

### The Petitioner's Conclusion

The petitioner maintains that its proposed amendment of appendix K to 10 CFR part 50 would modernize the regulation by endorsing a contemporary consensus standard that incorporates results from recent data measurements and summation calculations.

The petitioner further argues that the proposed amendment is consistent with NRC's Strategic Performance Goals. The NRC's strategic performance goals are: (1) To maintain safety, protection of the environment, and the common defense and security; (2) to increase public confidence; (3) to make NRC activities and decisions more effective, efficient, and realistic; and (4) to reduce unnecessary regulatory burden on stakeholders.

The petitioner claims that its amendment would enhance nuclear safety by basing decay heat curves and uncertainties on up-to-date data measurements for specific fuel isotopes, allowing more accurate decisions involving relative risk. According to the petitioner, the amendment would also increase public confidence because the bases and data relied upon in the latest ANS consensus standard are technically accurate and reproducible. The petitioner maintains that adopting its proposal would provide the NRC with sound and realistic technical bases for make accurate decisions about decay heat power. Better decision-making, says the petitioner, would allow the NRC staff to more effectively allocate resources to other safety significant issues. Finally, the petitioner claims that its proposed amendment would reduce unnecessary technical burden on licensees, allowing them, in turn, to expend their resources on other issues.

The petitioner states that, because the amendment would merely codify the latest consensus standard on decay heat, a direct final rule would be the most appropriate and cost-effective means of implementation.

Dated at Rockville, Maryland, this 4th day of October, 2001.

For the Nuclear Regulatory Commission.

**Annette L. Vietti-Cook,**

*Secretary of the Commission.*

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### CONSUMER PRODUCT SAFETY COMMISSION

#### 16 CFR Part 1633

#### Standard To Address Open Flame Ignition of Mattresses/Bedding; Advance Notice of Proposed Rulemaking

**AGENCY:** Consumer Product Safety Commission.

**ACTION:** Advance Notice of Proposed Rulemaking (ANPR).

**SUMMARY:** The Commission is considering issuing a flammability standard that would address open flame ignition of mattresses/bedding. The Commission currently has a flammability standard that addresses ignition of mattresses by cigarettes. However, mattress/bedding fires ignited by small open flames are a significant problem not addressed by the existing standard. In 1995, the Commission staff began a project on mattress fires, and the information obtained from that research is reflected in the ANPR. This ANPR also addresses two subsequently-filed petitions from the Children's Coalition for Fire-Safe Mattresses ("CCFSM") requesting that the Commission issue an open flame standard similar to the full-scale test set forth in California Technical Bulletin 129 or an open flame standard similar to the component test set forth in British Standard 5852. The Commission invites comments concerning the risk of injury identified in this notice, the regulatory alternatives being considered, and other possible alternatives. The Commission also invites submission of any existing standard or statement of intention to modify or develop a voluntary standard to address the flammability risk of mattress/bedding fires ignited by small open flames.

**DATES:** Comments and submissions must be received by December 10, 2001.

**ADDRESSES:** Comments should be mailed, preferably in five copies, to the Office of the Secretary, Consumer Product Safety Commission, Washington, DC 20207-0001, or delivered to the Office of the Secretary, Consumer Product Safety Commission, Room 502, 4330 East-West Highway, Bethesda, Maryland; telephone (301) 504-0800. Comments also may be filed by telefacsimile to (301)504-0127 or by email to cpsc-os@cpsc.gov. Comments should be captioned "Mattress ANPR."

**FOR FURTHER INFORMATION CONTACT:** Margaret Neily, Directorate for Engineering Sciences, Consumer Product Safety Commission,

Washington, DC 20207; telephone (301) 504-0508, extension 1293.

#### SUPPLEMENTARY INFORMATION

##### A. Background

The Commission currently has a flammability standard for mattresses that addresses ignition by cigarettes. 16 CFR part 1632. Smoldering ignition of mattresses/bedding (usually caused by cigarettes) has declined since the standard took effect in 1973. However, the open flame ignition of mattresses/bedding continues to cause a significant number of deaths and injuries, especially to children. The most common open flame sources are lighters, candles and matches. The Commission staff has been evaluating data concerning such fires for several years to determine how best to address open flame ignition of mattresses/bedding.

