manufacturer has also established its own individual performance standards and design criteria in this area.

The industry has been aware of, and has observed, the Underwriters' Laboratories requirements of 2.5 milliroentgens per hour at 5 centimeters (approximately 2 inches) from any surface of a receiver. Television set manufacturers have designed their sets for operation well under this level. They have also recognized as an appropriate guideline the recommendations of the National Council on Radiation Protection and Measurements of 0.5 milliroentgens per hour at 5 centimeters under normal operating conditions.

As noted above, the sets recently tested by set manufacturers fell within this 0.5 milliroentgen level under normal operating conditions. This demonstrates an existing adherence to this guideline by the industry as a whole.

One comparison, we think, gives a good indication of the levels of X-radiation with which we are here concerned. The 0.5 milliroentgen level measured at 2 inches from the set is calculated to assure that the population is exposed to much less X-radiation from television sets than in their everyday existence from natural background sources—the normal environment of sky, land, buildings, et cetera. This level, the 0.5 level, is also such that even under extremely abnormal and unlikely operating conditions, where radiation moderately in excess of this level might occur, exposure would not be unduly increased. There are a number of indications that any possible exposure would be limited by several factors, including the short duration of high line voltage, an unacceptable picture, or failure of other set components.

The industry thus believes that its design criteria and radiation guidelines have proved effective. However, in its continuing examination of these matters and in light of the increased interest that has been expressed, the industry has expanded and accelerated its efforts to obtain and utilize the latest available information.

It has appointed a select committee of industry technical experts to evaluate these matters, and to make specific further recommendations, based on its findings, to the industry. It has sought the assistance of independent research organizations to aid in these efforts, with the understanding that any additional information developed will be not only for the use of the industry, but made available to interested Government officials and agencies.

It is reexamining its testing procedures to assure use of the most modern techniques and equipment. It is developing expanded procedures and instructions for the guidance of production and service personnel.

In summary, Mr. Chairman, the television set manufacturing industry believes that it has produced a product which embodies high standards of quality, performance, and consumer protection.

Consumer acceptance of our product has been phenomenal. Television is the public's main source of news, entertainment, and information. We recognize our responsibility to these millions of television viewers and to the thousands whose livelihood is directly dependent upon set production, sales, and servicing.

In light of questions that have been raised—which are the subject of today's hearing—we also recognize the need to reassure the American public that their confidence in set safety has been justified. Our test data support this confidence, and our increased efforts will further strengthen it.

We welcome any additional guidance that will come from the National Commission on Product Safety, and we again pledge our full support for its work.

Thank you.

Mr. Moss. Thank you.

Mr. Stuckey.

Mr. Stuckey. No questions, Mr. Chairman.

Mr. Moss. Mr. Jarman, do you have any questions?

Mr. Jarman. No questions.

Mr. Moss. Mr. Dixon?

Mr. Dixon. Yes, sir.

Mr. Henry, you say on page 3 that "any question concerning X-radiation levels is normally raised with respect to colored television sets."

Does that mean that there could be black-and-white sets, not normally but at some other time, that could have X-radiation problems?

Mr. HENRY. Mr. Dixon, we don't think that there is an X-radiation problem connected with black-and-white sets. We use the word "normally" because in this complex and complicated area I suppose it is hard to draw absolutes of any kind but we do not think it is a problem; we do not believe that it needs to be considered in this context.

Mr. DIXON. Further down on page 3 you stated that "these tests showed that under normal operating conditions the more than 500 sets measured fell within acceptable levels."

Did you have some experience where under abnormal operating conditions some of these sets did not fall within acceptable levels?

Mr. HENRY. Well, we used the phrase "normal operating conditions" in several instances in this statement. We do so for two reasons: One, that the recommendation of the National Council on Radiation Protects, the NCRP, has issued a guideline and a recommendation for a performance standard that is a half millivolt-roentgen at an hour from 2 centimeters from any surface of the set under normal operation, under normal operating conditions. Those of the words of the NCRP. We simply take those over into our statement in saying that we meet this recommendation.

Secondly, we use that phrase because in our tests all of the sets tested did meet it. In some instances, there were tests in which they were artificially created in the laboratory, highly unusual and highly unlikely combination of circumstances. Where you had a failure of the voltage regulating mechanism or a prolonged increase of high voltage, you could get some X-radiation moderately in excess of this.

Mr. DIXON. Then on page 4, I assume you are talking about the 500 sets recently tested by set manufacturers which fell within this 0.5 milliroentgen level under normal operating conditions.

Now, this morning we had on the record testimony of 5 to—what was it—5 to 4,000, and then I read from the table submitted by Dr. Terrill where you have one tube going as high as 50,000 milliroentgens per hour, four between 5,000 and 50,000, and 11 between 500 and 5,000.

Now, 16 of 34 tubes emitted more than 500 milligrams per hour. Is that the same test that was performed on the 500 sets tested by the manufacturer?

Mr. HENRY. It was not the same test. As I understand it, the test to which you have just referred and which involved the GE sets were tests of shunt regulator tubes. Our tests involved the complete set. We made measurements on all six sides and the results of our tests included all possible sources of X-radiation in the set. Our highest figure even under the most extreme of unlikely conditions in contrast to the 4,000 milliroentgens or whatever the figure was this morning was 27 milliroentgens.

Mr. DIXON. Those sets were GE sets; is that right?

Mr. HENRY. My understanding is that they were but I would like Mr. Wood here to confirm that.

Mr. DIXON. Would you, and would you tell us whether they have shunt voltage regulators in them and if they were of the same type and location in the sets?

Mr. WOOD. The sets which we reported on did not include the sets that GE was answering and describing this morning. The sets that we have measurements on for the most part did include shunt regulators. There were some that did not.

Mr. DIXON. Mr. Henry, the six sides that you speak of—first, when you said 27 was the highest figure, is that an average from the six sides or is that in any one point?

Mr. HENRY. That is any one point that was found. That was the highest, the worst case, and it involved one set and one point on that set, one area on that set.

Mr. DIXON. How large would that area be?

Mr. HENRY. I am not sure. Again I will ask Mr. Wood or Dr. Sheldon if they can answer that.

Mr. WOOD. Actually, in performing the tests, the equipment that was used was surveyed, the complete sides, until they found in general the most critical area; that is, the word X-radiation was emitting from the receiver and then they measured that particular area where the rays were ending and the level at which Mr. Henry referenced is the worst case level under the measurements of all sides of the receiver.

Mr. DIXON. Where would that be, in front of the picture tube ordinarily, or could it be any place on the set?

Mr. WOOD. Depending on the source, it could be anywhere. It could be the front; it could be the back of the set; the rear; it could be the side, depending on what the source was; or in some cases the front.

Are you referring specifically to 27?

Mr. DIXON. Yes; take the 27.

Mr. WOOD. I belive it was on the top of the set. I can check that.

Mr. DIXON. The top of the set.

Mr. MOSS. Let the record show that the committee has received this study of the sets for its file.

Mr. DIXON. That is all, Mr. Chairman.

Mr. MOSS. Any further questions?

Mr. Henry, is the service industry represented in the EIA?

Mr. HENRY. Mr. Seacrest, the executive vice president of EIA, is here and I think he could best answer that, Mr. Chairman.

Mr. MOSS. Mr. Seacrest.

Mr. SEACREST. Mr. Chairman, the service industry, as such, is not represented, are not members of the association. However, most of our members particularly in the Consumer Products Division have their own service people who direct their service operations. We do have a service committee, for instance, which has developed manuals for service technician training and that sort of thing but we do not intend to represent the service industry, as such.

Mr. MOSS. To the extent that your members have their own service organizations, isn't it usually for a period covered either by a service contract or a guarantee?

Mr. SEACREST. Well, when I said that the members had their own service organizations, I meant in a matter of handling the service in the field. Now, that may be done in some cases by independent servicemen. Of course, some companies like RCA have their own service

organization; others to a lesser extent, but they all have service managers who direct the service operations and send instructions even to independent servicemen.

Mr. Moss. Are we correctly informed that sets in the course of servicing or repair can be modified to increase radiation hazard?

Mr. Henry. I would like to try my hand at that one, Mr. Chairman, and get some further supplementation if it is necessary.

Each setup, as I understand it, has available to a serviceman an adjustment which usually is a screwdriver adjustment that will allow him to change the voltage to increase it or to lower it. This is necessary because sometimes it will come out of adjustment and he will have to bring it back; sometimes it will be too low and he will have to bring it up to the rated voltage.

I believe you will find as we have found where we have investigated it so far that the service manuals to all servicemen by whatever channels they may come indicate that the sets, one of the first things that should be done is that the voltage should be adjusted to the rated voltage for that set. It is true, to answer your question specifically, there is a manual adjusment by which you can raise and lower the voltage but that is necessary to the proper servicing of the set.

Mr. Moss. How adequate is the notice to the service industry of the significance of keeping voltage at the rated levels?

Mr. Henry. Well, I think it is fair to say that the servicemen are aware of the rate voltage and that it should be kept there now.

Mr. Moss. Are they aware of the critical nature of it and the fact that it could create radiation emissions at a level greater than that recommended for safe operation?

Mr. Henry. Well, we don't know the answer to that question, Mr. Chairman; that is one of the things we are investigating; and we are doing everything we can to assure that they are now aware of it. I think it is fair to say that they probably are not as aware as they should be of the connection between voltage and the possibility of excessive X-radiation.

Mr. Moss. Will you inform the committee when a conclusion has been reached by your industry committee as to the steps which should be taken to more adequately inform the service personnel?

Mr. Henry. We would, indeed, but I would add we are now undertaking such steps as we think are necessary to be sure that that information is being adequately stressed.

Mr. Moss. Is there adequate standardization within the industry of the equipment and the procedures utilized in monitoring the production line sets or chassis to determine levels of radiation which prevent a reoccurrence of the General Electric instance?

Mr. Henry. We think so. We think the best evidence of that is our test data plus the fact that as far as we know the General Electric instance is the only one in which this kind of a problem has occurred. I will ask Mr. Wood and Mr. Aram to maybe elaborate on that as to the production techniques.

Mr. Aram, do you want to talk to that?

Mr. Aram. Part of the question was, I believe, the adequacy of instrumentation and I think there are adequately precise commercially available instruments that are well known to the receiver manufacturers.

Mr. Moss. No; that would be the wrong emphasis on my question. My question was, the industry at the moment, are they being utilized and is there a degree of standard procedure and standard instrumentation within the industry for the monitoring of production line operation in the manufacture of sets?

Mr. ARAM. I believe the approach to the problem has been one of sampling or of audit, and before that even of design test to insure that the radiation limits wouldn't be exceeded, rather than on a 100 percent factory test on every set. So far as I know, that is not done.

Mr. Moss. Of course, we have a rather dramatic instance of the failure of a system by very responsible manufacturers.

Have we reason to believe that it was a great error in their normal operation or was it the case where their normal operation could permit this sort of problem to arise, and, if so, was their operation sufficiently similar to other industry manufacturers that we could have it happen in other manufacturers' production lines?

Mr. ARAM. I could not speak on the reason for nor the background of the incident to which you refer but I think I can say that the industry in general is now much more conscious of the problem and right now many investigations are going on as to the practicality and possibility of instituting production tests of the type you speak of.

Mr. HENRY. Mr. Chairman, may I add to that?

Mr. Moss. Certainly, you may.

Mr. HENRY. We did conduct a survey with respect to the similar tubes that were involved in the General Electric situation, that is, the shunt regulator tube, and in every instance we believe that shielding is placed on this tube adequate enough to give protection.

Mr. Moss. Internal shielding or shielding affixed to the set?

Mr. HENRY. I am sorry?

Mr. Moss. Is it internal shielding in the tube or is the shielding affixed to the set?

Mr. HENRY. I think in many, if not most, instances, it is both. In some, it is primarily external shielding.

Mr. Moss. If it is external, is there adequate notice in the service manuals of the importance of replacing the shielding upon the servicing of a set?

Mr. HENRY. Well, again I think that there is plenty of notice in the service manuals to this effect. However, there is insufficient reference to the reason for it as it relates to X-radiation and this is one of the things we are very conscious of and working on.

Mr. Moss. I asked about broadcast equipment. Many of your members produce not only receiving equipment but broadcast equipment as well. To what extent was testing of equipment taken to determine whether there is a hazard here involved?

Mr. HENRY. Could you answer that?

Mr. ARAM. I am sorry. I cannot answer that. I have no connection with the broadcast equipment business.

Mr. Moss. Do any of your panel have knowledge on that point?

Mr. WOOD. I am sorry; I do not, either.

Mr. HENRY. The numbers of this Consumer Products Division, Mr. Chairman, which are represented here today are not generally in this area and therefore we, too, have been concentrating on the television

set receivers rather than on the broadcast equipment. That is more or less a controlled situation.

Mr. Moss. Are there any further questions?

If not, I want to thank you gentlemen for your appearance.

We will now hear from Mr. Baron Whitaker, president of the Underwriters' Laboratories, Inc., accompanied by Leonard H. Horn, a nucleonics engineer.

STATEMENT OF BARON WHITAKER, PRESIDENT, UNDERWRITERS' LABORATORIES; ACCOMPANIED BY LEONARD H. HORN, NUCLEONICS ENGINEER

Mr. WHITAKER. Mr. Chairman, members of the subcommittee, I am Baron Whitaker, president of the Underwriters' Laboratories.

I have with me from Underwriters' Laboratories, Mr. Leonard Horn, our nucleonics engineer, who will discuss our relationship with the radio and television industry, with particular reference to television receivers.

I would like to have Mr. Horn read the prepared statement at this point.

Mr. Moss. We would be glad to have the statement at this point.

Mr. HORN. Mr. Chairman and members of the subcommittee, my name is Leonard H. Horn.

My current assignment is nucleonics engineer with Underwriters' Laboratories, Inc., by whom I have been employed for approximately 38 years. During most of this time, I have been in charge of the testing of radio and television receivers and related electronic appliances at our Chicago office.

In 1955, I spent a year of study at Argonne National Laboratory, the University of Michigan, and North Carolina State College in connection with nuclear safety problems. As nucleonics engineer, I am involved with radiation and other matters relating to the use of atomic energy.

I am pleased to be here at the invitation of your subcommittee to tell you about the operations of Underwriters' Laboratories, Inc., as they pertain to the safety aspects of household and commercial television receivers, with particular reference to the potential hazards of ionizing radiation.

Since 1939, the makers of domestic and commercial radio and television receiving appliances have voluntarily submitted their products to Underwriters' Laboratories, Inc., for recognition as complying with the laboratories' requirements. The published records of the Electronic Industries Association indicate that since 1947 approximately 120 million television receivers have been produced in this country.

The records further indicate that approximately 11,700,000 color receivers have been produced in the period from January 1964 through May 1967. It is estimated that 95 percent of these have been recognized as complying with the laboratories' requirements.

The requirements used by Underwriters Laboratories, Inc., in its judgment of television receivers are contained in our Standard for Radio and Television Receiving Appliances (copy in committee files). These requirements deal with safeguards to be provided from potential hazards of fire, electric shock, implosion, and ionizing radiation.

