UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MD 20814

This document has been electronically approved and signed.

BALLOT VOTE SHEET

Date: September 7, 2011

TO : The Commission
Todd A. Stevenson, Secretary

THROUGH: Kenneth R. Hinson, Executive Director

FROM : Cheryl A. Falvey, General Counsel
Philip L. Chao, Assistant General Counsel, RAD
Patricia M. Pollitzer, Attorney

SUBJECT : Revision of Ignition Source Specification in the Standard for the Flammability of Mattresses and Mattress Pads, 16 C.F.R. part 1632

BALLOT VOTE DUE: September 13, 2011

Staff is forwarding to the Commission a briefing package, along with a draft final rule, to amend the Commission's flammability standard for mattresses and mattress pads, codified at 16 C.F.R. part 1632. This action would revise the ignition source provision at 16 C.F.R. § 1632.4(a)(2) to specify a standard reference material ("SRM") cigarette developed by the National Institute of Standards and Technology ("NIST").

Please indicate your vote by selecting one of the following options:

I. Approve publication in the *Federal Register* of the draft final rule revising the ignition source provision in the flammability standard for mattresses and mattress pads (16 C.F.R. part 1632), without changes.

_____ _____
Signature Date

II. Approve publication in the *Federal Register* of the draft final rule revising the ignition source provision in the flammability standard for mattresses and mattress pads (16 C.F.R. part 1632), with changes (please specify changes):

_____

_____

_____

_____ _____
Signature Date

III. Do not approve publication in the *Federal Register* of the draft final rule revising the ignition source provision in the flammability standard for mattresses and mattress pads (16 C.F.R. part 1632).

_____ _____
Signature Date

IV. Take other action (please specify):

_____

_____

_____

_____ _____
Signature Date

Staff Briefing Package

Final Amendment to 16 CFR Part 1632 *Standard for the Flammability of Mattresses and Mattress Pads*

September 7, 2011

For further information contact:

Patricia K. Adair, Project Manager
Directorate for Engineering Sciences
U.S. Consumer Product Safety Commission
(301) 987-2238

EXECUTIVE SUMMARY

On November 1, 2010, the U.S. Consumer Product Safety Commission (CPSC) proposed a technical amendment to the *Standard for Flammability of Mattresses and Mattress Pads*, codified at 16 CFR part 1632. This amendment would change the ignition source specification in the Standard to a Standard Reference Material (SRM) cigarette. CPSC staff recommends that the Commission issue the proposed amendment on a final basis, to become effective one year following the date of publication of a notice of final rulemaking in the *Federal Register*.

In January 2008, CPSC staff learned that the manufacturer of conventional (non-reduced ignition propensity, or "RIP") unfiltered Pall Mall cigarettes, the R.J. Reynolds Tobacco Company, planned to cease production of the non-RIP version of this cigarette in February 2008. Manufacturers and testing organizations soon expressed concerns to CPSC staff that the unavailability of the specified test cigarettes would hinder compliance testing of covered products. Development of a new ignition source to meet the Standard was needed.

To fill the need for a "standard" cigarette ignition source that would perform consistently, the CPSC entered into an interagency agreement (IAG) with the National Institute of Standards and Technology (NIST) to develop an SRM cigarette. The purpose of developing an SRM cigarette is to provide for continuity of compliance testing and enhance repeatability of test results without changing the level of fire safety provided by the Standard. The resulting SRM cigarette, designated SRM 1196, has the approximate ignition strength of the original unfiltered Pall Mall. CPSC staff recommends that an SRM cigarette have this ignition strength to provide for continuity of performance.

CPSC staff considers the SRM 1196 cigarette to be a reasonably equivalent ignition source for tests of smolder resistance, based on the testing and development program conducted by NIST. CPSC staff is now using SRM 1196 in testing mattresses for compliance with 16 CFR part 1632.

This technical amendment would not change the level of safety provided by the Standard and would not impose a significant cost burden on testing firms and manufacturers. Staff recommends that the Commission publish a final technical amendment to 16 CFR part 1632, *Standard for the Flammability of Mattresses and Mattress Pads*, to change the ignition source specification to SRM 1196.

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Memorandum

Date: September 7, 2011

TO : The Commission
Todd A. Stevenson, Secretary

THROUGH: Cheryl A. Falvey, General Counsel
Kenneth R. Hinson, Executive Director

FROM : DeWane Ray, Assistant Executive Director
Office of Hazard Identification and Reduction
Patricia K. Adair, Project Manager
Directorate for Engineering Sciences

SUBJECT : Final Technical Amendment to 16 CFR part 1632, *Standard for the Flammability of Mattresses and Mattress Pads*

I. INTRODUCTION

On November 1, 2010, the U.S. Consumer Product Safety Commission (CPSC) proposed a technical amendment to 16 Code of Federal Regulations (CFR) part 1632, *Standard for the Flammability of Mattresses and Mattress Pads*[1] (see **Tab A).** This memorandum provides a review of the public comments received in response to the notice of proposed rulemaking (NPR), and it recommends that the Commission issue the amendment on a final basis.

II. BACKGROUND

a. Standard for the Flammability of Mattresses and Mattress Pads

The *Standard for the Flammability of Mattresses and Mattress Pads* ("Standard") appears at 16 CFR part 1632. The Standard was issued by the U.S. Department of Commerce in 1972, under the authority of the Flammable Fabrics Act (FFA). When the CPSC was created, the responsibility for testing and amending the flammability standards under the FFA was transferred to the Commission.

The Standard sets forth a test to determine the ignition resistance of a mattress or mattress pad when exposed to a smoldering cigarette. Lighted cigarettes are placed at specified locations

[1] 75 *Federal Register* 67047, "16 CFR part 1632 *Standard for the Flammability of Mattresses and Mattress Pads*: Proposed Rule," November 1, 2010.

on a mattress (or mattress pad).[2] The ignition source cigarette is specified in the Standard by physical properties representing the ignition strength of an unfiltered Pall Mall cigarette, which was originally identified as the most severe smoldering ignition source.[3] The Standard establishes pass/fail criteria for the tests. The Standard also requires manufacturers to maintain records demonstrating compliance with the testing requirements.

b. Summary of test procedure

The test procedure for the Standard is summarized in section 1632.4-5. The test procedure requires that a number of lit cigarettes be placed on the test substrate in specific positions (with the number and positions of cigarettes determined by the test performed and the construction of the specimen). For mattresses[4] and mattress pads,[5] 18 cigarettes are placed on each specimen test surface. If a cigarette self-extinguishes during testing, it must be replaced with a cigarette in another location of the same type of construction feature. The test is completed when one of the following criteria is met: (1) 18 cigarettes have burned their full length; (2) 18 cigarettes have self-extinguished; or (3) a char length greater than two inches occurs in any test location.