In 1995, CPSC conducted a field investigation study to learn more about cigarette-ignited fires and open flame fires. The report, issued in 1997, showed that about 70% of the open flame fires involved child play and that 68% of the open flame deaths were to children playing with lighters, matches, or other open flame sources. The mattress was ignited directly by open flame in about 24% of the cases. However, bedding was the first item to ignite in about 60% of the cases. In the latter scenario, the fire had already developed to a considerable size before the mattress became involved. A similar study conducted by the National Association of State Fire Marshals ("NASFM") in 1997 confirmed these findings.

A CPSC Chairman's Roundtable, conducted in February 1998, was intended to develop approaches to address these fires and fire deaths. The Roundtable concluded that technical studies were needed and that a public education effort should be considered. The industry's Sleep Products Safety Council ("SPSC"), an affiliate of the International Sleep Products Association ("ISPA"), sponsored a research program at the National Institute of Standards and Technology ("NIST") to provide the technological basis for future performance requirements that could be included in a standard for mattresses and/or bedclothes. The mattress industry also began developing an expanded public education program in cooperation with other interested organizations.

On March 28, 2000, Whitney Davis, director of the Children's Coalition for Fire-Safe Mattresses ("CCFSM") submitted four petitions to the Commission concerning mattress

flammability. The petitions proposed four options: (1) An open flame standard similar to the full-scale test set forth in California Technical Bulletin 129; (2) an open flame standard similar to the component test set forth in British Standard 5852; (3) a warning label for mattresses warning of polyurethane foam fire hazards, and (4) a permanent, fire-proof mattress identification tag. The petitions are discussed in greater detail in section G.

The Commission is considering a flammability standard that would address mattress fires ignited by small open flames. To be effective the standard must reflect the actual use of mattresses. Mattresses generally are not used alone, but are covered by bedding or bedclothes, such as sheets, blankets and comforters. The presence of these materials significantly affects the character of the fire. In some incidents the small open flame may ignite the mattress directly. But it is more common that the smaller flame source initially ignites the bedding, and these materials serve as a larger ignition source for the mattress. Thus, an effective standard must consider the interplay between the mattress and the bedding.

#### B. The Product

According to the International Sleep Products Association ("ISPA"), 1999 sales of mattresses were an estimated \$2.8 billion. ISPA represents about 725 wholesalers, retailers, and manufacturers of conventional mattresses and foundations, accounting for over 80% of total U.S. sales of these products.

The expected useful life of mattresses is about 14 years. Based on estimates from ISPA and previous staff studies, the Commission's Product Population Model estimates about 240 million mattresses may have been in use in residential, commercial, and institutional applications at the end of 1999.

The top four producers operate about one-half of the 800 production facilities in the U.S. and account for over 50% of the total U.S. production of mattresses. The remainder of the production facilities are operated by smaller manufacturers that tend to be family-owned firms supplying mattresses and foundations to a regional market. While renovated mattresses account for as much as 25% of those in use in some parts of the country, the total extent of such renovated mattress use is unknown. Mattresses produced for institutional and commercial use are available to consumers by special order.

#### C. Risk of Injury

In 1998, mattress or bedding items were first to ignite in about 18,100 residential fires that resulted in 390 deaths, 2,160 injuries, and \$208.3 million in property damage. Over the five-year period from 1994 through 1998, children under age 15 represented over 75% of the deaths in fires ignited by candles, matches, and lighters, and incurred over one third of the injuries from these fires. The most common ignition sources for the incidents involving deaths of these children were candles, matches and lighters. Among victims 15 years of age and older, smoking materials were the most common ignition sources causing death. In 1998, smoking materials accounted for 5,300 fires, 230 deaths, 660 injuries, and \$61.3 million in property damage.

Since mattress fires often involve the ignition source of burning bedding, initially ignited by a smaller source, a standard incorporating an ignition source representing burning bedding could address deaths and injuries from fires caused by smoking materials, traditional small open flame sources, as well as other heat sources. Because few materials can resist such a large ignition source, the typical approach of preventing ignition of a mattress through a product performance standard is not reasonable. However, limiting the fire intensity and preventing flashover in mattress/bedding fires could result in a reduction in the number of casualties due to such fires. Flashover occurs when a fire becomes so intense that all exposed surfaces ignite nearly simultaneously, and quickly spreads through the structure. While victims intimate with the ignition may still be at risk due to their direct contact with the burning mattresses and bedclothes, preventing flashover may reduce the number of casualties to a portion of the other victims inside as well as those located outside the room of fire origin.