In normal practice, a manufacturer designs and submits at one time a series of models—called a line—which represents what he proposes to produce some time in the near future. These sets will normally utilize the same design of chassis but will generally differ as to type, size, exterior finish, arrangement and location of controls, and associated circuitry.

The laboratories' engineers review the details of construction and select a particular model or models as representing the entire line of receivers. The selection basis involves picking the particular model or models that represent the most unfavorable assembly in the entire line with respect to passing our various tests.

Once our engineers have determined the samples that will be required for examination and test, prototype models are supplied by the manufacturer employing the identical components and assembly which are to be used on production models.

The extent of the actual test work to be performed on a particular set is determined by examination of the assembly and by the identification of the various components as compared with sets which we have previously investigated and recognized as meeting the laboratories' requirements.

Following this original investigation, the manufacturer is advised of the modifications required in the units offered for sale if they are to be listed by the laboratories.

When the manufacturer commences production, he notifies the Laboratories and a representative of the laboratories vists the manufacturer's plant and verifies that the required changes are incorporated in the units as they are manufactured. At the same time, the representative reexamines previously recognized sets that are in production.

The early submittals of color television receivers all employed the same chassis design which had been developed by one of the leading manufacturers even though they were not so identified by use of markings.

Because of our knowledge of this situation, we were able to determine compliance with our requirements by making those tests required by incorporation of different components, by different circuitry, and by waiving those tests where the components and assembly were substantially the same as had been previously recognized.

For each receiver submitted, our customary procedure with respect to consideration of ionizing radiation has been to examine and study each new design of chassis with respect to type of picture tube, high-voltage rectifier tube, high-voltage regulator tube, and other high-voltage components, the location of these components on the chassis, and the use and extent of high-voltage component enclosures or other shielding structures.

From the foregoing it may be concluded that our method of control depends upon and requires the manufacture of units identical to those which the laboratories judges as meeting its requirements. This implies uniformity of assembly and uniformity of performance of all the various components used in the receiver which may affect compliance with the requirements.

The extent of automation involved in manufacturing, the subsequent marketing and servicing problems, and the necessity of the receiver

to perform its intended function, result in a high degree of self-policing in the manufacturing of uniform products. Where workmanship and manufacturing variations are not adequately controlled, units may be produced which do not meet the laboratories' requirements.

The manufacturers' names and model numbers of television receivers which have been found to meet our requirements are published in our "Electrical Appliance and Utilization Equipment List." Manufacturers may be authorized to use our registered marker on their products and in advertising, under suitable safeguards, to indicate compliance.

Underwriters' Laboratories is deeply concerned with the many problems involved in assuring that the public is adequately protected not just from radiation but also from the potential hazards of fire, electric shock, and implosion which may be associated with this product.

Accordingly, despite the overall good safety record associated with our listing of over 114 million television receivers, we stand ready and willing to cooperate fully with any and all groups looking toward improvement of procedures to assure adequate protection.

Thank you.

Mr. Moss. Thank you, sir.

Mr. Moss. Thank you, sir. Mr. Jarman?

Mr. JARMAN. No questions.

Mr. Moss. Mr. Keith.

Mr. KEITH. Thank you, Mr. Chairman.

Mr. Horn, I am interested in finding out just how universally supported your operation is. Where do your funds come from for operation?

Mr. HORN. We charge a submittor for the work that we do in examining his product and subsequently listing his product if it meets our requirements.

Mr. KEITH. Something I have read indicates to me that Underwriters' Laboratories is sponsored by the American Insurance Association.

Mr. HORN. That is correct.

Mr. KEITH. Sponsored by, but not funded by—is that correct?

Mr. HORN. That is correct.

Mr. KEITH. So, the very people who pay the fee are the ones who are seeking your approval?

Mr. HORN. That is correct.

Mr. KEITH. That is not quite as arm's length a relationship as it would be if the insurers were funding the operations?

Mr. WHITAKER. Mr. Keith, if I may speak to that point for just a moment, we think it is more than arm's length because the insurers, if they chose to do so, could manipulate our operation in such a way as to benefit them without real concern for the public.

Mr. KEITH. The insurers benefit from the restrictions and standards which you establish and maintain and their liability is lessened by the effectiveness of your organization. I am not positive I concur in your conclusion but I am nevertheless glad to have your obervations.

That is all, Mr. Chairman.

Mr. Moss. Mr. Dixon.

Mr. DIXON. Yes, sir.

On page 5 of your testimony, Mr. Horn, you state that you listed over 114 million television receivers; that is, they have Underwriters' Lab approval; is that correct?

Mr. HORN. That is correct.

Mr. DIXON. Between June 1966 and February 1967, GE produced some 154,000 sets, of which, as I understand it, some 90,000 are in consumers' homes, which contained defective shunt voltage regulators. How many, if any, of these 154,000 sets were listed by Underwriters' Laboratories?

Mr. HORN. Those receivers were listed by Underwriters' Laboratories.

Mr. DIXON. You test prototypes and then you have, would you say, spot checks or do you check so many on a production line after you have passed on a prototype?

Mr. HORN. Yes.

Mr. DIXON. Spot checks?

Mr. HORN. Our procedure is to test the prototype first and then when the line starts, usually during the first or second day, the engineer who conducted the prototype tests visits the factory with photographs, drawings, data sheets, and makes certain that the line starts up with receiver assembled in accordance with the prototype that we tested.

We have found that, as a general rule, once a line starts up with the proper components, materials, and wires in the supply bins it is difficult to build a receiver that does not comply with our requirements.

Mr. DIXON. How many representatives does the Underwriters' Laboratories have in the field?

Mr. HORN. The number of employees?

Mr. DIXON. The number of employees who actually go into production lines and check.

Mr. HORN. Between 30 and 40 people.

Mr. DIXON. On a full-time basis?

Mr. HORN. Yes; working out of our three offices.

Mr. DIXON. What are they, engineers?

Mr. HORN. A number of them are engineers. We also have some engineering assistants and technicians who do some of this work, but they are all people specially trained in electronics work.

Mr. DIXON. What is the total employment of Underwriters' Laboratories?

Mr. WHITAKER. I believe at the moment, sir, it is about 1,500 persons.

Mr. DIXON. And you check other products, too, which would be of interest to a National Commission on Products Safety.

Mr. WHITAKER. Yes. Certainly, in the electrical field, we check practically 100 percent of them.

Mr. DIXON. Are there other categories or specific products which should be called to the attention of the committee at this time?

Mr. WHITAKER. I think we are conscious of several categories that need improvement from the standpoint of public safety. I think in some of the electromedical instruments, there is a considerable need for improvement. We hear reports from the Accident Prevention Division of the Public Health Service of accidents caused by heating pads and we are concerned about this. We are working in these areas with the

Public Health people at the moment trying to correct these situations.

I know of no other particular products right at the moment that we can say that we know that there is a decided need for upgrading of the requirements. That does not mean that there are none; I just am not aware of it.

Mr. DIXON. In the testing of the particular lines which GE put out between 1966 and 1967, I assume that you would follow your usual practice of testing a prototype and then having someone check as the line started up; is that right?

Mr. HORN. Yes; we so did.

Mr. DIXON. And you found no problems in your work?

Mr. HORN. We did not uncover any problems.

Mr. DIXON. Thank you, Mr. Chairman.

Mr. MOSS. Well, was the shunt tube problem of this General Electric receiver something that developed after the initial production run?

Mr. HORN. I do not believe so, Mr. Moss.

Mr. MOSS. What type of testing procedures do you utilize in determining the radiation levels?

Mr. HORN. We normally have chambers and survey meters which are used in carrying out this work.

Mr. MOSS. Are these the same type that are utilized by the industry in checking their own production lines?

Mr. HORN. Yes; they are.

Mr. MOSS. You are utilizing these devices?

Mr. HORN. That is right.

Mr. MOSS. How would you explain, then, the failure to catch this particular defect in the General Electric circuit which you examined in prototype and in the first few days of production?

Mr. WHITAKER. Mr. Chairman, I think the best answer that we can give you on that is an error in engineering judgment made by our engineers working on the job at the time.

Mr. MOSS. I note in the UL Standards that you have two sections on page 53, sections 301 and 302. Are these supplemented by any other instructions or does this constitute the whole body of instructions on checking for X-radiation?

Mr. HORN. At the present time, this is the whole body of our statement. However, I think we should explain to you that we have been meeting with industry people since January of this year with regard to revising these requirements, bringing them up to date, and supplementing them with more detail and standard procedures. We had a meeting with our Industry Advisory Conference members 1 week ago in New York specifically on this particular subject.

Mr. MOSS. Now, I note in section 302 that the appliance is to be complete except that those parts subject to removal during user servicing may be omitted if they are (1) not necessary to functioning of the appliance; (2) not exposed to view in normal operation; and (3) not captivated. What does "not captivated" mean and then let's go back to the other two.

Mr. HORN. In the construction of any television receiver, as most people have learned, there are a multitude of controls. Some of them are accessible to the user on the front of the receiver; some of them

are on the back of the receiver; and some of them are inside of the receiver, more or less covered up. We generally refer to the letter as controls which are captivated.

Mr. Moss. Now you are talking about controls?

Mr. HORN. Yes.

Mr. Moss. And captivated when you refer to the controls not accessible.

Now, in the instance of the General Electric set, it is our understanding that the external shielding was applied in the factory and in the field, the sets already in use were fitted with the internally shielded tube. In the normal testing of that type of shielding which is not necessary for the functioning of the appliance, would it be removed or would it be retained on the set?

Mr. HORN. Well, the self-shielded GE tube has nothing that can be removed, Mr. Moss; the shielding is built right into the tube.

Mr. Moss. I very carefully broke my question down into two parts. I said that the testimony was that those modified in the factory were externally shielded; those modified in the field were an internally shielded tube. So, the question went to the first instance, not to the last.

Mr. HORN. It is our understanding that the shielding which has been added is not removable, but I think we should also say that we ourselves are now in the process of checking GE receivers to learn these details.

Mr. Moss. My question was more broadly stated. I used the GE instance merely as an illustration. I asked whether this type of shielding, if removable, was removed during the testing or whether it was kept on the chassis or on the set.

Mr. WHITAKER. Mr. Moss, I think the answer to the question is "it depends on how it is applied." If it is a snap-in-place plug, this type of thing, it would be removed. If it was put on by means of rivets or machine screws or brazing or welding or something like that, it would not be removed.

Is this correct, Mr. Horn?

Mr. HORN. A good example is the high voltage cage that is used on most TV receivers. This cage is fastened in place with screws and there is a cover. One has to get inside this cage to replace certain tubes. Our standard requires that the cover be fastened on with a chain or a hinge or some construction like that so you can't throw the cover away. This is a standard requirement of the laboratories.

Mr. Moss. Then the answer would be that this is a variable?

Mr. HORN. Yes; it is. It depends on the construction of the part in question.

Mr. Moss. On the one hand one set with comparable circuitry will be tested with the cover on and the other with the cover off, depending on the construction?

Mr. HORN. Yes.

Mr. Moss. You then get a comparable or a meangful effect of potential against radiation?

Mr. HORN. Yes.

Mr. Moss. Thank you.

Mr. Keith?

Mr. KEITH. You say on page 2 of your testimony that "It is estimated that 95 percent of these have been recognized as complying with the laboratories' requirements."

Does that mean that 5 percent of them do not so provide?

Mr. WHITAKER. No. What it is intended to mean is that there are some members of the Electronic Industries Association which do not submit their receivers to us and we hence do not know whether they do or do not.

Mr. KEITH. In other words, I can interpret from this that 95 percent of all television sets manufactured and sold have been in effect approved by your laboratories.

Mr. HORN. That is right.

Mr. WHITAKER. Yes.

Mr. KEITH. I think that is it. I agree with your interpretation.

Mr. HORN. Thank you.

Mr. KEITH. I note that your book has not been updated, insofar as television sets are concerned, since July of 1966.

Mr. HORN. That is correct. We have been working on revisions of this standard for the last 2 years, as I remember, and you will find inside a number of sticker revisions—page 11 dated July 26, 1966, for instance. This is the way we update our standard.

Mr. KEITH. But there is no sticker with reference to this?

Mr. HORN. No, sir.

Mr. KEITH. But as I understand, as this problem has developed, you have sent out word.

Mr. WHITAKER. There is a bulletin out to the industry right now, Mr. Keith, on this particular requirement which is given in paragraph 301, which will be updated and will become effective on September 1. We work by means of bulletins until such time as the mechanics are well defined and published as sticker reasons.

There was a bulletin dated May 26 in which we notified the manufacturers of listed radio and television appliances that this requirement was being changed to 0.5 milliroentgens and the meeting to which Mr. Horn previously referred last Monday was with a view to getting the mechanics, getting the uniform methods of measurement finalized.

Mr. KEITH. Inasmuch as the Commission which we are considering will certainly have more power than your organization, and there may be situations similar to that which now exist, I think it would be advisable if you would submit for the record the steps that you took to acquaint the people you represent with the necessity for revising or modifying their operations.

Mr. WHITAKER. We will be happy to do so.

Mr. MOSS. Without objection, the record will be held open to receive the information.

(The information requested follows:)

UNDERWRITERS' LABORATORIES, INC.,
Chicago, Ill., August 8, 1967.

HON. HASTINGS KEITH,
Committee on Interstate and Foreign Commerce, Subcommittee on Commerce and Finance, House of Representatives, Washington, D.C.

DEAR CONGRESSMAN KEITH: In response to your request during the House Interstate Commerce Subcommittee on Commerce and Finance hearing in Washington on July 31, 1967, we are attaching copies of bulletins to our Electrical Coun-

cil and manufacturers of listed radio and television receiving appliances, dated May 10, 1967 and May 26, 1967. (Bulletins referred to may be found in the committee files.) The May 10, 1967 bulletin records a discussion of our requirements for these devices with members of our Industry Advisory Conference for Radio and Television Receiving Appliances on January 24, 1967 and paragraph No. 29 on Page 16 proposes that our present limit of 2.5 milliroentgen per hour for ionizing radiation emitted from the surface of a television receiver be reduced to 0.5 milliroentgen per hour 5 cms from the surface of the receiver. Our May 26, 1967 bulletin proposes the establishment of September 1, 1967 for the reduced limit. Methods of making X-radiation measurements upon receivers, receiver operating conditions during such testing and procedures to implement the actions above-described were reviewed with our Radio and Television Industry Conference on July 24, 1967 and we intend to have these details established by the September 1, 1967 effective date for the new requirements.

We have initiated a program to measure the X-radiation from all color television receivers listed by the Laboratories currently in production and we hope to have this review completed by September 1, 1967 so our listings can be revised to reflect the new requirement.

We will be glad to answer further questions which you may have concerning these matters.

Very truly yours,

LEONARD HORN,
Engineer, Nucleonics.

Mr. Moss. Are there further questions?

Mr. Dixon?

Mr. DIXON. You said that in September you will change your standard from 2.5 to 0.5 milliroentgen.