The Standard, as written, clearly contemplates that smoldering ignition resistance be determined using cigarettes that have a high ignition propensity (*i.e.*, they would ordinarily burn their full length). The Standard does not state that self-extinguishing cigarettes constitute a "passing" result for a tested mattress surface; CPSC Compliance staff generally would consider such tests to be inconclusive in the absence of some technical determination that the mattress inhibited the burning of the cigarettes. Cigarettes with a lower ignition propensity are incompatible with the tests in the Standard because such cigarettes may be expected to self-extinguish independent of the smolder resistance of the mattress being tested.

c. 16 CFR part 1632 Ignition Source Specification

As specified in the Standard at section 1632.4(a)(2), the ignition source "shall be cigarettes without filter tips made from natural tobacco, 85±2 mm long, with a tobacco packing density of 0.270±0.02g/cm3 and a total weight of 1.1±0.1g." According to research conducted by the National Institute of Standards and Technology (NIST) in the 1970s on commercially available cigarettes, the purpose of the original specification was to replicate the most severe smoldering ignition source for testing mattresses and mattress pads under the Standard.[6]

d. CPSC-funded research at NIST

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[2] On March 15, 2006, the Office of Compliance and Field Operations issued an "Interim Enforcement Policy for Mattresses Subject to 16 CFR parts 1632 and 1633" to reduce testing from six mattress sleep surfaces to two mattress sleep surfaces for each new prototype created to comply with 16 CFR part 1633.

[3] Loftus, Joseph J., "Results of Temperature Measurements Made on Burning Cigarettes and Their Use as a Standard Ignition Source for Mattress Testing," NBS Memo Report, National Bureau of Standards, June 18, 1971: and Loftus, Joseph J., "Back-Up Report for the Proposed Standard for the Flammability (Cigarette Ignition Resistance) of Upholstered Furniture," PFF 6-76, NBSIR 78-1438, National Bureau of Standards, Gaithersburg, MD, June 1978.

[4] 16 CFR § 1632.4.

[5] *Id*. at 1632.5.

[6] Loftus, 1971. Op. cit.

In August 2008, the CPSC entered into an Interagency Agreement (IAG) with NIST to develop a new cigarette smoldering ignition source (SRM) that has the ignition strength of the test cigarette mandated for use in the Standard.[7] CPSC staff's objective in developing the SRM ignition source was to enable continued ignition resistance testing for 16 CFR part 1632 with a consistent ignition source without changing the level of fire safety provided by the Standard. The SRM cigarette was intended to be a "safety-neutral" ignition source and provide the CPSC and the regulated industry with a level of confidence that cigarettes purchased for testing over time will be identical in ignition strength.

There are no cigarette test data to characterize the ignition propensity of 1972 cigarettes when the Standard was promulgated. In the absence of such data, NIST sought to identify the highest ignition strength cigarette, consistent with the intent of the original Standard. NIST evaluated Pall Mall cigarettes of different vintages (1992 through 2008) to determine the ignition strength of the cigarettes that have been used to test soft furnishings. In June 2009, NIST provided CPSC staff with a report on their research, "NIST Technical Note 1627: Modification of ASTM E2187 for Measuring the Ignition Propensity of Conventional Cigarettes." The research described in this report was used to develop an SRM ignition source for 16 CFR part 1632.

NIST recommended to CPSC staff that the new SRM cigarette meet the following specifications:

- Nominal length: 83 mm± 2 mm;
- Tobacco packing density: 0.270 g/cm3 ± 0.02 g/cm3;
- Mass: 1.1g ± 0.1 g;
- Ignition strength: 70 percent full-length burn (PFLB) to 95 PFLB, using ASTM E 2187, as modified by Section 4.2 of NIST Technical Note 1627; and
- Non-Fire Safe Cigarette (FSC).

The length, tobacco packing density, and mass of SRM 1196 are nominally equivalent to the cigarette ignition source in the Standard. Ignition strength was not specified in the Standard. The ignition strength of SRM 1196 reflects the three oldest vintages of Pall Mall cigarettes tested by NIST. The earlier vintages reflect the intent of the Standard. Because so-called "fire safe cigarettes" did not exist in 1972, it was not necessary to specify a non-FSC in the original Standard.

In July 2009, the Commission posted NIST Technical Note 1627 on its website to keep stakeholders informed on the progress of this research. The Commission received three substantive comments, all from industry trade associations representing manufacturers, importers, and retailers affected by the smolder-resistance requirements of the existing and proposed rules. The commenters generally recommended that the CPSC consider using an SRM ignition source that approximates the ignition strength of either: (1) reduced ignition propensity (RIP) cigarettes that are coming into the U.S. market, or (2) the lowest-ignition strength, non-RIP

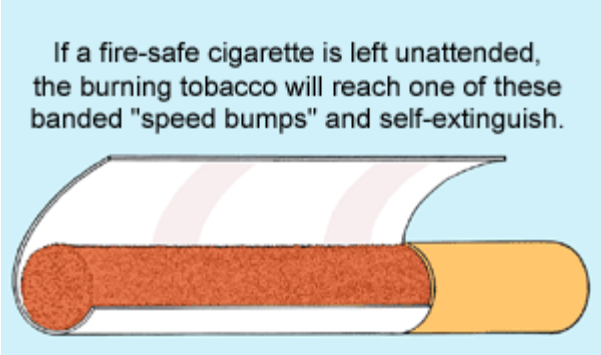
[7] CPSC-I-08-0015; August 14, 2008.

cigarettes in the U.S. market. Staff addressed comments on NIST Technical Note 1627 in the NPR Briefing Package.[8]

e. Reduced ignition propensity cigarettes

Since 2004, states have been implementing regulations to require cigarettes to be of "reduced ignition propensity" (RIP). A RIP cigarette (also referred to as "fire safe cigarette" or FSC) is designed to self-extinguish when left unattended. Currently, regulations are in effect in all 50 states and Canada. According to the National Fire Protection Association's (NFPA) "Coalition for Fire Safe Cigarettes" website:

> *A fire-safe cigarette has a reduced ignition propensity to burn when left unattended. The most common fire-safe technology used by cigarette manufacturers is to wrap cigarettes with two or three thin bands of less-porous paper that act as "speed bumps" to slow down a burning cigarette. If a fire-safe cigarette is left unattended, the burning tobacco will reach one of these speed bumps and self-extinguish.*[9]



An illustration of a "Fire-Safe Cigarette" showing the banded paper.
Coalition for Fire Safe Cigarettes, NFPA.[10]

Based on the description of the technology, CPSC staff believes that the portions of the tobacco column that are not covered by extra layers of filter paper are identical to the tobacco columns of non-RIP cigarettes; the only portion of the cigarette that is different from the conventional cigarette design is the part covered by the extra paper. Because state legislation does not specify the band widths, the portion of the tobacco length without banding may vary.