#### D. Statutory Provisions

Section 4 of the Flammable Fabrics Act ("FFA") authorizes the Commission to initiate proceedings for a flammability standard when it finds that such a standard is "needed to protect the public against unreasonable risk of the occurrence of fire leading to death or personal injury, or significant property damage." 15 U.S.C. 1193(a). That section also sets forth the process by which the Commission can issue a flammability standard. The Commission first must issue an advance notice of proposed rulemaking ("ANPR") which: (1) Identifies the fabric or product and the nature of the risk associated with the

fabric or product; (2) summarizes the regulatory alternatives under consideration; (3) provides information about existing relevant standards and reasons why the Commission does not preliminarily believe that these standards are adequate; (4) invites interested persons to submit comments concerning the identified risk of injury, regulatory alternatives being considered, and other possible alternatives; (5) invites submission of an existing standard or portion of a standard as a proposed regulation; and (6) invites submission of a statement of intention to modify or develop a voluntary standard to address the risk of injury. 15 U.S.C. 1193(g).

If, after reviewing comments and submissions responding to the ANPR, the Commission determines to continue the rulemaking proceeding, it will issue a notice of proposed rulemaking. This notice must contain the text of the proposed rule along with alternatives the Commission has considered and a preliminary regulatory analysis. 15 U.S.C. 1193(i). Before issuing a final rule, the Commission must prepare a final regulatory analysis, and it must make certain findings concerning any relevant voluntary standard, the relationship of costs and benefits of the rule, and the burden imposed by the regulation. *Id.* 1193(j). The Commission also must provide an opportunity for interested persons to make an oral presentation before the Commission issues a final rule. *Id.* 1193(d).

#### E. Existing Open Flame Standards

The staff has reviewed 13 existing tests or standards relevant to open flame hazards associated with mattresses/bedding. State and local government tests and standards include Technical Bulletin ("TB") 129, TB 121, and TB 117 from California, the Michigan Roll-up Test, and Boston Fire Department ("BFD") 1X-11 from Boston. The staff reviewed other standards from the American Society for Testing and Materials standards (ASTM E-1474 and ASTM E-1590), Underwriters Laboratories (UL 1895 and UL 2060), the National Fire Protection Association (NFPA 264A and NFPA 267) and the United Kingdom (British Standard ("BS") 6807 and BS 5852).

Several of these standards specify tests which are duplicates or modifications of each other. To simplify the discussion of these existing standards, tests are grouped in two broad categories: Full-scale fire tests of mattresses (sometimes including bedding items) and small-scale component tests of mattress materials.

Important aspects of the standards are briefly summarized below.

**Full-scale Tests:** A full-scale test is generally considered the most reliable in measuring product performance, especially when the product contains multiple materials in a complex construction such as a mattress or mattress/bedding combination. Nine of the tests reviewed are full-scale burn tests of mattresses that can produce large fires. There are only about twelve laboratories in the United States that have test facilities capable of safely conducting these tests and properly controlling emissions produced. These tests are costly, ranging from \$2,000–5,000 per test; and CPSC does not have this type of facility.

TB 129, TB 121, BFD IX–11, ASTM E–1590, NFPA 267, UL 1895, and UL 2060 use gas burners simulating a newspaper fire in a wastebasket, newsprint in a metal container, or burning bedding as the ignition source. The mattress is sometimes tested in combination with a foundation and bedding. Bedclothes are generally optional and unspecified (chosen by the tester). The ignition sources are applied to the side or underneath the mattress. The acceptance criteria, when specified, are intended to minimize the size/intensity of the fire and related hazards rather than prevent ignition. The standards limit the peak rate of heat release and/or total heat release, maximum temperature above the mattress, carbon monoxide concentration, and mass loss.

BS 6807, a voluntary British standard, provides multiple ignition source options for a full-scale test of a mattress or mattress/foundation combination. The top or underside of the mattress is exposed, depending on the specific ignition source. Ignition/non ignition is determined from the exposure to a cigarette, butane flame, wood crib, or bedclothes chosen by the tester.

The Michigan Roll-up Test was designed to test jail pads that had been rolled up and intentionally ignited by inmates. The pad or mattress is rolled and tied, stuffed with newsprint, leaned against a bed frame, and ignited. No test criteria are specified.