Mr. HORN. That is correct.

Mr. WHITAKER. That is correct; yes.

Mr. DIXON. This United Laboratories booklet has on page 53 a note that this was under discussion by the International Commission on Radiologic Protection. How long has this been recommended or discussed?

Mr. HORN. By the international commission?

Mr. DIXON. Yes, or to the Underwriters' Laboratories.

Mr. WHITAKER. There has been no recommendation to us.

Mr. DIXON. No recommendation?

Mr. WHITAKER. By anyone. This represents our opinion based on the available data coming from both the international and U.S. national committee, as I understand it.

Mr. DIXON. How long has Underwriters' Laboratories been considering it prior to your recent decision to change your viewpoint?

Mr. WHITAKER. Well, I think we went on record as of January 1, I guess, to bring it to 0.5 milliroentgen. This was prior to the release of the information now under discussion.

Mr. DIXON. Based on how much consideration? This note isn't new. Have you been considering it since 1964?

Mr. WHITAKER. I think we have to go back a little ways and point out that the 0.5-milliroentgen requirement that is referred to by the international commission is for normal operating conditions. If you will read the fine print paragraphs following 301, you will find in them a degree of abnormality. So, we are kind of hung up at this particular point right now as to which way to go. We are not at all sure that a 0.5-milliroentgen requirement for every abnormal condition will permit anyone to have a television set, frankly.

So, this is a matter which we feel will have to be considered very carefully. This change which we are proposing is to stay with the degree of abnormality which is described herein, but for other de-

grees of abnormality which have been discussed, the suitability of the 0.5-milliroentgen limit has yet to be determined.

Mr. KEITH. Would the gentleman yield?

Mr. DIXON. Yes, sir; I will be glad to yield.

Mr. KEITH. This International Commission on Radiological Protection, would you describe its scope, authority, financing?

Mr. HORN. I believe I can answer part of your question, Mr. Keith.

I have before me ICRP publication No. 9, adopted September 17, 1965, and on page 1 is a statement of the basic principles underlying the recommendations of ICRP.

The policy adopted by the Commission in preparing its recommendations is to consider the fundamental principles upon which appropriate radiation protection measures can be based while leaving to the various national protection bodies the responsibility of formulating the specific advice, codes of practice or regulations which are best suited to the needs of their individual countries. The Commission wishes to emphasize that its recommendations are intended to guide the experts responsible for putting radiation protection into practice.

I do not know how——

Mr. KEITH. Is there an extra copy of that, not necessarily for the record, but for the staff?

Mr. HORN. Yes. I would be glad to supply this.

Mr. KEITH. Is this organization financed by the manufacturers, by governments, or how does it get its financing and its authority?

Mr. HORN. I do not know.

Mr. KEITH. Do you happen to know if any other country has a commission such as we are considering here?

Mr. HORN. I believe most countries have individual commissions or committees like the U.S. National Council for Radiation Protection and Measurements. This is the American arm of this committee.

Mr. KEITH. We are concerned that it will be much more than just that particular field. For example, do other countries have agencies like the Underwriters' Laboratories?

Mr. HORN. Not generally.

Mr. KEITH. Does the Government therefore assume a more active role?

Mr. HORN. Yes.

Mr. WHITAKER. Yes; this is true. In other countries, the function we are performing in this country is performed by some quasi-governmental activity.

Mr. KEITH. I think the effectiveness of your operation has been responsible for a lessening of the need for any Federal action. But the question as to how will the public interest be best served in the future is what we are concerned with.

Mr. Moss. Any further questions?

We want to thank you gentlemen for appearing here and being helpful to the committee.

Mr. WHITAKER. Thank you for giving us the opportunity, Mr. Chairman.

Mr. Moss. We will now hear from Mr. Cass Borkowski, Director of the Instrumentation and Controls Division, Oak Ridge National Laboratory, Oak Ridge, Tenn.

I might point out Mr. Borkowski is here at the invitation of the subcommittee to respond to questions on radiation as the committee might require.

I wonder, before proceeding, sir, if you would like to make some observations to the hearings.

STATEMENT OF C. J. BORKOWSKI, DIRECTOR OF INSTRUMENTATION AND CONTROLS DIVISION, ATOMIC ENERGY COMMISSION, OAK RIDGE, TENN.

Mr. BORKOWSKI. Yes. Thank you, Mr. Chairman.

Mr. MOSS. I wonder if you might briefly sketch for the record your background.

Mr. BORKOWSKI. I am the Director of the Instrumentation and Controls Division of the Oak Ridge National Laboratory, an institution, as you know, owned by the Atomic Energy Commission.

I have been with this Laboratory for the last 24 years in the area of instrumentation, physics, and circuit design. I have numerous patents in the field of instrumentation and the measurement of radiation.

If the chairman will permit me, I would like to demonstrate for your benefit, if you wish, some of the properties of the X-rays in this so-called soft X-ray region. I have a small device here that will do that and it will take little time.

Mr. MOSS. I think it would be very helpful.

Mr. BORKOWSKI. Thank you.

I have a device here which is a so-called Geiger counter with a very thin mica window, which is a material thinner than paper, allowing soft X-rays to penetrate it easily. An X-ray passing through this window into the counter produces an audible peep or a chirp from this personal radiation monitor (PRM).

I have a source here of X-rays which are produced by a radioactive substance. These X-rays, in principle, are close to the same energy as the X-rays coming from the GE shunt regulator tube. The source emits 20-kilovolt X-rays, an energy which falls in the so-called soft X-ray range.

When I bring the source near the counter, you will notice that the rate of chirps increases.

Now, since these are relatively soft X-rays, one can place a very thin piece of metal such as copper between the source and the counter and you will notice that there is no response from the counter, indicating that the X-rays were stopped by the copper shield.

Now, copper is a denser material than glass. I have some microscope slides with me which are of a thickness about equivalent to that of the envelope of the shunt regulator tube; in other words, about, oh, I would say a 32d of an inch of glass.

You will observe that the X-rays easily penetrate the glass plate which is comparable in thickness to the envelope of the shunt regulator tube. However, as you observed before, a very small amount of copper or steel easily stopped these X-rays.

So, in principle, the matter of shielding X-rays of this energy is trivial; that is, it does not require much material to effectively stop the X-rays.

In order to stop X-rays with glass, one has to have a fairly thick piece of glass like the glass on the face of the TV picture tube, for example. In this picture tube X-rays are generated when electrons from the cathode are accelerated to 20 kilovolts and strike the phosphor

in the tube. Protection from the X-rays is therefore needed. Three-eights of an inch of glass of one type effectively stops such X-rays.

You will notice that most of the X-rays from the source are stopped by this thickness of glass—three-eighths of an inch—but not by this rather thin piece of glass which I first demonstrated.

X-rays are generated, as many of you know, merely by stopping high-energy electrons in matter, for example, in glass or steel. Perhaps one X-ray will be produced by a thousand such electrons stopping in glass or metal.

When electrons are accelerated to voltages in excess of a few thousand volts, one will normally observe the emission of X-rays from whatever source one is using at the time.

For example, if you have a rectifier tube that has 10 kilovolts on its plate, you will get X-rays of roughly that energy with a distribution of lower energy X-rays.

As you increase the voltage, the number of X-rays and their penetrating capability increases. So, if you double the voltage, say, from 10 kilovolts to 20 kilovolts, you will produce almost 16 times as much X-ray power by merely raising the voltage by a factor of 2. The intensity of X-rays increases as the fourth power of the applied voltage.

There were statements made today that there is no X-ray problem from black-and-white television, and normally there is not. However, I want to point out there could be an X-ray problem in the range of 15 to 18 kilovolts if sufficient shielding were not present.

Normally, the shunt regulator tube is not used in black-and-white TV because it is not needed to stabilize the voltage as is required for color television.

Now I think that the solution, from one point of view, that was mentioned this morning for taking care of the defective sets in the field was a good one; namely, by building an internal shield in the shunt regulator tube. Thus, repair of the defective sets in the field merely requires substitution of the defective tube with the internally shielded tube. On the other hand, it does present a potential hazard, it seems to me, since the internally shielded voltage regulator tube, as I understand it, is an exact replacement for the defective shunt regulator tube.

Since adequate shielding in the chassis is not provided and, if there were some of these defective shunt regulator tubes available to the servicemen and the word not gotten to him then he could indeed substitute a defective tube for the internally shielded tube the second time around. When the internally shielded shunt regulator tube failed perhaps he could substitute a defective tube if he were not properly informed. One would hope that he would have received instruction not to make such a replacement.

Mr. KEITH. Would you happen to know whether the companies involved have issued instructions for the destruction of tubes without internal shielding in the hands of repairmen?

Mr. BORKOWSKI. No; I do not have that information.

Mr. KEITH. Would that be feasible? Would it be your recommendation?

Mr. BORKOWSKI. It would be my recommendation that this information should be given to the servicemen. I think the serviceman is probably in the worst situation from the effects of radiation, as far as exposure to X-rays is concerned, in that he has to take the chassis out

of the cabinet and is exposed frequently if he is not properly alerted or trained.

However, I do want to point out that I have a bulletin here with me for one of the GE shunt regulator tubes, the 6EF4, which apparently is one of the tubes that causes trouble. They do have in small print in their specifications the following note, if I may read this.

The voltages employed in some television receivers and other high voltage equipment are sufficiently high that high voltage rectifier tubes may produce soft X-rays which constitute a health hazard unless such tubes are adequately shielded. The need for protection should be considered in equipment design. Relatively simple shielding should prove adequate.

So, the serviceman should read this bulletin, certainly; however, the print is rather small.

Mr. KEITH. Is there any danger involved in this, other than when they are activated, if the tubes in his box are not installed in the machine?

Mr. BORKOWSKI. Oh, no.

Mr. KEITH. No danger?

Mr. BORKOWSKI. No X-rays until you apply the voltages to the tube.

Mr. KEITH. Thank you.

Mr. BORKOWSKI. If I take, however, this Geiger counter and bring it near a television receiver, which is improperly shielded or near a shunt regulator tube or rectifier tube, one could see and hear immediately that there were X-rays present. When a shield is placed around the shunt regulator tube the Geiger counter will not detect any X-rays.

The point is that there are devices for determining X-radiation from rectifier tubes. Many of them are still in state of development but there are methods and means, as has been indicated before, of determining the level as well as whether or not there are beams of X-rays coming out as in the case of the GE set. Here we had a beam of X-rays and there were some comments made earlier about what the intensity was across this beam. One has to worry about this comparison of intensities. There was a variation in the measured intensity from 4,000 mr per hour up to 50,000 mr, depending on how the measurement was made.

Well, if I put my eye in the center of this beam and it were 50,000 mr per hour, I would be much worse off than assuming that the average integrated intensity across this beam were only 4,000 mr per hour.

So, one needs to clarify and adopt some sort of standards for measuring radiation that is produced by high-voltage systems such as we have in our television receivers. I would certainly recommend that some kind of standard and definition of terms be adopted so that the discrepancies that we heard about this morning would not exist. We had these kinds of discrepancies in the early measurement of radiation from induced radioactivity. However, over the years as one refined the methods of measurement one soon observed that the differences between different laboratory measurements became less.

Mr. KEITH. I notice that little gadget seems to be quite alert, doing a lot of talking.

Mr. BORKOWSKI. Yes; almost as much as I am.

Mr. KEITH. Would you tell me what we really need to be concerned about?

Mr. BORKOWSKI. I don't think you need to be concerned about the level of radiation in this room, for example, just because this counter is peeping. As a matter of fact, the X-ray source I have here would pass the 0.5 mr per hour at 2 inches requirement of the Underwriters' Laboratories.

Mr. KEITH. How expensive is that gadget?

Mr. BORKOWSKI. That device would cost about $75.

Mr. KEITH. In all your experience, have you ever known of anybody to suffer serious hardship or illness or other adverse effects from this kind of electrical appliance or allied appliances in the industrial field?

Mr. BORKOWSKI. Yes; I do know of a specific case and somewhat similar to the television problem we have here at hand.

An engineer was designing a circuit which required him to observe at a close distance a cathode-ray tube in an oscilloscope, which is very much like a television picture tube. This cathode-ray tube which was operating at 30 kilovolts was not designed with a thick faceplate as is a television picture tube. So, over a period of a year of such close observation, being close to the source of X-rays, soft X-rays, his vision was impaired over a period of about 2 or 3 years. It is a latent effect; it didn't happen all of a sudden. In addition he lost his eyebrows and hair.

He had no indication in his case that the X-ray level at the cathode-ray tube was high enough to cause cataracts and eventually, perhaps, losing his vision.

Mr. KEITH. But, to the best of your knowledge, that is about the only one which specifically can be related?

Mr. BORKOWSKI. I am not familiar with any other case; it just happened that this chap related these facts to me during a visit to our laboratory.

Mr. KEITH. I say, to your knowledge.

Mr. BORKOWSKI. Well, the same problem exists in radar where high voltages are available, and X-rays are produced. There one is concerned with exactly the same problem.

Mr. KEITH. Radar seen on a fishing vessel, for example?

Mr. BORKOWSKI. On a high-power transmitter; right.

Mr. KEITH. But you don't know of any——

Mr. BORKOWSKI. Not directly. I have not concerned myself in looking for similar cases.

Mr. KEITH. But you perhaps might be expected to know by reason of your curiosity, expertise?

Mr. BORKOWSKI. I am not actually familiar with specific cases since this is not part of my specialty, shall I say, looking for evidence of this kind. I actually am interested in the design of instrumentation and some of the physics of their application.

Mr. KEITH. Thank you, Mr. Chairman.

Mr. Moss. Mr. Dixon.

Mr. DIXON. Would you tell us some of the differences between so-called soft and hard X-rays, Mr. Borkowski? You mentioned this oscilloscope problem was with the soft X-ray.

Mr. BORKOWSKI. Soft X-rays are X-rays with energies which are in the region between, say, 1 kilovolt, and this is a very arbitrary number and below about 30 kilovolts. Soft X-rays, as was mentioned pre-

viously, have very little penetrating capability; they are easily stopped by relatively thin metal shields. Eight-kilovolt X-rays for example are absorbed rather rapidly in tissue. However, the eyes are really one of the areas, as I understand it, where potential damage can be done. Hard X-rays, the type that are used for chest X-rays and cancer therapy, are much more penetrating; they pass essentially through the body and will easily pass through all of these absorbers that I have put over this detector. The hard X-rays have energies between 100 kilovolts and several thousand kilovolts.

One-half or 1 inch of glass is easily penetrated by hard X-rays. So, the region between a few kilovolts and 30 kilovolts is usually considered the soft X-ray region. Soft because they are easily stopped by matter; hard because they are not.

Mr. DIXON. Do you know of any devices similar to the one that you are demonstrating here today which are in general use or even in occasional use in repair centers or repair shops?

Mr. BORKOWSKI. No; I don't believe they exist as such for that purpose. I don't think I know of any serviceman that I have had personal contact with who is even aware of the existence of some of these instruments or that he needs to actually measure for his own safety the radiation level when he is servicing a television receiver.