III. STAFF ANALYSIS OF COMMENTS RECEIVED ON THE PROPOSED RULE

On October 13, 2010, staff forwarded a briefing package to the Commission, recommending that the Commission issue a notice of proposed rulemaking (NPR) to amend the *Standard for the Flammability of Mattresses and Mattress Pads*, 16 CFR part 1632, to require a standard

[8] October 13, 2010. Staff Briefing Package. Draft Proposed Technical Amendment to 16 CFR part 1632, Standard for the Flammability of Mattresses and Mattress Pads.
[9] http://www.firesafecigarettes.org.
[10] http://www.firesafecigarettes.org/itemDetail.asp?categoryID=48&itemID=1190&URL=About%20fire-safe%20cigarettes/What%20is%20a%20fire-safe%20cigarette?

reference material (SRM) cigarette, which was developed by NIST. The Commission requested public comments on the proposed amendment to be submitted by January 18, 2011 (*see* Tab B).

In response to the request, the Commission received five comments, which can be found at www.regulations.gov, docket ID: CPSC-2010-0105. Two comments were from industry trade associations: The International Sleep Products Association (ISPA) (No. 1), and the National Textile Association (NTA) (No. 2). One comment was from a fire safety organization: the National Association of State Fire Marshals (NASFM) (No. 3). Two comments were received from individuals reporting no affiliations: No. 4 and No. 5.

a) Comments on the effectiveness of Reduced Ignition Propensity (RIP) cigarettes.

Comment: The CPSC did not properly consider the potential of RIP cigarettes in reducing cigarette-ignited fires (No. 1, No. 2).

Response: The CPSC is very interested in evaluating the potential of RIP cigarettes to reduce cigarette-ignited fires when mattresses and mattress pads are the first item ignited. In FY 2007, CPSC staff began work on the Cigarette Ignition Risk (CIR) project. The goal of the CIR project is to evaluate the change in the cigarette-ignited fire hazard presented by RIP cigarettes. This project was deferred in FY 2009 and FY 2010, due to resource constraints. Staff resumed the study in FY 2011. Results from the CIR study are expected to be publicly available in FY 2012.

While RIP cigarettes are designed to self-extinguish if left unattended, claims of actual reductions in cigarette-ignited fires have not been substantiated by empirical state or national data. CPSC staff has begun investigating the relative risk associated with RIP cigarettes but has no test data or epidemiological evidence demonstrating that RIP cigarettes have decreased significantly the incidence of smoldering ignitions of mattresses or mattress pads. Staff is not aware of any published, peer-reviewed studies on the effectiveness of RIP cigarettes that included testing of RIP and non-RIP cigarettes on commercially available mattresses, mattress pads, or mattress mock-ups. If the mattress industry has sufficient test data to support the hypothesis that RIP cigarettes self-extinguish consistently on 16 CFR part 1632- and part 1633-compliant mattresses, CPSC staff would welcome the opportunity to review that information.

All 50 states and Canada have adopted pass/fail criteria that will allow no more than 25 percent of 40 tested cigarettes to burn their full length when tested in accordance with ASTM E2187; this means that 10 out of every 40 tested RIP cigarettes are allowed to burn their full length (*i.e.*, not self-extinguish). While this does not mean that 25 percent of commercial RIP cigarettes would be expected to fail the test, it suggests that 100 percent compliance is unlikely. The "worst-case" RIP cigarette would be one that burns its full length like a non-RIP cigarette. Further, commercial RIP cigarettes could exhibit the same variability observed among non-RIP cigarettes, thereby reducing reliability of test results.

Comment: The NFPA report, "The Smoking Material Fire Problem,"[11] says RIP cigarettes have the potential to reduce deaths and injuries from cigarette-caused fires by 56 to 77 percent, compared to 2003 levels (No. 1).

Response: CPSC staff considers NFPA's estimate to be preliminary and will likely change when the 2010 data are available. NFPA produced this estimated range by comparing the NFIRS[12] smoking material fire deaths estimate from 2003 (the last full year before the first state implemented a RIP cigarette law), to the estimate for 2008 (which is the most recent year for which they have estimates). NFPA's estimate incorporates a factor to adjust for the fact that only an estimated 21 percent to 29 percent of the population was under an RIP cigarette law in 2008. This method adds uncertainty to the estimate. The NFPA's estimated range (56 percent to 77 percent) is not a confidence interval and it does not imply precision. Measuring the reduction in fire losses from 2003 to 2010 is more appropriate because in 2010, virtually 100 percent of the population was effectively covered by a law, and no mathematical projection would be necessary. Instead of relying on an imprecise estimate based on a year in which less than a third of the population was covered by the law, staff intends to consider the estimate from 2010 when it becomes available, to determine the estimated percent reduction.

b) Comments on the use of SRM 1196.

Comment: The Commission should consider as the target for a "safety neutral" SRM cigarette the 2007–08 non-RIP Pall Mall, which in NIST testing exhibited a 30 percent to 50 percent full-length burn (PFLB). The CPSC is effectively increasing the stringency of the Standard by using an SRM cigarette with a 90 percent PFLB (No. 1, No. 2).

Response: The use of SRM 1196, which mimics the highest PFLB measured by NIST among commercial cigarettes (the 1992 Pall Mall), does not alter the intent of the Standard; rather, SRM usage ensures continuity of a reliably high PFLB, with low variability in the ignition source. This approach is consistent with the intent of the Standard.

The consistently high PFLB of SRM 1196 (70 percent to 90 percent PFLB) is key to successful completion of the test to determine compliance with the Standard. To test the smoldering ignition of mattresses and mattress pads under 16 CFR part 1632, cigarettes are expected to burn their entire length. If a cigarette self-extinguishes during testing, it must be replaced with a cigarette in another location of the same type of construction feature. Tests using lower PFLB cigarettes would yield misleading results that do not reflect the performance of the mattress being tested. Further, using an SRM cigarette with a lower PFLB, such as the 2007–08, non-RIP Pall Mall, to meet the testing requirements of 16 CFR part 1632, would require using more cigarettes to complete the test, to the extent that self-extinguishing cigarettes would need to be replaced during the test. In some cases it may be impossible to complete a test if the cigarettes self-extinguish consistently.