**Small-scale tests:** The staff reviewed four smaller scale standards, all of which are used for evaluating mattress components rather than the full mattress. One serious drawback of component tests is their inability to accurately predict the real life performance of the full product, a complex combination of mattress, foundation and bedclothes.

TB 117 is mandatory in California for polyurethane foam used in mattresses. The test requires the average flame

spread time of 5 inch specimens to be 10 seconds or more.

ASTM E–1474 and NFPA 264A measure the heat release rate of a small specimen of a mattress component material exposed to 35 kilowatts per square meter (kW/m<sup>2</sup>) from the burner of a Cone Calorimeter.

BS 5852 is a British standard, mandatory for mattress filling materials (typically foam) used in single-filling mattresses. A horizontal/vertical crevice of foam covered with a standard flame-resistant (FR) polyester fabric is exposed to an ignition source. Options include a cigarette, butane flames, and wood cribs of varying sizes with increasing thermal outputs. Maximum smoldering/flaming time and mass loss are specified.

Several of these standards, small and large scale, may ultimately offer the best choices for a test method, test conditions, magnitude and nature of the ignition source, technical rationale, acceptance criteria, and so forth. However, more data are necessary to determine the most appropriate test. As a group, these standards lack clear links to the specific hazard of ignition from burning bedding materials typical of residential fire incidents, which is especially important for establishing effective acceptance criteria. A better understanding of the fire scenario, the magnitude of the hazard to be addressed, the contribution of burning bedding, and the effectiveness of product changes is needed. With this information, preparation of a reasonable, effective performance standard to reduce deaths and injuries is possible; and mattress materials and constructions suitable for the residential mattress market can be developed.

#### **F. Technical Research and Test Development**

From the CPSC and ISPA/NASFM studies of mattress fire incidents and the roundtable discussions, it became clear that a better understanding of the problem, desired performance objectives, and technical means to meet the objectives were needed. As discussed above, existing standards and tests were inadequate and new technical research was needed to support and develop an effective test method and standard. In 1998, in consultation with CPSC staff, SPSC began sponsoring the necessary research at NIST to define and measure the hazard from open flame ignition of mattresses from burning bedding. The first phase of the research was completed in June 2000, and work on Phase 2 has begun and is scheduled for completion later in 2001. CPSC is sponsoring NIST to develop a complementary, smaller scale test

method to address practical issues of enforcement and product development. The small-scale test method development will continue into 2002. These programs are summarized below.

#### **1. Phase One**

The Flammability Assessment Methodology for Mattresses-Phase 1, involved four main objectives: (1) Initial evaluation of bedding products, (2) characterization of heat impact on a mattress, (3) design of gas burners, and (4) tests of mattresses/bedclothes with burners.

Because the bedclothes are most likely to be the item first ignited and serve as a magnifier for the original, small open flame source, NIST characterized the fire behavior of bedclothes typically used in residential settings. Tests of twelve combinations of bedclothes (sheets, pillows, comforters, and blankets) produced peak heat release rates that ranged from 50 kW to about 200 kW; all substantially higher than a match or lighter. Peak heat release rate is basically a measure of the intensity of the fire produced by these items.

NIST measured the heat impact imposed on the surface of a mattress by six bedding combinations covering a range of performance, from moderate to most intense ignition threat. Measurements of heat flux, duration and affected location were taken. Distinctly different burning conditions existed on the top and side of the mattress, the top being more severe.

NIST then designed two gas burners to consistently simulate the typical heat impact imposed on a mattress top and side by burning bedding products. This is necessary for providing controlled and reproducible test results. The heat flux of the top surface burner is 65 kW/m<sup>2</sup> with a duration time of either 45 seconds or 70 seconds. The heat flux of the side surface burner is 50 kW/m<sup>2</sup> with a duration time of either 25 seconds or 50 seconds. These measurements were used to establish appropriate burner intensities and exposure times when applied to the mattress.

The burners were tested on five different types of mattresses to ensure their ability to produce results that correlated with actual tests of burning bedding. One mattress represented current residential technology. The other four mattresses were constructed with different types of potentially fire resisting components, including barrier fabrics, modified fibers, and treated foams. Correlation was good except for one mattress construction that exhibited internal over-pressurization with the

ignited bedding. Internal over-pressurization occurs when a flammable gas mixture builds up within the mattress causing rupturing of the mattress seams and allowing fire to penetrate the interior. Mattresses with this behavior should be avoided or designed to resist rupturing during a fire.