I think that could be a very important part of the protection that you might offer. We think of the millions of people with the receivers but it may be the poor serviceman who may lose his eyesight looking over a rectifier tube for years.

Mr. DIXON. Then you believe there is a need for a testing device in a repair shop for the protection of the repairman, and also for the protection of the owner and user of the set.

Mr. BORKOWSKI. I don't think I would recommend, or I am in no position to recommend, that survey devices of this type be the only remedy. I think it is necessary for the manufacturers to educate and to provide sufficient background material of potential hazards in TV sets for the serviceman and users of sets. It seems to me that perhaps some local organization could collaborate with the Government in spot checks.

For example, the Office of Civil Defense already has these instruments; they are in every neighborhood. It may be in the position to perhaps offer some of their services or be in some way helpful in an advisory capacity, perhaps. They know how to measure radiation; the serviceman does not.

Mr. DIXON. Can you tell us of any prospective improvements in circuits which could reduce the potential hazard of both X-radiation and current leakage or voltage shock?

Mr. BORKOWSKI. Well, I think as the demands for higher quality pictures are made on the manufacturers this means that you do have to go to higher voltages, and we are not going to eliminate that unless we develop new phosphors which are efficient at low voltages and, as far as I know, there does not seem to be much possibility of dramatically increasing the efficiency of these phosphors.

In circuitry, I think as long as you use 20 kilovolts or so you are going to produce these same X-rays; there is no way of stopping them. An electron which is accelerated to 20 kilovolts anywhere in the

system is going to generate an X-ray once every 1,000 times. There is no way of stopping that by any kind of circuitry, so to speak; it has to be done by shielding. You have to shield the X-rays; you have to keep them out just as you have to shield your eyes against ultraviolet light from the sun. Sunlight, in a sense, is a very soft X-ray having an energy of 4 volts instead of 20 kilovolts. It is electromagnetic radiation of the same kind as X-rays and it does harm to the skin or to the eyes. Welders, for example, often, as you know, develop cataracts and lose their vision because they observed the welding arc without protection of a shield of some kind; namely, welding glasses.

Mr. DIXON. Thank you, Mr. Chairman.

Mr. Moss. I asked the question of previous witnesses about transmitting equipment. We had a concentration here on receiving equipment.

Mr. BORKOWSKI. Yes.

Mr. Moss. Would the same problem of radiation be present in a broadcast transmission facility as exists in a receiver?

Mr. BORKOWSKI. Yes. As I mentioned before, wherever you have a voltage in the system around 20 to 50 kilovolts or higher, you will always generate X-rays and there will be some way or another a potential soft X-ray hazard.

Mr. Moss. Well, I think that you have made a very significant contribution to the committee's understanding of the problem.

Mr. Jarman, do you have any questions?

Mr. JARMAN. No.

Mr. Moss. I want to thank you very much for taking the time to come here today. With this very important testimony, the hearings for today are concluded.

Mr. BREESE. Mr. Chairman, excuse me for interrupting. I am Claude Breese of General Electric.

Mr. Borkowski raised the point and I would like to request that the record be left open as far as the serviceman is concerned. I am not a technical witness. We would like to submit a letter. Steps have been taken to prevent the serviceman from utilizing possibly radiating tubes; in other words, from changing out the modified tube, and I think that is of interest to you.

Mr. Moss. I wish the committee would receive the information and reserve for its future judgment the disposition of the information.

Mr. BREESE. Fine. I just wish the opportunity to submit that in a letter.

Mr. Moss. You may submit that to the committee for its further consideration.

Mr. BREESE. Thank you.

(See letter dated August 11, 1967, p. 248.)

Mr. Moss. The committee is now adjourned.

(The following material was submitted for the record:)

STATEMENT OF GENERAL ELECTRIC COMPANY

General Electric Company supports the proposal to establish a National Commission on Product Safety in order to "help build a foundation of knowledge from which we may make intelligent choices as to appropriate steps toward solving the problem of safety in the home"—the words of Mr. Moss when he introduced H.J. Res. 280 on February 8, 1967.

General Electric believes that the record of United States industry in eliminating hazards associated with electrical household products is impressive, historically and in total. However, in this age of accelerating technology Congress and the public are entitled to a review of the quality of industrial performance in this area and to assurance that adequate measures are being taken to safeguard consumers. Moreover, the very existence of the Commission should stimulate existing broad based efforts to develop standards and codes designed to further enhance safety. General Electric, therefore, looks forward to cooperating with the proposed Commission.

To these ends, we believe that certain amendments of H.J. Res. 280 would provide additional assurance of achieving desired objectives.

Composition of the Commission. Section 1(b) of H.J. Res. 280 contemplates that members of the Commission will be "specially qualified . . . by virtue of their education, training and experience." Given the nature of the Commission's responsibilities, it seems desirable that the statute recognize the importance of the practical experience in various relevant fields and hence spell out more explicitly the character of the experience and training that shall qualify persons for membership. Accordingly, it is suggested that Section 1(b) be amended to provide specifically that the Commission shall include individuals with experience in the engineering of household products, in their manufacture, and in the development of codes and standards applicable to such products, as well as members from the public and from federal and state or local government.

This amendment would assure that the Commission is so constituted as to give Congress the benefit of the best thinking of industry and the engineering and manufacturing professions while adequately providing for representation of the public and government.[1] A broad spectrum of relevant experience should be brought to bear in the Commission's work, because the quality and extent of acceptance of the Commission's findings and recommendations will depend substantially on the recognized competence of all of its members.

Duties of the Commission. Section 2(a)(1) requires the Commission to consider the "identity of household products" which present "an unreasonable hazard." However, as we understand the legislative purpose, the Commission focus should center more properly upon the identity of significant types of hazards associated with classes of household products. It would not be either feasible or useful for the Commission to undertake a product by product design analysis; to do so would be to compile lists of product comparisons but fail to come to grips with the basic problem—protection against unreasonable types of hazards found in the household.

As was brought out in the Senate hearings on the companion legislation, S.J. Res. 33, the Commission should establish priorities for its review of hazards, based upon the degree of risk to consumer health and safety. To do so it must identify significant types of hazards, rather than serve as a certification center for thousands of household products.

Accordingly, it is proposed that Section 2(a) (1) be amended to provide that the Commission's study and investigation shall include consideration of "the identification of those significant types of hazards to the health and safety of the consuming public which are associated with different classes of household products."

Procedural Safeguards Relating to the Duties and Powers of the Commission. The proposed Commission's study and investigation of hazards associated with various types of household products will almost necessarily involve questions of legal liability and the rights and obligations of various persons concerned with the manufacture, sale, installation, and use of such products. We believe it is therefore important that the legislation provide reasonable procedural safeguards to those persons who submit material to the Commission, make statements, give technical advice, appear at hearings or otherwise participate in the Commission's activities.

Our concern here is prompted by two principal considerations:

(1) The proposed Commission is an agency of the Congress to help carry out Congressional legislative and investigatory responsibilities. As such it does not provide those essential procedural safeguards which are invested in an adjudicatory body: opportunity to private parties for cross examination, submission of

[1] See, for example, 15 USCA, Sec. 1393, providing for the establishment of the National Motor Vehicle Safety Advisory Council.

proposed findings, briefs and oral arguments, or the right to subpoena witnesses and documents.

(2) There is case law support for the view that reports of administrative agencies and Congressional committees are sometimes admissible in private lawsuits.[2]

With these two considerations in mind we urge that the following procedural safeguards be incorporated in H.J. Res. 280:

First, Section 2(b) should be amended to add a provision that no part of any report of the Commission shall be admitted as evidence or used in any suit or action for damages involving a household product. Such an amendment would prevent the use in evidence, in private lawsuits for damages, of the opinions, findings and conclusions of the Commission. It is consistent that the idea that the Commission's purpose is to develop data and information to enable it to recommend such legislation as it deems appropriate and that the Commission work product should not provide a basis for private parties to assert claims against each other.

There is precedent for such a safeguard. Section 701(e) of the Federal Aviation Act of 1958 provides:

> "No part of any report or report or reports of the Board relating to any accident or the investigation thereof, shall be admitted as evidence or used in any suit or action for damages growing out of any matter mentioned in such report or reports."

Substantially similar provisions are found in 49 USCA, Section 320(f) of the Motor Carrier Act and in 45 USCA, Section 41 (relating to safety investigations of the ICC).

Similarly, Section 3(a) (5) should be amended to add a specific proviso that no data, reports, answers, testimony or evidence prepared for and submitted to the Commission shall be admitted as evidence or used in any suit or action for damages involving a household product.

This amendment, dealing with statements *to* the Commission, just as Section 2(b) deals with reports *of* the Commission, would make it explicit that full disclosure of relevant data to the Commission can be made without fear that such data can be used in private litigation. The amendment could further provide, of course, that it in no way precluded individual claimants from invoking applicable discovery and inspection procedures in private lawsuits, but only the use, in such lawsuits, of data in the form supplied to the Commission during the course of its investigation.

Lastly, it is urged that Section 3(a) providing for the conduct of hearings and otherwise securing data and expressions of opinion pertinent to the Commission's study, be specifically amended in two important respects. First, by adding a requirement that the Commission shall publish notice of any proposed hearing in the Federal Register and shall afford all interested persons an opportunity to present relevant testimony and data. Secondly, the amendment should also provide that where adverse data or expressions of opinion relating to a particular product are secured by the Commission without a hearing, the manufacturer of such product shall be given notice thereof and an opportunity to respond to such data or opinions.

These amendments would assure adequate notice to interested persons and provide an opportunity to appear at public hearings or, where the Commission obtains adverse data or expressions of opinion without a hearing, an opportunity to respond to such adverse data or opinions on any matter involving a particular product in which they have an interest.

STATEMENT OF WHIRLPOOL CORPORATION

We support the basic ideals of Consumer Protectionism and intent of legislators who are concerned for the welfare of consumers and business firms in matters of illegal practices and unsafe products, however, we feel that a National Commission on Product Safety, as proposed and as written in H.J. Res. 280, is not needed at this time.

Last year, the House deleted the provision for a National Commission (on Hazardous Household Products) when it passed the Child Protection Act of

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[2] *Wright* v. *Carter Products*, 244 F. 2d 53 (2d Cir. 1957); *Stasiukevich* v. *Nicolls*, 168 F. 2d 474 (1st Cir. 1948); Frumer & Friedman, *Products Liability*, Vol. 1, secs. 12.05 and 12.06.

1966 (S. 3298). The deletion was explained: "It is our belief that a study of the type contemplated by this Commission can be carried out under existing authorziations and we therefore deleted the provisions establishing the Commission from the bill."

We continue to support the premise that there are existing authorizations which could carry out the intent of a National Commission on Product Safety. However, if in the judgment of Congress a need for a Commission is deemed necessary, we offer certain suggestions that could make H.J. Res. 280 more meaningful.

The consumer should be protected from unsafe products and the illegal practices that represent a miniscule section of any business or public-oriented function. Such protection is available through the enforcement of current laws. However, to assist in a better understanding and application of various laws, we support Sec. 2(a)(3) and Sec. 2(a)(4) of H.J. Res. 280, which call for investigations of protections afforded by common law and a review of Federal, State, and local laws relating to the protection of consumers.

In support of Sec. 2(a)(2), which would require a study of the extent to which self-regulation by industry affords protections to the consumer, we believe a Commission will find an honest and effective effort by industry to produce safe products. We are confident this study will substantiate the need for the continued use, or greater use, of existing testing and standards organizations, such as Underwriters' Laboratories, the International Electrotechnical Commission, the USA Standards Institute, the American Gas Association.

The study will also substantiate the need for a new atmosphere wherein industry can undertake self-regulatory actions on safety and certain standards, based on freedom from threats of applicable antitrust principles.

Product reliability and safety are extremely important in the manufacture of Whirlpool appliances and our on-going studies show continual improvement in these areas through the years.

We question the necessity of Sec. 2(a)(1), regarding investigations of household products through methods such as described in Sec. 3. Instead, we feel there is need for more freedom for industry to achieve self-regulation and for a comprehensive study of the techniques used to obtain actual household injury figures because of existing uncertainties of these figures. Injury-estimate methods based on surveillance activities should be strengthened. Public reports and statements regarding hazardous products can be misleading and therefore should be limited to current products with well-documented deficiencies and should not include noncurrent products that had deficiencies which were corrected.

We further believe that at least three of the proposed seven members of a Commission, if established, should be persons with engineering, design, research or quality control experience in industry.

The resolution should also be amended to state that all data and information submitted to a Commission be held confidential and not admissible as evidence in any litigation against the business firm supplying the data or information. In addition, the resolution should provide that such a Commission must follow all applicable principles of the Administrative Procedure Act.

In conclusion, if Congress finds it necessary to create such a Commission, as a matter of Whirlpool policy we will offer our cooperation and assitance to achieve the stated objectives.

Statement of the National Consumers League

The National Consumers League, which has since its establishment in 1899 been in the forefront in the fight for consumer protection, wishes to go on record in favor of H.R. 5654 to amend the Flammable Fabrics Act of 1953, and House Joint Resolution 280 to establish a National Commission on Product Safety.

Our organization, which was instrumental in the enactment of the Pure Food and Drug Act, is continually concerned with areas where the consumer needs additional protection. H.R. 5654 goes into just such an area, and would greatly help in correcting a situation which has become increasingly detrimental to consumers throughout our nation.

Death from fire today ranks third among the causes of accidental death in America. In only one other country in the world—Saudi Arabia—are, there more deaths caused by fire and explosion than in America. The victims, unfortunately, are most frequently those least able to protect themselves—the

disabled, the aged, the poverty-stricken, and our young children. The National Consumers League has always sought to help these very groups.

The original Flammable Fabrics Act of 1953 included only a very limited number of items of wearing apparel. It did not include hats, gloves, footwear, or inner linings. H.R. 5654 would bring these items under control of the law, and would also extend coverage to include blankets, bedding, carpets, draperies and upholstery fabrics.

Some of the very fabrics banned from use in clothing under the original act are today being used in the manufacture of blankets and other products. They are as dangerous there as they were in the clothing.

The authorization of specific research and investigation under this bill, and the provisions for an annual report to the President and to the Congress, have our full endorsement. This research, together with the delegation of the power to the Secretary of Commerce to make or change standards will, we hope, insure more adequate protection to the consumer. We feel certain that these steps will also assist industry in providing safer and better products. Surely the more ethical members of the industry will benefit by eliminating competition from unscrupulous manufacturers who do use dangerous materials in their merchandise. We therefore urge that you report H.R. 5654 favorably.

The National Consumers League in endorsing House Joint Resolution 280, feels that the over 1 million injuries suffered by householders annually from home appliances is the most telling testimony for this Resolution.