[11] Hall, J.R. The Smoking Material Fire Problem. National Fire Protection Association. Sept. 2010. http://www.nfpa.org

[12] National Fire Incident Reporting System (NFIRS).

Comment: The Commission should allow unfiltered RIP Pall Malls or other lower heat-producing commercial cigarettes on the market to be used to do 16 CFR part 1632 testing (No. 1, No. 4, No. 5).

Response: There is no requirement in the Standard that a commercial cigarette be used; however, cigarettes that burn their full length are needed to complete the test. In 1972, the unfiltered, 85 mm Pall Mall was identified as the most severe ignition source among commercial cigarettes. SRM cigarettes, which are designed to exhibit consistent burning behavior, did not exist at that time. NIST's research demonstrates that the PFLB performance of commercial cigarettes is subject to significant variability that can lead to inconsistent test results. The use of SRM 1196, which mimics the highest PFLB measured by NIST among commercial cigarettes (the 1992 Pall Mall), does not alter the intent of the Standard; rather, SRM usage ensures continuity of a reliable ignition source with a high enough PFLB to allow for completion of the test.

Comment: The CPSC had insufficient information to reject another existing SRM cigarette—NIST SRM 1082—as an ignition source in the Standard. The Commission should allow NIST SRM 1082 to be used in 16 CFR part 1632 instead of SRM 1196 (No. 1).

Response: The purpose of specifying an SRM cigarette, which has been certified by NIST to meet specifications, is to enhance repeatability of smoldering ignition test results without changing the level of fire safety provided by the Standard.

State laws requiring "fire safe" cigarettes stipulate that such cigarettes meet an established cigarette fire safety performance standard, based on ASTM E2187, *Standard Test Method for Measuring the Ignition Strength of Cigarettes*. NIST SRM 1082 has a 15 percent PFLB and is intended for use by test laboratories to assess and control their test setup to evaluate cigarette ignition propensity of RIP cigarettes in accordance with ASTM E2187.

A cigarette with a low PFLB like SRM 1082 would yield fewer successfully completed 1632 tests, resulting in the use of more cigarettes to complete the test to determine compliance with the Standard. In addition, it would not represent a severe cigarette ignition source, and as such, would not be consistent with the original Standard.

Comment: The CPSC should maintain the level of safety established by the original standard and specify SRM 1196; lowering the ignition strength would make the standard less effective (No. 3).

Response: CPSC staff agrees that it is appropriate to specify SRM 1196 as the new ignition source for 16 CFR part 1632. Incorporation of this SRM would be "safety-neutral" and would not affect the stringency of the Standard.

Comment: The CPSC should move ahead with development of surrogate smoldering ignition source that is not a cigarette (No. 3).

Response: SRM 1196 is a short-term solution to a longer term issue. Anticipating the need for a longer-term solution, CPSC has entered into a new Interagency Agreement with NIST to develop a surrogate ignition source.[13] This project began in FY 2010.

Comment: SRM 1196 is an inappropriate ignition source for upholstery fabrics (No. 2).

Response: This regulatory proceeding would amend 16 CFR part 1632, *Standard for the Flammability of Mattresses and Mattress Pads*. It does not apply to the Commission's upholstered furniture rulemaking.[14]

c) Comments on the cost of SRM 1196.

Comment: Specifying SRM 1196 as the new ignition source is not a modest change, and it may result in significant substantive changes to 16 CFR part 1632 that could impose major new costs on mattress manufacturers (No. 1, No. 5).

Response: The purpose of SRM 1196 is to enhance repeatability and reproducibility of test results, without changing the level of fire safety. Since the time of the Commission's proposal, NIST has reduced the price of SRM 1196 from $239 for one carton, to $239 for two cartons, which should help alleviate some of the cost concerns. The estimated annual cost of the technical amendment is approximately $24,000, or less than one-tenth of one cent per mattress production unit. This does not represent a significant new cost to manufacturers. A discussion of the costs and benefits is found in the Directorate for Economic Analysis Report: *Final Regulatory Analysis: Smoldering Ignition Source Draft Proposed Technical Amendment to the Flammability Standard for Mattresses and Mattress Pads (16 CFR Part 1632)* (see ***Tab B***).

d) Comments on the Flammable Fabrics Act, Regulatory Alternatives, and Other FFA Rulemakings.

Comment: The CPSC failed to meet requirements of the Flammable Fabrics Act (FFA) in proposing this amendment to 1632. Section 4 of the FFA requires the CPSC to base its decision to amend regulations on research and investigation (No. 1).

Response: The proposed amendment is based on research and investigation conducted by NIST. In August 2008, the CPSC entered into an IAG with NIST to develop a new cigarette smoldering ignition source. In June 2009, NIST provided CPSC staff with a report on its research, "*NIST Technical Note 1627: Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes.*"[15] The research described in this report was used to help develop SRM 1196. In July 2009, the Commission posted NIST Technical Note 1627 on its website to keep stakeholders informed of the progress of this research and invite comments. The comments

[13] http://www.cpsc.gov/LIBRARY/FOIA/FOIA10/contracts/CPSC-I-10-0019.pdf.
[14] 73 Federal Register 11702; March 4, 2008. http://www.cpsc.gov/businfo/frnotices/fr08/furnflamm.pdf.
[15] Gann, R.G., and Hnetkovsky E.J., *Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes*, Technical Note 1627, National Institute of Standards and Technology, Gaithersburg, MD, 20899, 2009.

received on NIST Technical Note 1627 were addressed in staff's October 13, 2010, NPR Briefing Package, and they were also discussed in the preamble to the NPR.

Comment: The CPSC failed to consider all regulatory alternatives and other standards relevant to amending 16 CFR part 1632. Specifically, the CPSC did not consider the extent to which its own 16 CFR part 1633 renders part 1632 redundant, despite the fact that the CPSC has issued an Advance Notice of Proposed Rulemaking (ANPR) to consider whether to revoke 1632 for this reason (No. 1).

Response: The Commission has a separate proceeding to consider whether to revoke 16 CFR part 1632. The purpose of the proceeding at issue is a narrow one: to amend the provision in 16 CFR part 1632 specifying the ignition source for the flammability test required in the Standard. Issues related to the need for 16 CFR part 1632, in light of the existence of 16 CFR part 1633, are appropriate for that proceeding, not the one at issue here.