The research conducted during Phase 1 provided extremely useful information regarding fires involving mattresses and the interaction with bedclothes. Burning bedclothes by themselves were shown to produce large fires, reaching heat release rates up to 200 kW. A 200 kW fire is a much larger fire than a match, candle or lighter ignition source but not large enough to create flashover conditions. Mattresses without bedclothes, however, were shown to produce fires large enough to cause room flashover, adding to the complexity of the hazard. The gas burners appear to successfully simulate most burning bedding conditions and show how mattress materials and construction techniques can improve mattress fire behavior.

## 2. Phase Two

Phase 2 of the NIST/SPSC research will determine the ability of small-scale mattresses to predict burning behavior of twin size and larger bedding systems. Phase 2 will also provide an analytical basis for estimating the performance characteristics of the mattress needed to address and reduce the hazard.

Most available fire test data relate to twin size mattresses. To understand the effects of mattress size, it will be necessary to obtain data on larger size mattresses. The research will evaluate the effects of scale from king size to a 2' x 2' mini-mattress, a size commonly used by manufacturers as a selling tool. If the heat release rate behavior or other measure (e.g. weight or mass loss) seen in smaller mattresses correlates with that of larger size mattresses, the feasibility of conducting safe, convenient mattress tests and producing fire safe products increases. Additional tests will evaluate how the lateral dimensions of mattresses affect fire intensity and how different size mattresses affect a specified room environment.

Several factors will be considered in order to estimate the peak rate of heat release from a mattress that would substantially reduce the fire hazard. These include: (1) The effect of bed size and room size on fire size, (2) the proximity of other furnishings around the bed fire and the ignition threat of surrounding objects, and (3) the location of persons with respect to the location

of fire origin. Three tiers of hazard for victims of mattress/bedding fires have been identified using National Fire Incident Reporting System (NFIRS) data: (1) Outside the room of origin, (2) within the room of origin but not in contact with mattress fire and, (3) direct contact with mattress fire. Through analysis of the various tests, NIST will explore the relationship between fire size and the number of fatalities and determine what reduction in bed fire intensity will significantly reduce fatalities based on the three hazard tiers.

Phase 2 has been expanded to include tests of bedclothes (quilts, comforters, pillows) constructed with a variety of flame-resistant filling and cover materials to assess the effect of material changes on the flammability behavior.

## 3. Small-scale Screening Test

To be conducted concurrently with Phase 2, CPSC (with funding support from the U.S. Fire Administration) has contracted with NIST to develop a bench scale screening test to be used as a surrogate for full-scale tests of mattresses exposed to burning bedding or equivalent gas burners. Although the most reliable measures of mattress performance are full-scale tests, they are expensive and require specialized facilities. A bench scale test could be used by CPSC for compliance screening and by manufacturers for screening designs/materials. A similar concept is used in the mattress standard (16 CFR part 1632) for substitution of tickings and materials used at the tape edge. Test specimens will be from actual production mattresses. Based on the performance of a variety of materials, designs, and constructions, the test will be designed to be more stringent than the full-scale test to avoid problems (such as approving a mattress construction that fails the full-scale test and must be recalled later).

## G. The Petitions

CCFSM's petitions (Petitions FP 00-1, FP 00-2, FP 00-3, and FP 00-4) proposed four options to address open flame ignition of mattresses: (1) An open flame standard similar to the full-scale test set forth in California Technical Bulletin 129; (2) an open flame standard similar to the component test set forth in British Standard 5852; (3) a label warning of polyurethane foam hazards and (4) a permanent, fire-proof mattress identification tag. The petitioner also requested that the Commission impose fines and take other actions to enforce the existing mattress flammability standard against renovated mattresses. This request was not docketed as a

petition because it concerned action that cannot be taken through rulemaking.

The petitioner noted that the existing mattress flammability standard addresses deaths and injuries associated with cigarette ignition of mattresses, not small open flame ignition. The petitioner observed that the greater amount of polyurethane foam used in today's mattresses provides increased fuel for mattress fires. He argued there is a significant need for a standard that would address open flame ignition of mattresses.