The great scientific and technological ingenuity of industry in this country produces new products for home use almost daily. Although these appliances may lighten the work of the householder, they may, at the same time expose him to new risks and dangers. A recent report prepared by the Consumers Union for the Senate Committee on Commerce, found nearly 376 such products to be hazardous. The manufacturer, while trying to produce the best and safest product is, himself, handicapped by a hodge-podge of regulations. The consumer, on the other hand, is frequently bewildered by the myriad of new and varied products displayed in the marketplace. His test, too often, is the use-test which, in itself, can present a tremendous risk.

The President, in his message, has noted that the findings of a Commission on Product Safety could aid us to "move from a patchwork of regulation to the comprehensive network of safeguards the American consumer deserves."

The 7-man Commission authorized by H.J. Res. 280 would, after making tests and obtaining the necessary information, set uniform and fair regulations and safeguards for such household products as lawn mowers, heating appliances, washing machines, and the many electrical products being increasingly used by consumers. It would study Federal, state, and local laws, and the quality of enforcement. This body would also look into such questions as the following: Is warranty enough protection for the purchaser? What standards for legal liability should be set, and by whom? Should there be a Federal Statute on Product liability? Whom may the injured customer sue? What is the manufacturer's liability?

H.J. Res. 280 directs the Commission to make a report by January 1, 1969, and to recommend the necessary legislation. This should do much to improve a confused and dangerous situation.

The National Consumers League wishes to commend the Chairman and the Committee for your thoroughness in exploring all aspects of these problems. Your concern with these matters matches our own. We feel that the public interest will be served by this legislation and urge the Committee to report both H.R. 5654 and House Joint Resolution 280 favorably.

STATEMENT OF THE NATIONAL RETAIL MERCHANTS ASSOCIATION, PRESENTED BY WILLIAM BURSTON

My name is William Burston. I am the authorized spokesman for the National Retail Merchants Association. Our organization comprises 2,000 members who operate some 16,000 retail stores in the United States. I am a vice president of the Association and manager of its merchandising division.

The Committee may wish to know that it was the National Retail Merchants Association which sponsored the Flammable Fabrics Act of 1953. We are motivated now as we were motivated fourteen years ago by a constant concern

for the welfare of the consumer and the safety of merchandise on the American market.

We will support any necessary, practical and obtainable standards for that end.

1. *No Standards Exist.* Yet the Committee must be aware that at this time there isn't available sufficient technology to properly evaluate a broad spectrum of household furnishings.

Only standards for tests of clothing are available. Items such as bedding, draperies and carpets have different exposure conditions, our Technical Committee advises. Hence the use of present apparatus will not be appropriate.

Linings, interlinings and foam cushioning would be covered by the proposed legislation. The burning propensities of these materials, I am advised, are a function of such coverings as may be used with them. To evaluate these as subcomponents would be inappropriate.

As the bills are written, it is conceivable that the Department of Commerce may impose different standards on different end use products. For example, children's or infants' clothing may require a greater degree of flame resistance than would men's or ladies' apparel. Identical fabrics may however be used for either classification. The existence of multiple standards would rule out the possibility that the fabric manufacturer be responsible for test and resultant certification.

Since he would have no prior knowledge of the end use, he could not guarantee compliance. The garment manufacturer, the small independent retailer generally have no facilities for testing. They could, of course, obtain the services of commercial laboratories, but this for a small manufacturer or retailer would materially increase costs.

A fabric made by one large mill might go to hundreds of manufacturers and thousands of retailers. Each would be obligated to test, thus imposing a staggering dollar burden on the consuming public.

2. *Ask USASI to Get Up Standards.* We believe that the new standards can best be developed by delegating that work to the U.S.A. Standards Institute. NRMA has worked with this organization for many years. The Institute has the facilities, the organization, the procedures to do this work most efficiently. It has also the confidence of industry. The point of view of the consumer would be emphasized by the Institute's Consumer Council.

Working with the USASI should be representation of the U.S. Department of Commerce and interested industry groups; also technical societies like the American Society for Testing Materials (ASTM), the National Safety Council, textile manufacturers, retailers, consumer organizations, and textile laboratories.

3. *Big Question: How Control the End-Use?* One of the big problems the Congress will face in considering this legislation is how to control the end-use of a product. How will legislation keep people from misusing fabrics, or buying them for one purpose and converting them to other uses—one of them or several of them possibly dangerous? How can Congress anticipate situations involving the consumer's use of a product for which that product was never intended, or which the mill or converter or manufacturer cannot possibly predict?

A new test technology will have to be evolved to yield results that correlate with the new uses.

All textiles are consumed by fire and most of them support combustion or contribute actively to any encompassing flames. There are some fibers which are difficult to ignite and once ignited will extinguish themselves upon removal of the igniting flame or will only smolder or burn slowly. Closest to being fireproof are metal fabrics, fiberglass and asbestos and even these can melt or in other ways be destroyed as fabrics. This applies also to fabrics chemically treated to suppress combustion. There is no fireproof textiles nor known means of rendering them fireproof.

Chemicals can be applied to many textiles to make them resistant to ignition and become self extinguishing but such chemicals, if they are to be durable to washing and dry cleaning, will invariably affect the appearance, feel or other aesthetic properties of the fabric such as to render it unsuitable for many uses, especially in apparel. Also the chemical treatments may have as yet unexplored potential for causing allergic reactions and dermatitis to the wearer.

Attempts to confine apparel or household textiles specifically to non-burning or slow burning fibers or to fabrics chemically treated for fire-resistance will drastically limit the consumer's wide freedom of choice in matters of color,

textile, tactile qualities, style and other aesthetic properties presently available in great variety and diversity of products.

In addition to drastic restrictions in choice there would be unavoidable and considerable increases in cost to the consumer.

Any regulation of garment manufacturing to specifiy the fiber and chemical properties of manufactured garments intended for particular end-uses such as garments for children or the aged could not control home-made items or the adapting by the consumer of other materials to such uses.

It is an unfortunate condition of life that a certain number of individuals in every age group will die in any selected interval of time and that whatever the forces that determine the random distribution of causes of death, they will result in some number of deaths attributable to fire.

Do the statistics support the view that there exists in the general experience of deaths and injuries by fire a condition that could be eliminated by using fire resistant textiles?

How often in cases of injury or death by fire has clothing been the sole or chief cause. Anyone involved in an encounter with fire may be seriously burned regardless of the nature of the clothing worn.

How many deaths by fire could actually have been prevented if the victim had been wearing fire retarding clothing? A single untimely death and a single burn suffering is one too many, but how far should legislative regulation be carried in attempts to reduce death and suffering caused by flammable apparel when such regulation will reduce for the total population its capacity for living a life of free choice?

Many untimely deaths result from what are normally such innocuous agencies as bees, mushrooms and vaccinations. Must such things then be eliminated? The U.S. Public Health Service, by public statement of Dr. James Goddard, has statistics to show that death can result from ingestion of a single aspirin tablet and that statistically one child dies every three days from the effects of aspirin.

Are these untimely deaths to be controlled by denying the entire population the choice of availing themselves freely of the undeniable benefits of a proven beneficial drug?

Perhaps a broad, long-term program of consumer education is needed. We are not sure, yet this might be one of the auxiliary benefits from this legislation. I need hardly say that the NRMA will give every assistance that it can devise if this is a decision.

4. *Who Should Keep the Records?* We believe Congress should clarify the proposed record-keeping requirements. The proposed legislation would require record keeping at all levels of distribution.

The retailer would be required to maintain records for three years, disclosing the "nature of transaction, asquisition and *intended* end use." This is hardly possible, as we have already suggested. Would our salesclerks have to ask, "Madam, are you buying this junior size dress for yourself or your daughter?" In our fabric departments, we would have to ask: "Madam, what are you going to make out of this fabric?" We have untold instances of people buying fabrics for one purpose and then deciding to use them for another.

We are not for shirking our responsibilities. But here it is obvious that the record keeping must be the obligation of the resource from whom we buy the merchandise. We have no choice but to rely on what the vendor tells us. The retailer should therefore be exempt from the record-keeping requirement. He should be able to rely—as he does in the original Flammable Fabrics Act, and in other legislation the Congress has passed—the Wool Products Labeling Act, the Fur Products Labeling Act—on the guarantee he receives from his supplier.

5. *Why Shift Responsibility on Imports?* Regarding the importer of merchandise and his responsibility, may we ask why the emphasis on the responsibility of the *exporter* stated in the original Act of 1953 should in this new legislation be put upon the *importer*? There is no evidence, thus far presented, that the American consumer has been inadequately protected under the original provision, or that this provision has not worked.

To authorize the potential prohibition of all subsequent imports from any source, except upon filing a bond prohibitive in amount, would be a threat to the continuity of the nation's importing programs.

We ask that the original clause, putting the responsibility upon the *exporter*, remain unchanged.

6. *Permit Unsold Merchandise to be Sold.* May we also assume—because this also has been accepted past practice—that merchandise in the pipe-lines of dis-

tribution should the bills become law will be permitted to be sold? And that the 6-months' provision for the test standards' effectiveness be applied only to new merchandise. If applied to merchandise already in the channels of distribution when the legisation takes effect, too little time would be allowed for the merchandise to be sold. This should apply also to mechandise in process or contracted for at the mill level. A standard published in January, for example, would become effective in July. Unsold inventory of winter styles might become unsalable the following winter season. If there is any question about an item's hazard, the responsible merchant will of course remove it from sale.

7. *For HEW Making Study.* A final comment: we commend the proposal to have the Department of Health, Education and Welfare study the incidence of accident due to the burning of textile products.

There are apparently no reliable statistics available at this time.

I'm grateful to the Committee for the opportunity to express the NRMA's views on the pending bills. I repeat our offer to help in every way possible to provide greater and wider protection to the public. Each of us, we remember, is also a member of that public. We are therefore protecting ourselves. But vital questions need to be answered, complexities resolved, and responsibilities properly appointed.

STATEMENT OF HAROLD MASSEY, MANAGING DIRECTOR, GAS APPLIANCE MANUFACTURERS ASSOCIATION

My name is Harold Massey. I am Managing Director of Gas Appliance Manufacturers Association, and I appreciate the opportunity to submit this statement to you on behalf of manufacturers of gas-fired household appliances.

Gas Appliance Manufacturers Association is, as its name implies, the trade association of the nation's manufacturers of gas appliances and equipment. Our membership includes not only manufacturers of household-type appliances, but also manufacturers of components of those appliances, such as controls, valves, thermostats, burners and many other parts which go into the finished products and thus have a part in their ultimate efficiency and safety. In addition, many of our members manufacture household heating equipment, gas-fired air conditioning equipment, and industrial equipment.

We are an association of 642 manufacturers. We comprise 23 separate product divisions or groups, including a Domestic Gas Range Division, a Gas Water Heater Division, a Gas Clothes Dryer Division, a Gas Incinerator Division, a Gas Furnace Division, a Hotel, Restaurant and Commercial Gas Equipment Division and an Outdoor Living Gas Appliance Group.

I would estimate that some 360 of our members engage in the manufacture of gas appliances and equipment normally used by the consumer in the American home and another 125 of our members manufacture components which become part of such appliances and equipment. We estimate that our membership represents some 95% of the nation's production of gas-fired appliances and equipment. Thus we speak from a very broad base, and I know of no other association or group which represents even half this segment of our industry.

Because of the nature of the fuel involved the gas industry—not only our manufacturers but also the producers of gas, the pipeline companies conveying it over the nation and the utilities bringing it to the user—are deeply occupied with safety. Unless gas could be safely delivered to the consumer and safely utilized by him, the gas industry could not in its 151 years of existence have grown to what it is today. The assets of the gas utility and pipeline industry, totaled almost $33 billion at the end of 1965.

The leader in this field on behalf of the producers and utilities is The American Gas Association, which comprises some 444 company members. A principal activity of The American Gas Association has for 42 years been the testing of gas appliances and equipment for safety.

To this end it maintains two large laboratories—one in Cleveland and one in Los Angeles—where such appliances and equipment are subjected to relentless and exhaustive tests for compliance with United States of America Standards promulgated by United States of America Standards Institute (formerly American Standards Association). In the development of these standards our manufacturers, representatives of utilities and representatives of public interest bodies have applied their knowledge and experience. Annually, the Laboratories of the American Gas Association prepare from test data approximately 3800 reports

applicable to the gas appliances and accessories voluntarily submitted for evaluation. One appliance—say, a gas range—may be subjected to as many as 175 individual tests in the course of its evaluation, and each manufacturer who wishes his product to bear the certification mark of these laboratories must submit a prototype which can meet these stringent requirements. Nor is this the end, for even after acquiring the certification mark on his product, the manufacturer is subjected to periodic unannounced inspection in his plant by Laboratory personnel to make sure that his day-to-day output is faithful to its tested prototype.

Thus, in the field of safety we are, and for many years have had to be, a self-regulated industry. We are proud of our record, and we believe that it was not without recognition of this record, in his message to Congress on February 16, 1967, President Johnson said: "The natural gas industry is among the most safety conscious in the nation."

This does not mean that we can rest on our oars. To do so would be to invite our own disaster. We fully recognize that the protection of the consumer, not only in the area of safety but in many other areas also, has rightly become a matter of public attention today to an extent perhaps not previously attained.

We are concerned here today with the question of whether there should be a National Commission on Product Safety. The purpose of such a body, as set forth in House Joint Resolution 280, would be to investigate the adequacy of existing safety protection, both public and private, for the consumer and to make findings and recommendations. Speaking for my own industry, I can say at once that we do not oppose any sincere and intelligent governmental activity in the furtherance of consumer safety, because it is, after all, what the gas industry has been doing privately for many years.

I must, however, add a qualification. We have had long experience with attempts by state and city governments to legislate safety. Though doubtless well-intentioned, many of these have been prepared in an absence of adequate technical advice and information or otherwise been poorly designed, with the result that they have failed—or, if placed in effect as originally drawn, would have failed—to accomplish their purposes. In a number of instances these efforts by local legislative bodies would have had only the effect of creating throughout the country a variety of inconsistent requirements to be met by manufacturers who sell in the national market. Satisfying these varying local laws or ordinances—one requirement in this state or city and a different requirement in another—would have the result of increasing the cost to the consumer without increasing safety. For reasons sometimes hard to understand, many of the legislative bodies which undertake this type of law or ordinance often seem unaware that there is at their disposal a large body of existing safety standards and an accumulation of many years of intense technical study and experience in the field of safety. We have consistently tried to help these legislators with technical advice toward more meaningful and effective consumer protection, and I am pleased to state that on many occasions they have found our assistance useful.

If it is the judgment of the Congress that the establishment of a National Commission on Product Safety will serve a genuine need and a useful purpose for consumer safety in the nation, we welcome that decision, and in doing so we emphasize that if such a body is to accomplish its mission, it will only do so with adequate expert advice in the many fields which must engage its attention. These fields will be numerous and varied, and its studies must be intensive and its eventual findings carefully developed. Our Association can speak only for the many hundreds of manufacturers who make gas-fired appliances and the components which go into them, but to whatever extent we may be of service toward consumer safety, we place ourselves at the disposal of this Committee and of the National Commission on Product Safety.

I am authorized to say that the American Gas Association concurs in the foregoing statement.