The Standard requiring mattresses to be resistant to cigarette ignition, 16 CFR part 1632, took effect in 1973. Although smoldering ignition of mattresses (*i.e.*, ignition from cigarettes) has declined since that time, mattress fires ignited by small open flames (such as lighters and candles) have continued to cause a significant number of deaths and injuries. In 2006, the Commission published a flammability standard directed at the hazard of open-flame ignition of mattresses, 16 CFR part 1633, which took effect on July 1, 2007. In the course of the rulemaking to develop 16 CFR part 1633, industry questioned whether there would be overlap between the two mattress flammability standards, making continuation of 16 CFR part 1632 unnecessary. To examine the issue of possible overlap between the two standards, the Commission published an ANPR for the possible revocation or amendment of 16 CFR part 1632, *Standard for the Flammability of Mattresses and Mattress Pads* in June 2005, and invited public comments.[16] Some commenters supported revoking the standard, while others recommended careful review of the risks, incident data, and benefits of the standard before revocation is considered.

On October 20, 2005, the Sleep Product Safety Council (SPSC)[17] met with CPSC staff to discuss issues associated with the possible revocation or amendment of the Standard. At that meeting, ISPA/SPSC told the CPSC of its plans to work with NIST on a research project to determine if 16 CFR part 1632 was needed once16 CFR part 1633 became effective. In addition, ISPA and SPSC discussed plans for a research project with NIST to develop a predictive, small-scale test for 1632.[18] In 2009, ISPA ended the research project at NIST, due to problems with controlling standard test materials; the research was not completed, and no data were provided to CPSC staff from this project. At this time, CPSC staff is not aware of data indicating that 16 CFR part 1633

[16] 70 *Federal Register* 36357; June 23, 2005. Advance Notice of Proposed Rulemaking; Possible Revocation or Amendment of Standard for the Flammability of Mattresses and Mattress Pads (Cigarette Ignition).

[17] The Sleep Products Safety Council is a safety division of the International Sleep Products Association (ISPA). www.safesleep.org.

[18] http://www.cpsc.gov/library/foia/meetings/mtg06/mtg06.html.

eliminates or sufficiently reduces the risk of injury from cigarette ignition of mattresses, such that the Commission could revoke 16 CFR part 1632.

Comment: The CPSC should halt this proceeding and act on industry's request to revoke 1632 (No. 1). The CPSC should issue an interim rule to suspend 1632 (No. 1).

Response: The question of revocation or revision of 16 CFR part 1632 in light of 16 CFR part 1633 is the subject of a different rulemaking proceeding. If the commenters have any data relevant to that issue, they should provide it in connection with that rulemaking. In the meantime, 16 CFR part 1633 continues to be in effect. The ignition source specified in the Standard is no longer available. The purpose of this proceeding is to amend the Standard to specify a comparable ignition source so that reliable and representative testing can continue under the current Standard.

Comment: The CPSC did not consider the potential impact of its outstanding ANPR regarding the flammability of bedclothes. (No. 1)

Response: On January 13, 2005, the Commission published an ANPR for a possible standard to address open-flame ignition of bedclothes. There is no proposed or final standard for the flammability of bedclothes. Therefore, there is no basis for the Commission to consider the impact of such a standard.

IV. FINAL REGULATORY ANALYSIS

The final regulatory analysis prepared by the Directorate for Economic Analysis (EC) (***see Tab B***) concludes that, if the Commission promulgated the technical amendment to the *Standard for the Flammability of Mattresses and Mattress Pads*, the amendment would not be expected to have any significant economic effects on manufacturers, testing laboratories, consumers, or other entities. Total estimated testing and certification costs are about $24,000 per year, which represents a cost of about one-third to one cent per mattress produced under those tests. There would be no likely impact on the price of mattresses to consumers.

V. CONCLUSION

Staff concludes that it is appropriate to amend the Standard to describe the ignition source in 16 CFR part 1632, as "NIST Standard Reference Material 1196." The purpose of specifying the SRM 1196 cigarette is to enhance repeatability and reproducibility of smoldering ignition test results and to allow industry to continue compliance testing without changing the level of fire safety provided by the Standard. CPSC staff is now using SRM 1196 in testing mattresses for compliance with 16 CFR part 1632. The amended specification would replace the current specification for the ignition source.

VI. OPTIONS

1. Publish a Final Rule amending the description of the ignition source, as recommended by staff.

2. Make no change to amend 16 CFR part 1632, *Standard for the Flammability of Mattresses and Mattress Pads,* and terminate the rulemaking.

VII. RECOMMENDATION

Staff recommends that the Commission publish a Final Rule in the *Federal Register* (see draft *Federal Register* notice at **Tab C**) to amend the ignition source specification at CFR § 1632.4(a)(2), removing the language: *"shall be cigarettes without filter tips made from natural tobacco, 85±2 mm long with a tobacco packing density of 0.270±0.02 g/cm^3 and a total weight of 1.1± 0.1gm,"* and replacing it with: *"NIST Standard Reference Material 1196, available for purchase from the National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, MD, 20899.*

In addition, staff believes that a 1-year effective date is appropriate to ensure sufficient time to allow for manufacturing and testing cycles and continuing availability of SRM 1196 from NIST. Therefore, staff recommends that the final amendment to the ignition source provision of the Standard become effective one year after publication of the final amendment in the *Federal Register*.

TAB A:

75 *Federal Register* 67047; November 1, 2010, Consumer Product Safety Commission, 16 CFR Part 1632, Standard for the Flammability of Mattresses and Mattress Pads; Proposed Rule

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A
B

A

80 Stat. 1304–05, 83 Stat. 187–89 (15 U.S.C. 1261, 1262); Pub. L. 107–319, 116 Stat. 2776.

2. Amend § 1512.2 by revising paragraphs (b) and (d) and adding paragraph (g) to read as follows:

§ 1512.2 Definitions.

* * * * *

(b) *Sidewalk bicycle* means a bicycle with a seat height of no more than 635 mm (25.0 in); the seat height is measured with the seat adjusted to its highest position. Recumbent bicycles are not included in this definition.

* * * * *

(d) *Track bicycle* means a bicycle designed and intended for sale as a competitive velodrome machine having single crank-to-wheel ratio, and no free-wheeling feature between the rear wheel and the crank.

* * * * *

(g) *Recumbent bicycle* means a bicycle in which the rider sits in a reclined position with the feet extended forward to the pedals.

3. Amend § 1512.4 by revising paragraphs (b) and (i) to read as follows:

§ 1512.4 Mechanical requirements.

* * * * *

(b) *Sharp edges.* There shall be no unfinished sheared metal edges or other sharp parts on assembled bicycles that are, or may be, exposed to hands or legs; sheared metal edges that are not rolled shall be finished so as to remove any feathering of edges, or any burrs or spurs caused during the shearing process.