In one petition (FP 00-1) the petitioner requested that the Commission issue a standard based on a full-scale test like that in California TB 129, discussed above. In another petition (FP 00-2) the petitioner requested that the Commission issue a standard based on a component test like that in BS 5852, discussed above. The Commission has determined to grant both of these petitions requesting standards. The Commission also voted to deny the remaining two petitions. A label warning of the flammability of polyurethane foam may not accurately reflect the flammability of a finished mattress, particularly as it may actually be used with bedding. As for the requested fire-proof identification tag, although it might help identify a mattress after a fire, it would not affect a mattress's flammability performance.

The Commission will consider both full-scale and component tests in the course of rulemaking to determine the most effective standard to address mattress fires ignited by small open flames. As explained above, the Commission staff is involved in extensive research that is examining the characteristics of mattress/bedding fires and evaluating all relevant tests that could form the basis for a standard.

## H. Response to Comments on the Petitions

On June 12, 2000, the Commission published a request in the **Federal Register** for public comments on these petitions. 65 FR 36890. Nine comments were submitted by a fire safety expert and various industry associations. Most of these comments were on the general issue of open flame ignition of mattresses rather than the specific petition recommendations. The major issues raised by the comments and responses to them are discussed below.

### 1. General Comments

*Comment:* Some commenters were concerned that standard tests recommended by the petitions do not reflect real hazards typical of residential mattress fire scenarios. Some stated that

NIST's work examining mattresses and bedclothes is a preferable basis for a standard.

*CPSC Response:* Real-life residential bedding fires involve a complex system of materials, typically a mattress and foundation with a collection of bedclothes which may include any number of sheets, blankets, comforters, pillows, quilts and decorative items. The bedclothes add to the complexity of the hazard. Often, the mattress is essentially exposed to burning bedding, a much larger ignition source than the flame from a match, candle or lighter that may have been the original source of ignition. Two of the petitions request test methods to address the hazard of residential mattress fires (FP00-1 and FP00-2). The ability of the requested test methods to address real-life residential mattress fires is unclear at this time. An appropriate test method should effectively address the hazard as it exists in real-life fire scenarios, representing all materials present, the typical ignition source, and the point of ignition.

The current study being conducted by NIST is a scientifically based research program designed to address the open flame ignition of mattresses and bedclothes under conditions that closely resemble real-life residential fire scenarios. The study is focused on understanding the dynamics of fires involving mattresses and bedclothes assemblies and on developing appropriate and technologically practicable methodology that can effectively address the hazard.

*Comment:* Some commenters stated that any new regulation should not compromise cigarette resistance. Commenters stated that any new regulation should provide a standard with a simple test that can be widely used. It should have the attributes of a good standard.

*CPSC Response:* The Commission agrees that any new regulation regarding mattress flammability should be closely assessed for possible impacts on the benefits of the existing regulation. While full-scale mattress tests may provide the most definitive measures of mattress fire behavior, they are costly, dangerous, and cannot be widely conducted. A valid bench or small-scale test that is practical and cost effective is a necessary component of a performance standard when many tests are needed. A simple bench scale test would enable manufacturers to conduct some of their own testing, allowing them to proceed more easily with product and design innovation and address safety concerns regarding their facilities and employees. A bench scale test that uses products

obtained at retail would also be useful for regulatory and compliance purposes. The Commission agrees that any new standard would need to be representative of the real-life fire hazard, and the methodology should be reasonable, technologically practicable and based on sound comprehensive research.

#### 2. Petition FP 00-1 Suggesting California TB 129

*Comment:* One commenter noted that TB 129 provides a direct measure of the danger posed by the mattress tested and is excellent for assessing product performance. Another commenter, however, observed that the type of ignition source and point of ignition used in the test are not appropriate for residences. Two commenters noted that TB 129 tests are expensive and can only be conducted by a fire test laboratory with large-scale heat release measurement capabilities.

*CPSC Response:* TB 129 was developed to address hazards associated with ignition of mattresses in public institutions. It is not clear that TB 129 provides a test method that is a true and direct measure of the danger posed by a typical residential mattress fire. The CPSC staff has concerns about the lack of bedclothes and mattress foundations in the test, the intensity of the specified ignition source, and the required side ignition point. It is also true that full-scale open flame mattress tests, like TB 129, require specialized fire test facilities and are dangerous and costly to conduct.