STATEMENT BY GUENTHER BAUMGART, PRESIDENT, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS

Mr. Chairman and committee members, I am Guenther Baumgart, President of the Association of Home Appliance Manufacturers—sometimes called AHAM. AHAM's 80 members manufacture all types of household appliances—from automatic washers and refrigerators to toasters and blenders.

This Association, although modified by name changes and mergers, dates back over 50 years to the time home appliance manufacturing moved from ma-

chine shop to assembly line production. AHAM represents the preponderance of the industry, from some of the country's largest companies to small, highly specialized producers.

It is estimated that AHAM's members are currently manufacturing 80 million home appliances annually—appliances serving users in American homes, reducing drudgery, saving time and energy, providing food and drug preservation, cleanliness, and generally making life easier and more meaningful for homemakers and their families than ever before in history. It is an accepted fact that our health and our living standards today are the highest in the world. Individually and collectively, appliance manufacturers feel their products demonstrate sincere concern for consumer safety and that the industry's safety accomplishments are an outstanding example of successful voluntary regulation by the private segment of the economy. The home appliance industry has also been called an outstanding economic citizen by members of congress for offering improved products at continually lower prices and keeping homemakers informed about the purchase, use and safety of home appliances.

Because of this long established and ingrained interest in product safety, the industry knows that it can ill afford to judge hastily any proposal made in the name of product safety. Therefore, the association has come to assist the committee in its deliberations on the National Commission on Product Safety bill.

The industry has constantly conducted a broad research program to develop safe products. Individually and collectively, through associations, appliance manufacturers have developed some of the most exhaustive testing and certification programs on record. The combined activity of the industry involves literally hundreds of research and design facilities and testing laboratories, together with the efforts of thousands of scientists, engineers and technicians, who are dedicated to an unending search for better, more reliable and improved products. The appliance industry has amassed a great fund of technical knowledge in the field of safety.

Moreover, our industry members are cooperating with local, state and federal governments in developing product standards that are practical and safe for use by the customer. Standards have been developed through cooperation with Underwriters Laboratories, the American Standards Association (now USASI—United States of America Standards Institute), the American Gas Association, and similar organizations. These self-imposed standards affect virtually every product we make, and the 500 million appliances in American homes today testify to their safety.

Coincidental to this concern for safety, the industry has established a record as an outstanding economic citizen. In the past two decades it has offered continually improved products, products of greater reliability and safety and products of continually lower costs. Refrigerators, ranges, automatic washers, and other appliances produced 15 years ago offer little comparison in consumer benefit and utility to those made today. While appliances have increased in size and have offered new features and safety, their cost to the consumer has been steadily declining. According to Bureau of Labor Statistics the cost of all household appliances has decreased over 30% since 1952, while almost all other product and service classifications have increased significantly. At the same time, reliability has been greatly improved. For example, automatic washers require 70% less service today than they did just six years ago.

Efforts have also been made by the manufacturers individually and collectively through their trade associations to educate the consumer on proper product use. These private efforts have continued and will continue into the future. The success of the industry depends upon the manufacture and sale of safe products, and the industry welcomes any opportunity to cooperate with governmental agencies, other groups, and individuals in the interest of more safety.

We should like to direct your attention to specific provisions of the resolution pending before this committee. If the Congress chooses to pass this legislation, we believe the membership qualifications of the proposed Commission should be stated more concretely. The resolution states that the members should be "specially qualified to serve . . . by virtue of their education, training, or experience." We believe the members of the Commission, if it is established, should be broadly representative of the groups that have a direct interest in the subject, and should include persons who have worked directly with the products. At least three members of the Commission should be selected from persons who have had research, engineering and quality control experience in industry. One other

should be an outstandingly qualified individual who has had experience in formulating and administering industry-wide safety codes. We further believe that the resolution should state expressly that the applicable principles of the Administrative Procedures Act should be followed by the Commission. When an industry or a particular product is to be investigated, notice of hearing or other means of investigation should be published in the Federal Register, and all interested parties should be given an opportunity to present oral testimony or written statements.

STATEMENT OF THE AMERICAN MUTUAL INSURANCE ALLIANCE

The American Mutual Insurance Alliance is a trade association of 121 mutual property and casualty insurers, with principal offices in Chicago, Illinois and Mid-Atlantic office in Washington, D.C.

The member companies of the Alliance do business in all states, and write better than one-half of the premiums accounted for by mutual insurers. One of the principal casualty lines of our member companies is product liability insurance, a form of insurance which affords protection to manufacturers and sellers against injuries alleged to have been caused by defective products. Thus our members have a direct and substantial interest in the study and investigation proposed under H.J.Res. 280.

We support an objective study and investigation to identify those household products which present an unreasonable hazard to the health and safety of the public; we also support the determination of standards designed to eliminate any unreasonable hazards so discovered. To this end, we pledge our cooperation and our resources. We would hope that a responsible, knowledgeable representative of the casualty insurance industry at large would be among those chosen to serve on the Commission.

We question, however, the apparent intent of Sec. 2(a) (3) and (4), which propose a study and investigation of—

> "(3) the protection against such hazardous products afforded at common law in the States, including the relationship of product warranty to such protection; and
>
> "(4) a review of Federal, State, and local laws relating to the protection of consumers against such hazardous products, including the scope of coverage, the effectiveness of sanctions, the adequacy of investigatory powers, the uniformity of application, and the quality of enforcement."

While the meaning of the foregoing quoted portion of H.J.Res 280 is not entirely clear to us, it seems to suggest a study and investigation of the body of State statutory and case law dealing with the legal liability of manufacturers or sellers to the purchasers or users of allegedly defective products.

To the extent the Resolution contemplates such study and investigation, we urge that it is not germane to a study of product safety, and respecfully suggest that the quoted portion be clarified to eliminate any such legal study.

The reasons for this position are probably obvious. Those qualified to study safety aspects are not necessarily qualified to study the legal aspects, nor would the legally qualified necessarily be expert in the safety area. The body of statutory and case law dealing with negligence in the manufacture and sale of products has been carefully evolved over a period of many years by the courts of the various States to meet the varying needs of their diverse citizenry. To attempt to impose Federal standards in the area of legal liability for negligence in the manufacture or sale of products would be contrary to the public interest and the orderly evolution of State statutory and case law.

In summary, we concur in the need for objective basic study and investigation with respect to household product safety; we believe, however, that the study should be confined to product safety and not envelop the broad subject of State administered tort law in the product field.

STATEMENT OF EDWIN E. MARSH, EXECUTIVE SECRETARY, NATIONAL WOOL GROWERS ASSOCIATION

Mr. Chairman and members of the committee, this statement is presented on behalf of the National Wool Growers Association, which has its principal membership in a 22-state area where 86 per cent of the nation's sheep, lambs and

wool are produced. The Association was organized 102 years ago and is generally recognized as the spokesman for the sheep producers of the United States.

At our 102nd Annual Convention in January of this year we adopted the following resolution:

"We support proposals which will strengthen the Flammable Fabrics Act. Specifically, we endorse legislation which would have the effect of including blankets and bedding under the Act."

We endorse H.R. 5654 introduced by Mr. Staggers and feel enactment of this bill would improve the Flammable Fabrics Act and would give more protection to the consumer. Mr. Fisher has introduced H.R. 7920, which contains the language of H.R. 5654 with an added provision which we would also like to endorse. This provision broadens the definition of "interior furnishings" to include those used in vehicles or vessels for air or surface transportation, including automobiles, buses, railroad cars, boats, ships and airplanes. H.R. 7920 also provides for establishment of minimum standards of flammability and fiber content for furnishings used in such vehicles or vessels.

We assume the term "interior furnishings" in H.R. 5654 would include blankets and bedding. However, if they are not included, we strongly urge inclusion of both blankets and bedding in these proposed amendments to the Flammable Fabrics Act.

In unofficial tests our Association has conducted with samples of three blankets (wool, acrylic and viscose-rayon), some very dramatic results have been observed. A lighted match was applied to each blanket for five seconds. While the wool blanket will burn, we have found it will only burn while a lighted match continues to be applied to it. When you take the match away, burning stops immediately and the only damage is a black spot. This illustrated to us that wool will not support combustion. On the other hand, the two synthetic fiber blankets ignited immediately, continued to flame profusely, and melted rapidly even after the lighted match was removed.

If there is any question about these advantages of wool, we would welcome official laboratory tests for flammability of this fiber; also for mohair, which has this same non-combustible quality. We feel that greater use of wool and mohair would provide an important solution to the fire hazard problem.

Not only is it important for the U.S. government to set flammability standards for fabrics used in furnishing homes, offices and places of assembly, but it is also important to protect people's lives by setting standards for automobiles and airplanes as well as buses, railroad passenger cars, and boats.

Mr. Chairman, we commend the Committee for holding hearings on these bills to strengthen and improve the Flammable Fabrics Act. We urge that you favorably report H.R. 5654 with the important addition incorporated in H.R. 7920.

STATEMENT BY ROBERT D. MCCABE, MANAGING DIRECTOR, UDERWEAR INSTITUTE

My name is Robert D. McCabe and I am the Managing Director of the Underwear Institute, the national association, founded in 1866, of manufacturers of underwear, nightwear and allied products. The latter are principally knit shirts commonly designated as polo, tennis, basque, tee, or sweat shirts. Shipments of our knit cotton/wool products in 1966 totaled 87,690,000 dozens and if data for items produced from man-made fibers were available, this figure would be considerably higher.

The Flammable Fabrics Act became effective July 1, 1954 and in the period 1954 to 1966 inclusive this industry's shipments of knit cotton/wool products alone have totaled 10,738,776,000 garments for an annual average of over 826,000,000 garments. While I do not know of any statistics on the subject of burns specifically involving our products, I am certain, from the paucity of such cases reported in either the trade press or elsewhere, that the total would be so small as to be relatively infinitesimal. In fact, such flammability cases as have come to my attention have generally involved sweaters, scarves, veils, blouses, and dresses and these have frequently been imported or made here of imported fabric.

My purpose in bringing this to your attention is to point up the fact that this industry's record has been an excellent one both before and after July 1, 1954 and that we are in sympathy with the President's desire, as stated in his Special Message on Consumer Protection, to protect consumers "against unsafe products, against misleading information, and against the deceitful practices of a few busi-

nessmen that can undermine confidence in the vast majority of diligent and reputable firms".

However, we also feel that as far as these particular matters are concerned existing statutes such as the Federal Trade Commission Act and the Flammable Fabrics Act are sufficient. The National Fire Prevention Association, in the introduction to its Standard for Classification of the Flammability of Wearing Apparel No. 702–1963, says of wearing apparel fire accidents: "Most such accidents are caused by ignorance or carelessness on the part of the wearer. . . ." This would seem to argue for an educational program designed to make the consumer more careful and safety conscious rather than for punitive action against the manufacturer.

The recent Apollo Space Craft and McCormick Place fire disasters are fresh in everyone's mind and serve to point out that just about anything will burn given the proper conditions. It should be remembered also that where a substance will not support combustion it can still have extremely harmful and possibly fatal consequences. Furthermore, I should like to call attention to the fact that "fireproof" underwear has been available for some time at $17.50 a set but sales have not indicated that the consumer is interested in additional safety at that price. *Modern Textiles* magazine for February, 1964 stated that "Despite the many years of effort, flameproofing of textiles is still in its infancy". More recently, the July, 1966 issue of *Textile Industries* magazine reported that "Usage (of flame-resistant finishes) has been limited because of high application cost and undesirable results such as nonpermanency, changed appearance, feel, and performance of treated product".

It is our feeling that before the Congress enacts additional legislation in this area it should have before it those facts and figures which are either presently non-existent or not sufficiently complete. These should include a study and investigation of the deaths, injuries, and economic losses resulting from accidental burnings as mentioned in Section 14(a) of S. 1003 and H.R. 5654 as well as the research into flammability, the feasibility studies in reduction of flammability and the development of flammability test methods and testing devices refered to in Section 14(b) of these Bills. If these cannot be undertaken within the framework of the existing Federal agencies, then we would support H.J. Res. 280, to establish a National Commission on Product Safety.

Pending the findings of such investigations and research, we feel that the Flammable Fabrics Act should be retained as presently constituted except that we support the amendment proposed in H.R. 6142 and H.R. 7141 to clarify Section 4(a) of the present Act. Since the law applies only to uncovered or exposed parts of articles of wearing apparel we feel that it is desirable and necessary that the specific meaning of this language be spelled out.

STATEMENT OF THE CONSUMER PRODUCTS DIVISION OF THE ELECTRONIC INDUSTRIES ASSOCIATION

This statement is being made on behalf of the Consumer Products Division of the Electronic Industries Association (EIA), the national organization of electronic manufacturers. EIA members account for approximately 80% of the $20 billion electronics industry. The Association represents the producers of both electronic products and their varied components.

The specific consumer electronic products manufactured and marketed by the members of the Consumer Products Division are television sets, radios, phonographs and tape recorders and players and combinations thereof.

The purpose of this testimony is to pledge the backing and support of the consumer electronics industry for objectives of the National Commission on Product Safety Act should Congress adopt it and to review the industry and the Association's own efforts in safeguarding the users of our products for the past five decades.

The problem of protecting the consumers of our products, to be fully understood, must be viewed against the background of the phenomenal growth of the consumer electronics industry, especially in the two decades since World War II.

In 1946 only 600 television sets were produced. In 196 factory sales approached 13 million units and 90 million units are now in use. As the main source of entertainment and information and one of the sources of culture and instruction in the American home, this completely new industry has achieved a per-household

saturation in its first twenty years unparalleled in the field of consumer durable goods.

The history of radio sales is equally impressive. In 1926 sales were at the rate of slightly over a million units a year. In 166 sales reached 47 million units in the home and auto categories. Today, there are 240 million radios in use.

Phonographs, the pioneer product of the industry, are now selling at the average rate of 7 million units a year and the total units in use approximate 50 million.

The fourth major product of our industry—the tape recorder—emerging from its infancy, is destined to become one of the greatest sources of enjoyment and perhaps to alter the historic basis of communications. Ten years ago sales were about 200,000 units. Today sales are estimated at 5 million units annually, with about 15 million machines in use in home and office.

Another new product—the "walkie-talkie" transceiver—is blooming in a market that hardly existed three years ago. Over seven million hand-held transceivers were sold in 1966.

Just in these five major products of consumer electronics, over 400 million units are serving to entertain, to link individuals, to record family histories, to open the world, to enrich the life of the individual citizen in myriad ways.

Despite such truly outstanding growth, when statistically there might be reason to expect an upswing in injuries connected with the use of a complicated electronic instrument, such as a television set, radio, phonograph or tape recorder, there has been no such rise. This has not occurred because consumer electronics manufacturers—individually and collectively—have for the last four decades been diligent in developing and maintaining product safety.

In addition, while consumer electronics have maintained their traditional role as household products, consumer demand has necessitated the development of a whole new family of personal and portable televisions, radios, phonographs and tape recorders. This has brought about a much higher degree of set-user contact, and consequently a much greater statistical likelihood of injury. The significant fact is that there has not been such an increase.