* * * * *

(i) *Control cable ends.* Ends of all accessible control cables shall be provided with protective caps or otherwise treated to prevent unraveling. Protective caps shall be tested in accordance with the protective cap and end-mounted devices test, § 1512.18(c), and shall withstand a pull of 8.9 N (2.0 lbf).

* * * * *

4. Amend § 1512.6 by revising paragraphs (a) and (c) to read as follows:

§ 1512.6 Requirements for steering system.

(a) *Handlebar stem insertion mark.* Quill-type handlebar stems shall contain a permanent ring or mark which clearly indicates the minimum insertion depth of the handlebar stem into the fork assembly. The insertion mark shall not affect the structural integrity of the stem and shall not be less than 2½ times the stem diameter from the lowest point of the stem. The stem strength shall be maintained for at least a length of one shaft diameter below the mark.

* * * * *

(c) *Handlebar.* Handlebars shall allow comfortable and safe control of the bicycle. Handlebar ends shall be symmetrically located with respect to the longitudinal axis of the bicycle and no more than 406 mm (16 in) above the seat surface when the seat is in its lowest position and the handlebar ends are in their highest position. This requirement does not apply to recumbent bicycles.

* * * * *

5. Amend § 1512.12 by revising paragraph (b) to read as follows:

§ 1512.12 Requirements for wheel hubs.

* * * * *

(b) *Quick-release devices.* Lever-operated, quick-release devices shall be adjustable to allow setting the lever position for tightness. Quick-release levers shall be clearly visible to the rider and shall indicate whether the levers are in a locked or unlocked position. Quick-release clamp action shall emboss the frame or fork when locked, except on carbon fiber material.

* * * * *

6. Amend § 1512.15 by revising paragraphs (a) and (b) to read as follows:

§ 1512.15 Requirements for seat.

(a) *Seat limitations.* No part of the seat, seat supports, or accessories attached to the seat shall be more than 125 mm (5.0 in) above the top of the seat surface at the point where the seat surface is intersected by the seat post axis. This requirement does not apply to recumbent bicycles.

(b) *Seat post.* The seat post shall contain a permanent mark or ring that clearly indicates the minimum insertion depth (maximum seat-height adjustment); the mark shall not affect the structural integrity of the seat post. This mark shall be located no less than two seat-post diameters from the lowest point on the post shaft, and the post strength shall be maintained for at least a length of one shaft diameter below the mark. This requirement does not apply to bicycles with integrated seat masts.

* * * * *

7. Amend § 1512.18 by revising paragraphs (k)(1)(i) and (n)(2)(vii) as follows:

§ 1512.18 Tests and test procedures.

* * * * *

(k) * * *

(1) * * *

(i) *Procedure.* With the fork stem supported in a 76 mm (3.0 in) vee block and secured by the method illustrated in figure 1 of this part 1512, a load shall be applied at the axle attachment in a direction perpendicular to the centerline of the stem and against the direction of the rake. Load and deflection readings shall be recorded and plotted at the point of loading.

* * * * *

(n) * * *

(2) * * *

(vii) A recommended coordinate system for definition of color is the "Internationale de l'Eclairage (CIE 1931)" system. In the coordinate system and when illuminated by the source defined in table 4 of this part 1512, a reflector will be considered to be red if its color falls within the region bounded by the red spectrum locus and the lines $y = 0.980 - x$ and $y = 0.335$; a reflector will be considered to be amber if its color falls within the region bounded by the yellow spectrum locus and the lines $y = 0.382$, $y = 0.790 - 0.667x$, and $y = x - 0.120$.

* * * * *

Dated: October 26, 2010.

Todd A. Stevenson,

Secretary, Consumer Product Safety Commission.

[FR Doc. 2010–27503 Filed 10–29–10; 8:45 am]

BILLING CODE 6355–01–P

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1632

[CPSC Docket No. CPSC–2010–0105]

Standard for the Flammability of Mattresses and Mattress Pads

AGENCY: Consumer Product Safety Commission.

ACTION: Proposed rule.

SUMMARY: The Consumer Product Safety Commission ("CPSC" or "Commission") is proposing to amend its standard for the flammability of mattresses and mattress pads. The ignition source cigarette specified in the standard for use in the mattress standard's performance tests is no longer being produced. The Commission is proposing to amend the mattress standard to require a standard reference material cigarette, which was developed by the National Institute of Standards and Technology, as the ignition source for testing to the mattress standard.

DATES: Comments on the proposal should be submitted no later than January 18, 2011.

ADDRESSES: You may submit comments, identified by Docket No. CPSC–2010–0105, by any of the following methods:

Electronic Submissions

Submit electronic comments in the following way:

Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.

To ensure timely processing of comments, the Commission is no longer accepting comments submitted by electronic mail (e-mail) except through *http://www.regulations.gov.*

Written Submissions

Submit written submissions in the following way:

Mail/hand delivery/courier (for paper, disk, or CD–ROM submissions), preferably in five copies, to: Office of the Secretary, Consumer Product Safety Commission, Room 820, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504–7923.

Instructions: All submissions received must include the agency name and docket number for this rulemaking. All comments received may be posted without change, including any personal identifiers, contact information, or other personal information provided, to *http://www.regulations.gov.* Do not submit confidential business information, trade secret information, or other sensitive or protected information electronically. Such information should be submitted in writing.

Docket: For access to the docket to read background documents or comments received, go to *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Patricia K. Adair, Directorate for Engineering Sciences, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814–4408; telephone (301) 504–7536; *padair@cpsc.gov.*

SUPPLEMENTARY INFORMATION:

A. Background

1. The Current Standard and the Need for Amendment

The Standard for the Flammability of Mattresses and Mattress Pads ("the Standard"), 16 CFR part 1632, was initially issued by the U.S. Department of Commerce in 1972 under the authority of the Flammable Fabrics Act ("FFA"), 15 U.S.C. 1191 *et seq.* When the Consumer Product Safety Act ("CPSA") created the Consumer Product Safety Commission, it transferred to the Commission the authority to issue flammability standards under the FFA.

The Standard sets forth a test to determine the ignition resistance of a mattress or mattress pad when exposed to a lighted cigarette. Lighted cigarettes are placed at specified locations on the surface of a mattress (or mattress pad). The Standard establishes pass/fail criteria for the tests. The Standard currently specifies the ignition source for these tests by its physical properties. These properties were originally selected to represent an unfiltered Pall Mall cigarette, which was identified as the most severe smoldering ignition source.