#### 3. Petition FP 00-2 Suggesting BS 5852

*Comment:* One commenter stated that British Standard 5852 has been effective in significantly reducing deaths and injuries from upholstery fires.

*CPSC Response:* Limited data are available for assessing the effectiveness of BS 5852 in reducing deaths and injuries, particularly for assessing losses from mattress fires. The UK Department of Trade and Technology's report evaluating benefits of the 1988 regulations states that the data on mattresses is less clear than the data for upholstered furniture. Mattress regulations require the filling materials to meet the regulations for polyurethane foams, but do not specify fire resistant requirements for mattress fabric coverings or tickings. Moreover, the report did not consider variables such as a decrease in smoking, increase in consumer awareness, increased use of smoke alarms, and increase in use of FR products.

*Comment:* One commenter reported on full-scale tests of UK mattresses

which, mostly ignited by a match, show reduced fire intensity. It is not necessary to ensure resistance to burning bedding because the British experience using complying foams has been good and complying foams do not cause big fires with larger ignition sources.

*CPSC response:* Full-scale tests of British mattresses composed of treated foam components may exhibit a resistance to small open flames, such as matches, lighters and candles when compared to mattresses composed of untreated foam. Recent tests, however, show that British mattresses are clearly inadequate when presented with the intense flames and higher heat fluxes typically caused by burning bedding. Several full-scale tests of British mattresses were included in the mattress flammability study conducted at the NIST. While the British mattresses may take several minutes to reach their peak rate of heat release, the peak rate of heat release observed for the mattresses alone (without bed clothing) was significantly above the level necessary to cause flashover. Testing of mattresses complying with British regulations with bed clothing resulted in an even higher peak rate of heat release, clearly showing that bedding continues to be a major contributor to the fire hazard causing serious flaming of the foam.

*Comment:* Commenters indicated that BS 5852 is easy to run and relatively inexpensive. However, it is a composite test, does not assess heat release and does not account for bed clothing in the residential fire scenario.

*CPSC response:* The Commission agrees that BS 5852 is a relatively inexpensive and easy to run test method, but at the same time, is concerned that the test does not measure heat release rates or account for the more severe ignition source from burning bedding.

*Comment:* One commenter suggested that a simple test, like BS 5852, that can be used very widely is the most appropriate for a national regulation.

*CPSC Response:* The Commission agrees that an easy-to-run test is appropriate. It is unclear, however, if the most appropriate test is BS 5852.

#### 4. Petition FP 00-3, Mattress Combustability Warning Labels

*Comment:* One commenter noted that Sleep Product Safety Council product labels have been used on finished mattresses since 1989. The commenter stated that the petition suggests a label that is extreme and does not represent the performance of the finished product in a real life fire situation.

*CPSC Response:* The Commission agrees that the label recommended by the petition does not represent the hazard presented by the finished product in a real life fire situation. Polyurethane foam is just one of many components used to construct a mattress. Since it is unclear what relation the fire behavior of an individual component has to the likely fire performance of a completed product, the Commission agrees that the suggested warning is not appropriate for the final mattress product.

#### 5. Petition FP 00-4, Fire-proof Mattress Identification Tags

*Comment:* One commenter argues that an ID tag would have no impact on the propensity of a mattress to ignite or the intensity of the resulting fire.

*CPSC response:* Petition FP 00-4 requests that all mattresses have an identification tag designed to survive a fire permanently attached to the innerspring unit. The Commission agrees that such a tag is unlikely to have any impact on reducing mattress fires or the propensity of a mattress to ignite when exposed to an open flame. Such a tag is not visible to consumers to influence their behavior, and the tag has no influence on the mattress's ability to resist ignition or its performance once ignited. An ID tag could be desirable for identifying mattresses involved in fires to improve the utility of collected fire data and support further regulatory actions. However, the tag cannot be justified in terms of directly reducing death or injury from fires.

#### I. Invitations to Comment

In accordance with section 4(g) of the FFA, the Commission invites comments on this notice. Specifically, the Commission invites the following types of comments.

1. Comments concerning the risk of injury identified in this notice, the regulatory alternatives discussed above, and other alternatives to address the risk of injury;

2. An existing standard or portion of a standard as a proposed rule;

3. A statement of intention to modify or develop a voluntary standard to address the risk of injury identified in the notice along with a description of a plan to modify or develop the standard.