Although specific product safety developments are summarized below, perhaps the most significant development to assure protection from electrical shock in consumer electronic products has been the rapid advance of the transistor and the resultant increase in battery-operated products, which have already and will increasingly in the future eliminate many potential causes of bodily injury.

The continued activity of scientists, technicians and engineers of individual companies, in addition to Association efforts, has resulted in constantly improved, more reliable consumer electronic products.

Within the industry's trade association, product safety activities are centered in the EIA Safety Committee. The Committee was formed more than twenty-five years ago to formulate, recommend and establish suitable requirements for safety in consumer electronic products such as radios, television receivers, phonographs, high fidelity component systems, magnetic tape recorders and players, and other similar devices intended for household use.

Its membership consists of qualified electronic experts, product engineers, and other technically oriented individuals closely associated and acquainted with the design and production of electronic consumer products and specifically knowledgeable in matters of safety and its implementation in the design, manufature and usage of such products. The membership of the committee on safety represents both EIA member companies and non-member companies, and includes members from large and small manufacturers.

The function of the Committee is to adopt such practices and measures as are necessary to assure that consumer products are free of shock, fire or health hazard and recommend them to all manufacturers. In this connection, the Committee endeavors to work closely with any recognized local, national, or international safety group, (such as Underwriters' Laboratories, Inc., and United States of America Standards Institute).

The Safety Committee meets on a regular basis, scheduling three or four meetings per year with the subjects for discussion derived from a variety of sources, including recommendations from individual committee members, known proposals or actions undertaken by various national and international organizations. In addition, pertinent activities of manufacturers of parts and materials used in consumer products and by other manufacturers of electrical appliances are re-

viewed regularly by the Committee. In general, the Committee activities are related to the investigation and recommendation of such practices by the industry as to advance the degree of safety in its products.

To achieve this goal, its total effort is directed toward elimination of shock, fire and casualty hazards in consumer products.

Through its contacts with, and the activities of, its members in international standards work, the Committee, also participates in the formulation of international safety standards which ensure that consumer products in foreign commerce maintain the same level of safety.

In one specific aspect of its activities, some members of the EIA Safety Committee are, also, invited to participate in Underwriters' Laboratories Industry Advisory Conference on the Safety Standards for Radio and Television Receiving Appliances. Through their efforts, the recommendations and advice of the industry are presented to the Underwriters' Laboratories and thus serve to implement and expedite the formulation of the UL Safety requirements for electronic household appliances. Such requirements to which the industry complies are reflected in the UL Safety Standards for Radio and Television Receiving Appliances—UL Subject 492.

During the years of its existence the Committee, through its own deliberations and studies plus consultations with other similarly interested organizations, has recommended, and the industry has voluntarily adopted, many practices which have resulted in a safer product for the consumer.

Specific examples of EIA and joint EIA/UL efforts which have resulted in a safer product include:—

(1) Reduction of shock hazard thru the reduction of leakage current from 15 milliamperes in 1946 to the present level of 2.5 milliamperes. This work is continuing and a further reduction is on the horizon.

(2) Interlock switches which automatically remove dangerous voltage have become a standard safety device where appropriate to protect service personnel and consumers who may do their own servicing.

(3) The use of protective enclosures around high voltage areas has become a standard practice.

(4) The use of special fuses designed to eliminate fire hazard and prevent improper replacement.

(5) The fail-safe picture tube to protect the viewer from the implosion hazard.

(6) The formulation of minimum standards for mechanical strength and thermal stability of plastic materials used as enclosures for hazardous equipment areas and for the complete equipment.

(7) The use of circuit breakers to prevent fire and shock hazard.

(8) The use of informative marking and instructions to guide the customer in the safe and proper use of the product.

(9) The promotion of factory production practices to conduct tests to ensure that all safety devices are functional prior to packing for shipment.

(10) The promotion of more restrictive requirements for higher powered devices such as color television receivers.

Recognizing the need for continual improvement in the safety of consumer products, the industry, through its Safety Committee, is currently working toward additional safety features. These efforts will continue because the success of the industry and of individual companies within the industry will not be possible unless the consumer's safety remains the constant preoccupation it has been in the past.

This industry is proud of its record of voluntary self-regulation in product safety in the past half century.

We recommend that membership on the National Commission on Public Safety include representation from the electrical-electronic industry whose products are to be studied, and these representatives should be familiar with both the manufacturing and merchandising aspects of safety problems.

We further recommend that the Commission in its inquiry should adhere to the principles of the Administrative Proceedures Act and thereby assure every industry of adequate notice and an opportunity to be heard with respect to its own products.

The Consumer Products Division of the Electronic Industries Association welcomes the proposed inquiry into the area of safety of consumer electronic products and pledges its full cooperation.

THE AMERICAN PUBLIC HEALTH ASSOCIATION, INC.,
New York, N.Y., April 7, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, House Committee on Interstate and Foreign Commerce,
Rayburn Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: As a professional organization serving over 17,000 members who are active in all phases of public health work, the American Public Health Association has a deep interest in the problems relative to deaths and injuries which result from burns and wishes to support the principles contained in H.R. 5654, which you have introduced, H.R. 5474, introduced by Congressman Quie and H.J. Res. 280, introduced by Congressman Moss.

It is no accident that the preponderance of the all too frequent newspaper accounts of horrible burning accidents in homes involve small children, helpless victims of their own ignorance and adult negligence. In general, children who have not yet reached the stage of growth and maturity in judgment as to be particularly careful about exposing themselves and their clothing to space heaters, gas or electric ranges, matches, candles, etc., are particularly susceptible to accidental ignition of clothing. Deaths such as that of the five year old girl whose pajamas caught on fire as she leaned across the stove to reach a piece of candy are tragically frequent. Also particularly susceptible to death by fire are the aged, particularly those with disabilities associated with senility, cerebral arteriosclerosis and the associated foregetfulness and carelessness. It is imperative that action be taken to reduce the danger to which these less alert members of our population are constantly exposed. This is the responsibility of an adult responsible population.

As a result of the Flammable Fabrics Act, which became effective on June 30, 1954, the Secretary of Commerce promulgated a safety standard (Flammability of Clothing Textiles, Commercial Standard 191–53) and developed rules and regulations in this area. This Flammable Fabrics Act is based on standards of flammability promulgated more than a decade ago and fails to include fabrics which require more than one second to ignite. New methods of testing and standards for classifying dangerous, flammable fabrics together with technical developments in chemical treatment to make fabrics more flame retardant indicate the need for more stringent laws governing these materials so as to reduce the hazard from dangerous, flammable fabrics which can presently be sold and distributed freely in interstate commerce. The current standard for plain surface textile fabrics, for example, is calibrated to allow fabric to be sold unless it is so dangerous that it ignites in one second. Even then, if it does not burn rapidly enough for the flame to travel five inches in three and a half seconds with the cloth at a 45 degree angle, it is considered safe for wearing apparel. In research conducted by the American Academy of Pediatrics this standard has been found to be inadequate to control the sale of hazardous materials for clothing and other uses.

H.R. 5654 would broaden the protection of the Flammable Fabrics Act of 1953 to revise flammability standards and would include standards for interior furnishings, such as draperies, rugs, upholstery, and foam padding, if it is determined that these standards are needed. Research would be authorized on the part of the Commerce Department—much needed research into the flammability of furnishings, fabrics and materials. In his February 28 message to the Congress, President Johnson urged immediate action in this vein because of the evidence that the Flammable Fabrics Act is presently insufficient and does not extend to such everyday items as baby blankets, drapes, carpets, and upholstery fabrics. The American Public Health Association supports this position.

Bedding is, in effect, the clothing worn at night. In H.R. 5474, introduced by Congressman Quie, special reference is made to the need to include bedding in the provisions of the Flammable Fabrics Act. We support this position and assume that this is included in the more comprehensive bill, H.R. 5654. If this is not the case we recommend inclusion of these vital provisions.

In a resolution adopted by the Governing Council of the American Public Health Association on November 13, 1963, the following conviction was stated: "The American Public Health Association believes that Federal and State legislation should be enacted based upon scientific information presently available and urges State and local health departments to support needed legislative changes, efforts to increase the use of flame retardant fabrics, and the use by hospitals, hotels, and nursing homes, and homes for the aged of flame retardant

fabrics in their sheets and bedding. The Association further urges industry to develop more and newer flame resistant synthetic fibers."

H.J. Res. 280, introduced by Congressman Moss, would establish a National Commission on Product Safety to comprehensively review the need for revision of regulation of product safety. Accidents are now the leading cause of death in all age groups from one to 35. They kill more children than all the diseases combined and are the greatest single cause of loss of productive years of life. In addition to the human suffering involved, accidents cost the nation more than 10 billion dollars a year. For these and other reasons the American Public Health Association since 1956 has been urging consideration of the advisability of establishing within the Federal system a National Accident Prevention Center to coordinate the activities of various accident prevention agencies in order to improve the safety of the people of the United States including the conducting of research, investigations, experiments, and demonstrations relating to the cause and means of preventing accidents. H.J. Res. 280 is in accord with these recommendations, and the American Public Health Association supports this effort.

It would be most appreciated if the views of the American Public Health Association could be included in the record of the hearings on H.R. 5654, H.R. 5474, and H.J. Res. 280.

BERWYN F. MATTISON, M.D.,
Executive Director.

OWENS-CORNING FIBERGLAS CORP.,
Washington, D.C., May 19, 1967.

Hon. JOHN E. MOSS,
Chairman, Commerce and Finance Subcommittee, House Interstate and Foreign Commerce Committee, House of Representatives, Washington, D.C.

DEAR CONGRESSMAN MOSS: Owens-Corning Fiberglas Corporation is pleased to submit this statement to the Commerce and Finance Subcommittee of the House Interstate and Foreign Commerce Committee, as part of the testimony being taken on the proposed amendments to the Flammable Fabrics Act. We believe this information to be pertinent, as glass fiber textile materials represent a prime source of inherently nonflammable fabrics, already in wide use in the American home.

Our credentials to speak on this subject are as follows: Owens-Corning's predecessor companies developed the first glass fiber materials for commercial use, in 1932. Since that time, Owens-Corning has been the leading producer of glass fiber materials and, we believe, the leading innovator in glass fiber research and development. Our products are sold under the registered trademark, FIBERGLAS.

We were instrumental in developing glass fiber yarns for decorative and industrial fabrics, and we have played a major role in turning these fabrics into end use applications such as curtains, draperies, bedspreads and tablecloths.

Owens-Corning holds more than 750 patents in glass fiber and related developments, and has 300 others now pending. We devoted approximately $10 million to research, development and process and product engineering in 1966. We maintain major research and technical facilities in Granville, Ohio and Ashton, Rhode Island. We have 11 manufacturing facilities in eight states and Battice, Belgium. In 1966 our sales totalled $373 million, almost completely in glass fiber products. We employ approximately 14,000 people.

Glass fiber products take many forms. The first commercial development was an air filter. One of the most well-known applications is thermal insulation. Another major use is in textile fabrics, which have been received with enthusiasm by the American public. Production of glass fiber yarn for decorative and industrial fabrics has become a major part of our business and is continuing to grow.

In calendar 1966, approximately 180 million yards of glass fiber fabrics were woven and sold in the United States. This compares with approximately 74 million yards in 1960. We believe this rapid growth is testimony to the unique properties of the material.

Glass fibers are pure glass—the product of silica, soda and lime—batch melted and drawn through tiny platinum holes, or bushings, into strands. Tremendous amounts of thermal energy are used in this process. As a result, some glass comes close to a complete state of equilibrium with our varied atmospheric conditions. It achieves a state of stability that organic materials—and, consequently, natural and other man-made fibers—cannot achieve.

This accounts for the basic properties of glass fibers: the highest tensile strength of any textile fiber and dimensional stability under load or moisture.

Heat, cold, moisture and dryness—all environmental conditions—have little or no effect on glass. To the consumer, this means glass fiber textile materials won't rot, fade or shrink, are easily washable and never need ironing. Glass fiber fabrics are the original permanent press fabrics.

Of immediate concern here is the complete nonflammability of glass fibers. They withstand temperatures up to 1350° F. before melting. They never support combustion, nor do they produce the toxic fumes associated with many organic fibers.

The major use of these fabrics in the home today is in curtains and draperies. Glass fiber ready-made draperies now represent a very significant percentage of all ready-made draperies sold in the United States today. The reason for this success is in the material's no-iron, easy-care attributes. Nonflammability has not been an important factor in consumer acceptance. The consumer apparently is not conscious of fire safety when purchasing home furnishings materials. This is borne out in a recent consumer survey conducted for Owens-Corning by Opinion Research Corporation, Princeton, New Jersey. The poll indicated that flammable or nonflammable characteristics of draperies and curtains played little part in their selection by consumers.

The housewife's attitude differs markedly from commercial customers who buy decorative fabrics for public meeting places and the like. The flammability of these fabrics are specified in various building and fire codes and regulations. The nonflammability of glass fiber curtains and draperies is an important factor in their widespread acceptance in this market.

While we cannot document this, it appears that the consumer indifference to the flammability factor is a combination of unawareness of the dangers of flammable materials and a measure of apathy.

Until several years ago, glass fiber fabrics were restricted primarily to drapery and curtain applications due to fiber-to-fiber abrasion problems. However, this situation changed radically with the development by Owens-Corning of Beta fiber, an ultrafine glass fiber. Beta is the finest diameter filament known to man; at one-quarter denier per filament, Beta fiber is six times finer than silk, one-third the diameter of vicuna and one-sixth the denier of the finest acrylics, nylon or viscose. Because of this fineness, Beta fiber fabrics offer the long-desired softness, pliability and flexibility needed for other fabric applications.

With Beta yarns, we are now able to extend nonflammable applications of glass fiber fabrics from the window to other areas of the home. Tablecloths, bedspreads and mattress ticking are the most notable examples of new applications. However, it should be pointed out that the consumer is not buying these products for their nonflammability, but for their ease of care features.

Another new product now being introduced is Beta cubicle curtains. These are the curtains drawn around hospital beds to give privacy, and also can serve as a fire blanket in case of oxygen-based flash fires.

We believe Beta textile materials represent a significant breakthrough for the American consumer, and development work currently under way promises to make them even more significant. Products now in the Laboratory include blankets, slipcovers and upholstery fabrics. In the long term, we also see a potential place for Beta fabrics in the apparel market. However, there is considerable research and development work to do in this area.

However, Fiberglas Beta fabrics are already being used as fire protective clothing, by firemen and other rescue workers. They are standard equipment, for example, at many U.S. and Canadian airports. Race car drivers have used Fiberglas Beta protective suits for several years. By far the most dramatic relization of these nonflammable characteristics is the current application of glass fibers in the Apollo Program. Fiberglas Beta textile materials are scheduled to replace flammable materials in astronaut garments and other textile materials that will not burn or support combustion in the all-oxygen atmosphere used in the Apollo Crew Capsule. Owens-Corning is under contract to NASA to develop these Beta fiber applications for the Apollo Program.