In January 2008, CPSC staff learned that the R.J. Reynolds Tobacco Company planned to stop producing unfiltered Pall Mall cigarettes (although it would continue to make a reduced ignition propensity or "RIP" version). The CPSC staff, mattress manufacturers, and testing organizations were concerned about testing to the Standard if the specified ignition source cigarettes were unavailable. Under an Interagency Agreement ("IAG") with the CPSC, the National Institute of Standards and Technology ("NIST") developed a standard reference material ("SRM") cigarette that could be used as the ignition source in the Standard.

2. Incident Data

Recent fire loss estimates for mattresses and bedding indicate that smoking material ignitions of mattresses or bedding lead to a large number of fire deaths and injuries. The most recently available estimates are from 2005 through 2007. For that time period, there was an estimated annual average of 2,100 fires in which smoking materials ignited mattresses or bedding. These led to an estimated annual average of 150 deaths, 350 injuries, and $57 million in property loss.

B. Statutory Provisions

The FFA sets forth the process by which the Commission can issue or amend a flammability standard. In accordance with those provisions, the Commission is proposing to amend the Standard to specify the SRM cigarette developed by NIST as the ignition source to be used for testing under the Standard. As required by the FFA, the proposed rule contains the text of the amendment, alternatives that 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 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). In addition, the Commission must find that the standard: (1) Is needed to adequately protect the public against the risk of the occurrence of fire leading to death, injury, or significant property damage; (2) is reasonable, technologically practicable, and appropriate; (3) is limited to fabrics, related materials, or products which present unreasonable risks; and (4) is stated in objective terms. *Id.* 1193(b).

The Commission also must provide an opportunity for interested persons to make an oral presentation concerning the rulemaking before the Commission may issue a final rule. *Id.* 1193(d). The Commission requests that anyone who would like to make an oral presentation concerning this rulemaking please contact the Commission's Office of the Secretary (*see* the **ADDRESSES** section of this notice) within 45 days of publication of this notice. If the Commission receives requests to make oral comments, a date will be set for a public meeting for that purpose, and notice of the meeting will be provided in the **Federal Register.**

C. Description of the Proposed Amendment

1. NIST's Research

Currently, the Standard requires that the ignition source for testing mattresses "shall be cigarettes without filter tips made from natural tobacco, 85 ± 2 mm long with a tobacco packing density of 0.270 ± 0.02 g/cm³ and a total weight of 1.1 ± 0.1 g." 16 CFR 1632.4(a)(2). This specification was intended to describe a conventional unfiltered Pall Mall cigarette that was available when the Standard was developed. This specification was chosen in order to replicate the most severe smoldering ignition source for testing mattresses and mattress pads.

When the CPSC learned in January 2008 that R.J. Reynolds would be stopping production of the unfiltered Pall Mall cigarettes, the CPSC sought to find an alternate ignition source that would have the same burning characteristics as the ignition source specified in the Standard so that mattresses could be tested in accordance with the Standard and so that the safety level of the Standard would not be changed. In August 2008, the CPSC entered into an IAG with NIST to develop a new cigarette ignition source SRM that would have the ignition strength of the test cigarette required in the Standard.

There are no cigarette ignition test data to characterize the ignition propensity of cigarettes from 1972, when the Standard was promulgated. In the absence of such data, NIST sought to identify the highest ignition strength cigarette, consistent with the intent of the original Standard. NIST evaluated Pall Mall cigarettes of different vintages (1992 through 2008) to determine the ignition strengths of the cigarettes that had been used to test soft furnishings,

such as mattresses. Although SRM cigarettes are now becoming available, sufficient quantities of previous (1992 through 2003) cigarettes no longer exist to perform any comparative studies of ignition propensity. The NIST research strongly indicated, however, that the SRM is equivalent in ignition strength to the previous highest known strength unfiltered Pall Mall cigarette. After developing a standard procedure for determining the ignition strength of cigarettes and assessing different vintage cigarettes, NIST recommended to CPSC staff that the new SRM cigarette meet the following specification:

- Nominal length: 83 mm ± 2 mm
- Tobacco packing density: 0.270 g/cm3 ± 0.020g/cm3
- Mass: 1.1 g ± 0.1 g
- Ignition Strength: 70 Percent Full Length Burn (PFLB) to 95 PFLB using ASTM E 2187, as modified in Section 4.2 of NIST Technical Note 1627
- Non "Fire Safe Cigarette" (FSC)

The first three descriptors restate the physical requirements listed in the Standard for the ignition source. The recommended ignition strength range reflects the three oldest vintages of the Pall Mall cigarette tested by NIST and represents a worst-case ignition source.

In June 2009, NIST provided CPSC staff with a report on its research, "*NIST Technical Note 1627: Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes*" (Ref. 1). The CPSC used NIST's research described in this report as the basis to establish specific parameters for a new ignition source specified in the Standard. Therefore, the proposed rule would amend 16 CFR 1632.4(a)(2) to specify the use of an SRM cigarette, developed in 2010 based on NIST's research. The new SRM cigarette would be designated SRM 1196, and the proposed amendment also would state that SRM 1196 is available for purchase from the National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, MD, 20899

2. Issues Raised by Comments on NIST's Report

The Commission posted *NIST Technical Note 1627* on its Web site in July 2009. The Commission received three comments, all from industry trade associations. The principal issues raised by the comments that are relevant to this rulemaking and the Commission's responses are discussed below.

Comment: Some comments stated that the cigarette specified in the Standard does not reflect real-world conditions and argued that the CPSC should not try to replicate it in establishing a new ignition source.

Response: The intent of the Standard was not to represent the typical cigarette of that time, but to specify a cigarette with the highest potential to ignite soft furnishings in order to provide a high level of safety. The Commission intends to specify an ignition source that is close to the original specification, to maintain the level of safety established by the Standard.

Comment: Some comments noted that many States are requiring RIP cigarettes, and, because these will be widely in use, the ignition source in the Standard should be a RIP cigarette.

Response: The CPSC has no data indicating a correlation between the use of RIP cigarettes and reduction in fire losses where soft furnishings, such as mattresses, are the first item to ignite. The National Fire Protection Association's ("NFPA's") model State legislation calls for testing RIP cigarettes in accordance with ASTM standard E 2187–04, "*Standard Test Method for Measuring the Ignition Strength of Cigarettes*." This model legislation requires that no more than 25 percent of cigarettes tested in a trial test burn their full length. This means that even with full compliance, some RIP cigarettes may be expected to burn like non-RIP cigarettes. Moreover, only 8 of the 50 States that have enacted (or soon will enact) legislation mandating RIP cigarettes require auditing to confirm compliance with ASTM E 2187–04. Thus, the extent of fire safety gains due to RIP cigarettes is uncertain. Under these circumstances, specifying a RIP cigarette as the ignition source in the Standard could reduce the level of fire safety provided by the Standard.