In addition, the Commission is interested in obtaining further information about the following issues.

1. Materials that could improve mattress performance in open flame tests.

2. Any adverse consequences that an open flame standard might have on cigarette ignition of mattresses/bedding.

3. The appropriate scope of the standard, that is, particular items that should be included or excluded.

Dated: October 4, 2001.

**Todd Stevenson,**

*Consumer Product Safety Commission.*

#### List of Relevant Documents

1. Briefing memorandum from Margaret Neily, Project Manager, Directorate for Engineering Sciences, to the Commission, "Options to Address Open Flame Ignition of Mattress/Bedding and Petitions from the Children's Coalition for Fire Safe Mattresses," August 16, 2001.

2. Memorandum from Signe Hiser, EPHA, to Margaret Neily, Engineering Sciences, Residential Fires in Mattresses and Bedding 1980 "1998," June 11, 2001.

3. Memorandum from Terrance R. Karels, EC, to Margaret L. Neily, ES, "Mattress Petitions," June 15, 2001.

4. Memorandum from Allyson Tenney, ES, to Margaret Neily, Project Manager, "Current Research Program to Evaluate Open flame Mattress Flammability," April 25, 2001.

5. Memorandum from Allyson Tenney, ES, to Margaret Neily, Project Manager, "Response to Comments Received on Petitions FP 00-1 through FP 00-4, Requesting Standards, Labeling and Identification Tags for Mattresses," April 25, 2001.

6. Memorandum from Carolyn Meiers, ESHF, to Margaret Neily, Project Manager, "Petition to Provide Rulemaking Regarding Mattress Combustibility Warning Labels," March 16, 2001.

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#### DEPARTMENT OF THE INTERIOR

#### Office of Surface Mining Reclamation and Enforcement

#### 30 CFR Part 950

[WY-029-FOR]

#### Wyoming Regulatory Program

**AGENCY:** Office of Surface Mining Reclamation and Enforcement, Interior.

**ACTION:** Proposed rule; public comment period and opportunity for public hearing on proposed amendment.

**SUMMARY:** The Office of Surface Mining Reclamation and Enforcement (OSM) is announcing receipt of a proposed amendment to the Wyoming regulatory program (hereinafter, the "Wyoming program") under the Surface Mining Control and Reclamation Act of 1977 (SMCRA). Wyoming proposes revisions to rules about surface water hydrology, coal mine waste impoundments, alluvial valley floors, and Threatened and Endangered Plant Species. Wyoming intends to revise its program

to be consistent with the corresponding Federal regulations, and improve operational efficiency.

**DATES:** We will accept written comments on this amendment until 4:00 p.m., m.d.t. November 13, 2001. If requested, we will hold a public hearing on the amendment on November 8, 2001. We will accept requests to speak until 4:00 p.m., m.d.t. on October 26, 2001.

**ADDRESSES:** You should mail or hand deliver written comments and requests to speak at the hearing to Guy Padgett at the address listed below.

You may review copies of the Wyoming program, this amendment, a listing of any scheduled public hearings, and all written comments received in response to this document at the addresses listed below during normal business hours, Monday through Friday, excluding holidays. You may receive one free copy of the amendment by contacting OSM's Casper Field Office.

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**FOR FURTHER INFORMATION CONTACT:** Guy Padgett, Telephone: 307/261-6550. Internet: Gpadgett@OSMRE.GOV.

#### SUPPLEMENTARY INFORMATION:

- I. Background on the Wyoming Program.
- II. Description of the Proposed Amendment.
- III. Public Comment Procedures.
- IV. Procedural Determinations.

#### I. Background on the Wyoming Program

Section 503(a) of the Surface Mining and Reclamation Act (the Act) permits a State to assume primacy for the regulation of surface coal mining and reclamation operations on non-Federal and non-Indian lands within its borders by demonstrating that its program includes, among other things, "a State law which provides for the regulation of surface coal mining and reclamation operations in accordance with the requirements of the Act \* \* \*" and "rules and regulations issued by the Secretary" pursuant to the Act. 30 U.S.C. 1253(a)(1) and (7). On the basis of these criteria, the Secretary of the Interior conditionally approved the Wyoming program on November 26, 1980. You can find background information on the Wyoming program,