In conclusion, I would like to summarize the following points:

1. There is available to the consumer today completely nonflammable fabrics made of glass fiber yarns.

2. These fabrics are presently used principally as draperies and curtains, but with the recent development of Beta fiber are moving into such uses as bedspreads, tablecloths and mattress ticking.

3. Research under way indicates potential future use as slipcovers, upholstery, blankets and even apparel.

4. These fabrics are inherently nonflammable and never need retreating.

5. With few exceptions, the consumer has not purchased glass fiber fabrics for their inherent fire-safety, but for their unique ease-of-care features.

6. The consumer may be unaware of the dangers of flammable fabrics or apathetic toward the problem. He has probably not been well educated on the subject.

Sincerely yours,

JOHN MARSHALL BRILEY,
Senior Vice President.

NATIONAL ASSOCIATION OF BEDDING MANUFACTURERS,
Washington, D.C., May 4, 1967.

INTERSTATE AND FOREIGN COMMERCE COMMITTEE,
U.S. HOUSE OF REPRESENTATIVES,
Rayburn Building, Washington, D.C.

GENTLEMEN: This association has just learned that H.R. 5474, a bill that would make the outer coverings of mattresses and boxsprings subject to the provisions of the Flammable Fabrics Act, already has been heard in subcommittee.

H.R. 5474 is identical to H.R. 3610 introduced in the 89th Congress, a bill on which our Association requested an opportunity to testify concerning certain aspects if any hearings were scheduled. Somehow, we were not aware of H.R. 5474 or its hearings.

For your committee's information and consideration, the National Association of Bedding Manufacturers has carefully studied H.R. 5474 and is opposed to this pending legislation *insofar as it includes the outer coverings of mattresses and boxsprings.* (The members of NABM manufacture mattresses, boxsprings, and other sleep equipment, but do not manufacture bed covering products such as blankets and bedspreads.)

Our association feels that adding the outer coverings of mattresses and boxsprings to the present Flammable Fabrics Act, as H.R. 5474 proposes, would serve no useful purpose. The standards and tests prescribed in the present Flammable Fabrics Act are designed for wearing apparel and would be inappropriate to apply to mattresses and boxsprings.

A more practical and comprehensive approach to the subject of flammability, this association believes, is (1) legislation such as the current bills H.R. 5654, 5780, and 5938 which would completely amend the Flammable Fabrics Act to provide a system for proper study and determination of any new flammability standards which may be needed for bedding products and other interior furnishings; and (2) continuation of research, which has been conducted for several years by private industry and such government groups as the U. S. Department of Agriculture Agricultural Research Service, in search of feasible and effective methods to make bedding products more flame resistant.

If there are any further opportunities for witnesses to testify before your committee on H.R. 5474, I would appreciate being so notified.

Respectfully yours,

ALBERT S. ROISTACHER,
Executive Vice President.

AMERICAN APPAREL MANUFACTURERS ASSOCIATION, INC.,
Washington, D. C., April 4, 1967.

Hon. JOHN E. MOSS,
Chairman, Subcommittee on Commerce and Finance,
House Committee on Interstate and Foreign Commerce,
Rayburn House Office Building, Washington, D.C.

DEAR CONGRESSMAN MOSS: The limited time available to us in which to prepare for your subcommittee hearings on H.R. 5654, to amend the Flammable Fabrics Act, will preclude our having a witness available when the subcommittee hearings begin on April 5.

While we have not yet formulated an official Association position on H.R. 5654, we did wish to observe that there clearly appears to be a need for more information as to the extent of the problems to which the bill is directed. At the present time reliable, detailed information does not appear to be available and we find it difficult to understand how meaningful legislation can be enacted without considerably more data at hand.

In the case of our own association, I can advise that since we moved to Washington more than seven years ago we have never received a single complaint of any description from our customers, resources, or members on this subject. Of course, this does not necessarily mean there are no problems. It does mean, to us at any rate, that we need to know a great deal more about the extent and the nature of these problems if they do exist—and subsequently our place in eliminating or mitigating them.

To that end, we can unequivocally pledge the wholehearted cooperation and support of the American Apparel Manufacturers Association.

If the hearing record remains open for a sufficient amount of time for us to submit additional observations, we would appreciate the opportunity to do so. In the meantime, we will be most apreciative if this letter can be made a part of the official hearing record.

Sincerely,

ELLIS E. MEREDITH,
Executive Vice President.

AMERICAN RETAIL FEDERATION,
Washington, D.C., April 26, 1967.

Hon. JOHN E. MOSS,
Chairman, Subcommittee on Commerce and Finance, Interstate and Foreign Commerce Committee, Rayburn House Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: The American Retail Federation submits the following comments on H.R. 5654, a bill to amend the Flammable Fabrics Act. The American Retail Federation is a voluntary federation of 73 state-wide and national retail trade associations with offices located at 1616 H Street, N.W., Washington, D.C. 20006. We respectfully request that these comments be made a part of the official record of hearings.

The Flammable Fabrics Act has been an effective element in eliminating dangerously flammable clothing hazards and has had the support of retailers since its enactment. The American Retail Federation supports generally the purpose and intent of H.R. 5654. We particularly would like to give full support to the precise manner in which Sec. 10 of proposed H.R. 5654 provides for a most urgently needed structure for collecting information and statistics on the frequency and causes of flammable fabric hazards.

We do, however, recommend the following changes or amendments.

First, we would like to point out the need, in this type of amending legislaton which broadens and expands regulations for product lines or categories, for adequate protection of floor stocks and inventories of legally produced goods already in the stream of commerce. In our opinion, newly covered merchandise, except in extremely flammable cases, should not be precluded from sale if it was produced prior to the promulgation of the new regulation. We suggest that the treatment of this type of goods follow that which was provided in the Fair Packaging and Labeling Act of 1966. Moreover, the manufacturing and distributive processes require time for reasonable adjustment and implementation. In our judgment, this period should be at least one year, but careful study may require an even longer period depending on the particular product category involved. If it is the intent of the Committee that implementation of extension of coverage be on a product-by-product basis, the Bill should so say.

Second, we call attention to (d) of Sec. 4, Standards of Flammability, requiring, "Each standard . . . promulgated . . . shall become effective six months from the date on which such standards are published . . ." We believe this too constitutes inadeqaute lead-time to implement any new standards prescribed under H.R. 5654. Again, we consider a minimum of a year as necessary.

Third, the proposed Sec. 4, Standards of Flammability, delegates to the Secretary of Commerce the mandatory power to promulgate standards and tests for flammability of clothing. This we endorse. The discretionary power to promulgate standards on products other than clothing should also remain in the Secretary of Commerce. However, in our opinion, it would be essential to expand the Standing Committee for Flammability of Clothing and Textiles to include retailing. Therefore, we recommend that the proposed amendments include the requirement that before a standard for flammability be promulagted, the Secretary of Commerce consult with the Standing Committee on the Flammability of Clothing and Textiles; and that the proposed amendments specifically provide for inclusion on this Committee representatives from retailing.

Fourth, the Flammable Fabrics Law of 1953 made the foreign exporter responsible for preventing shipment of dangerously flammable clothing or fabric to the United States—and it held over the exporter the possible prohibition of all subsequent exports in the event of any infraction. The reason for this potentially severe penalty was the fact that the foreign exporter was not subject to prosecution in the U.S. for unfair trade practices.

It is our belief that elimination of the import provision in the existing Flammable Fabrics Act would be justified only if evidence establishes that in a specific number of cases the existing provisions have failed significantly.

Certainly, even if any amendment were made to the existing import section, it would be potentially disastrous to authorize prohibition of all subsequent imports by an American business firm which imports one flammable item. The same objection holds true concerning the posting of a bond, the amount of which would accomplish the same result, i.e., prohibition of subsequent imports. The American firm is indeed subject to specific penalties for violation in the form of prosecution for unfair trade practices. Thus, if the American importer were made to bear the penalties in place of the foreign exporter, *an approach which we consider unjustified*, we believe the import provisions should *limit any prohibitions on imports by American firms to subsequent imports of that particular product from that foreign resource* which fails to conform to the standard. At least this approach would not be so excessively broad as to authorize wholesale prohibitions of all imports (or prohibitive bonds) by an American importer who may have inadvertently imported a particular flammable article.

Fifth, we believe that the retailer, should be exempt from the requirements for keeping records of the acquisition, disposition, and intended end use of products. Section 4(a) amending Section 5(c) would impose an impossible burden on retailers. The requirements for additional extensive records of the nature of every transaction, every acquisition and disposition, and the intended end use of all articles involved—both for items covered by the Act and those *not* covered—would be impossible to administer and extremely burdensome and costly in terms of clerical and bookkeeping outlay: The result: substantially added costs to the wholesaler, to the retailer, and unavoidably, the American consumer. It would appear to us that the guaranty provisions as set forth in Section 7 of the amendments could serve both for checks by enforcement agencies and as reasonable record-keeping bases to assure that articles covered by the Act have been tested and found to be in conformance with standards.

Thus we request that additional record-keeping requirements not be placed on the retailer, but be met through suitable research activity by those agencies entrusted with such responsibilities under the Act.

Please be assured that the ARF will give the Committee its cooperation and assistance whenever needed.

Cordially,

EUGENE A. KEENEY,
Executive Vice President.

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION,
New York, N.Y., April 26, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House Office Building, Washington, D.C.

DEAR MR. STAGGERS: We welcome the opportunity to comment on H.J. Res. 357 and companion bills to establish a National Commission on Product Safety.

The National Electrical Manufacturers Association (NEMA) America's largest trade association for manufacturers of electrical products has had a major concern with safety since its organization in 1926. NEMA believes that the widest use of electric service consistent with reasonable safety results in the greatest benefit to the public. As a result, a major part of NEMA's activity is the development and distribution of its product standards, now numbering 236, covering such characteristics as safety, construction and performance. An example of such activity is the NEMA Safety Standard for Configurations for Plugs and Receptacles, which is widely recognized as protecting the public by preventing mismatching of these commonly used accessories and providing means for safety grounding where necessary.

NEMA recognizes that in addition to its own efforts, the electrical industry has been aided, almost since its inception, in the promotion of safety by public-

spirited, non-profit private organizations specifically dedicated to safety, including principally the National Fire Protection Association as sponsors of the National Electrical Code, which is widely adopted by state and municipal governments, and Underwriters' Laboratories, Inc. who investigate common types of electrical products for safety and list those found acceptable. NEMA supports the objectives of such organizations and, where appropriate, provides committee members to assist in the development of standards up-to-date with the current state of the art.

We believe that NEMA's experience and an awareness of present activities to assure electrical safety will be of benefit to the proposed Commission and to that end offer our assistance in the establishment and work of the Commission.

We note with favor the provision of the resolution that the Commission shall be of persons specially qualified by virtue of their education, training, or experience, since we believe that the effectiveness of the investigation will be dependent on the competence of the Commission. Therefore, we urge that the membership of the Commission be well balanced and that it include an expert in the develeopment of safety standards and an individual with broad experience in the electrical manufacturing industry.

Very truly yours,

JOSEPH F. MILLER,
Executive Vice President.

ASSOCIATION ON JAPANESE TEXTILE IMPORTS, INC.,
Washington, D.C., April 24, 1967.

Hon. JOHN E. MOSS,
Chairman, Subcommittee on Commerce and Finance, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: As your subcommittee considers legislation to amend the Flammable Fabrics Act, on behalf of the Association on Japanese Textile Imports, Inc., a New York trade association whose members are responsible for about 75% of the textile imports from Japan, may we respectfully urge that favorable attention be given to the following principles:

1. In the application and operation of the new amendments, no distinction or discrimination should be made between United States manufactured products and imported merchandise. Whatever new law is enacted, and whatever new rules and regulations are promulgated, including inspection and testing, should be the same and identical for both articles manufactured in this country and goods imported from abroad, for the hazards of fire apply equally to domestic and foreign textiles and household wares and the citizens is entitled to protection from both. International trade and commerce should not be restricted or restrained in the name of fire safety, or any other illegitimate non-tariff barrier.

2. In the implementation and drafting of new criteria, standards, and guidelines to enforce the new amendments, unreasonable, unrealistic, and expensive curbs should not be imposed on the manufacturers, both domestic and foreign. Meaningful requirements are understandable and welcome, but arbitrary and unnecessary burdens should not be forced on the manufacturer, thereby increasing production costs and difficulties immeasurably.

3. In establishing advisory committees or consultant services, to provide effective and practical guidance to those charged with the responsibility of enforcing the new amendments, a representative of the importer interests too should be included. Along with representatives of Government, consumers, and domestic manufacturers, an importer representative may be able to suggest helpful ways to improve fire safety that may be used in other countries.

We believe that these three principles are deserving of the Subcommittee's consideration, for they are minimal in assuring equity and equality between American-made and foreign-made textiles and household goods.

We would appreciate it if this letter is included as part of the hearings on Flammable Fabrics Legislation.

Sincerely,

MIKE M. MASAOKA,
Washington Representative.

AMERICAN HOME ECONOMICS ASSOCIATION,
Washington, D.C., August 3, 1967.

Hon. JOHN E. MOSS,
House of Representatives,
Washington, D.C.

MY DEAR MR. MOSS: We are pleased to send you a copy of a resolution passed by the assembly of delegates on June 28, 1967 at the 58th annual meeting of the American Home Economics Association in Dallas.

The resolution expresses the concern of the American Home Economics Association for family safety, calls attention to the work of our members in the development of standards for flammable fabrics, and encourages federal agencies in the establishment of such standards.

We welcome your comments.

Sincerely yours,

HELEN J. MANDIGO, *President.*

RESOLUTION RELATED TO LEGISLATION ON FLAMMABLE FABRICS

Whereas, the American Home Economics Association is cognizant of pending federal legislation on flammable fabrics for use in wearing apparel and home furnishings, and

Whereas, the safety of family members is a continuing concern of home economists, and

Whereas, representatives of the American Home Economics Association who are specialists in textiles, working in business, industry, and related organizations, are contributing to the development of standards for flammable fabrics; therefore, be it

Resolved, That the American Home Economics Association continue to offer specialized assistance to those legislative committees concerned with the pending legislation on flammable fabrics; and be it further

Resolved, That the Association encourage the federal agencies concerned to make every effort to establish standards on flammable fabrics for the safety of individuals and homes.

[Telegram]

SAN ANGELO, TEX., *May 8, 1967.*

Hon. HARLEY STAGGERS,
Interstate and Foreign Commerce Committee,
House of Representatives, Washington, D.C.:

The Texas Sheep and Goat Raisers' Association representing 6,000 member growers strongly support legislation to strengthen the Flammability Act and add to safety protection against danger of flammable items.

We particularly call attention to the need for standards which would identify the more flammable and dangerous fabrics contrasted with those less flammable natural fibers, particularly wool and mohair.

We will appreciate this telegram being included in the record of your meeting.

HOWARD DERRICK,
President, Texas Sheep and Goat Raisers' Association.

(Whereupon, at 3:40 p.m., the subcommittee adjourned.)

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