Comment: One comment expressed concern about the cost of SRM cigarettes for small manufacturers, such as upholstery fabric manufacturers.

Response: As discussed in greater detail in the preliminary regulatory analysis summarized in section D of this preamble, the Commission does not anticipate that the cost of SRM cigarettes will add significantly to testing costs for mattresses. The CPSC estimates that using SRM cigarettes at up to $245 per carton would increase total annual testing costs for mattresses by about $70,000 or approximately 10 percent. The CPSC notes that, for mattresses, individual ticking fabrics generally are not tested; instead, testing of the assembled mattress is usually performed by a third party laboratory. Also, existing qualified designs and constructions of mattresses would not have to be retested.

As for the impact on upholstered furniture fabric makers, the cost of SRM cigarettes would be one aspect of testing costs that the Commission would consider in evaluating the costs and benefits of an upholstered furniture flammability standard in the context of that rulemaking. (In the **Federal Register** of March 4, 2008, the Commission published a proposed rule that would establish flammability standards for residential upholstered furniture under the FFA (73 FR 11702), and CPSC staff is in the process of testing and evaluation to support a possible final upholstered furniture flammability rule.)

Comment: One comment stated that a surrogate equivalent to the discontinued non-RIP cigarette is needed quickly, given that those materials are no longer being produced. The commenter opined that to specify a nonequivalent SRM as NIST recommends would require the CPSC to conduct a lengthy rulemaking procedure to amend 16 CFR part 1632.

Response: The new SRM cigarette is designed to be equivalent to the original test cigarette. In its report, NIST recommended a replacement cigarette that is as close as possible to the original test cigarette specified in the Standard. The purpose of developing the SRM cigarette is to enhance repeatability of test results without changing the level of fire safety provided by the Standard.

D. Preliminary Regulatory Analysis

Section 4(i) of the FFA requires that the Commission prepare a preliminary regulatory analysis when it proposes to issue or amend a flammability standard under the FFA and that the analysis be published with the proposed rule. 15 U.S.C. 1193(i). The following discussion extracted from the staff's memorandum entitled "Preliminary Regulatory Analysis: Smoldering Ignition Source Proposed Technical Amendment to the Flammability Standard for Mattresses and Mattress Pads (16 CFR Part 1632)" (Ref. 2) addresses this requirement.

1. Market/Industry Information

Domestic manufacturers of mattresses and related sleep products (for example, mattress pads, box springs, innerspring cushions, and air-flotation sleep systems) are classified under the 2002 North American Industry Classification System (NAICS) in sector code 337910, Mattress Manufacturing. This group includes firms classified under the 1997 Standard Industry Classification (SIC) category 2515. Available U.S. Economic Census data show an estimated total value of shipments for this category of about $5 billion in recent years. Domestic employment is estimated at about 20,000 workers. Industry estimates indicate that the number of mattresses (including unconventional

items such as futons, crib and juvenile mattresses, and sleep sofa inserts) shipped in the United States residential market is roughly 25 million units annually. About 5 to 10 percent of this total is comprised of imported products, including some imports marketed by the domestic manufacturers. The proportion of imports for mattress pads is higher.

An estimated 150 to 200 domestic firms produce new mattresses or mattress pads in manufacturing facilities in the United States. An unknown but potentially similar number of firms in the United States sell renovated mattresses, which may account for 2.5 to 5 million units, or between 10 and 20 percent of mattresses sold. Thus, there may be as many as approximately 400 manufacturing firms subject to 16 CFR part 1632. These firms comprise more than 600 production establishments. Larger manufacturers may offer dozens of models (not counting different size designations, *e.g.*, twin, full, queen, king) at any given time; new models may be introduced once or twice per year. Many smaller firms market only a few models and make few, if any, construction changes in a year.

2. The Mattress Standard

The mattress standard at 16 CFR part 1632 requires premarket, full-scale prototype testing for each new mattress design. Prototype testing also must be performed for each change in materials of an existing design that may affect cigarette ignition resistance. Under the Standard, a minimum of 18 cigarettes (*i.e.*, about one pack) are consumed per mattress surface. Under the CPSC's 2006 interim enforcement policy, two mattress surfaces must be tested (the Standard specifies that six surfaces must be tested; however, current reported practice is to test two surfaces). For two-sided, traditional mattresses, one mattress is consumed per prototype. With the market trend in recent years toward single-sided mattresses (*i.e.*, those designed not to be flipped), it is much more common that two mattresses are consumed per prototype. In either case, at least 36 cigarettes (*i.e.*, about two packs) are consumed per prototype.

No post-prototype, periodic testing is required under 16 CFR part 1632. However, the Standard allows the use of "subordinate" prototypes (*i.e.*, a mattress that differs from the prototype in certain acceptable ways and therefore does not need to be tested) based on a confirmatory test of a complying model, such that multiple producers can market that same complying product in different production facilities or under different brand names. This practice is common in the industry among licensees, and especially among smaller firms that manufacture models based on qualified prototypes developed and tested for certification of compliance with both 16 CFR part 1633 and part 1632 by larger firms or "prototype developers." Further, 16 CFR part 1632 allows substitutions of cover or "ticking" materials, based on a set of small scale classification tests in lieu of new prototypes for each ticking. In this test, 9 to 18 cigarettes (approximately one half to one full pack) are consumed. Equivalency of performance for a majority of new mattress models is demonstrated using this optional ticking substitution test.

Some manufacturers perform tests pursuant to 16 CFR part 1632 in their production facilities. Most, however, use third party testing laboratories since the advent of 16 CFR part 1633 in 2006.

3. Potential Benefits and Costs

The SRM cigarette described in the proposal would have approximately the same ignition strength characteristics as originally intended by the Standard. The use of SRM cigarettes would not alter the stringency of the flammability performance tests in the Standard, so the proposal would not amend the test method itself.

i. Potential Benefits

Because the proposed amendment is "safety-neutral," mattresses that passed or failed under the existing Standard would be expected to generate similar results when the NIST-developed SRM is used. The level of protection provided by the Standard would neither increase nor decrease as a result. Thus, there would be no impact on the level or value of fire safety benefits derived from the 16 CFR part 1632 Standard.

There would, however, be potential benefits associated with the proposed amendment that are not readily quantifiable. Currently, manufacturers and testing laboratories do not have access to continued supplies of test cigarettes other than RIP Pall Mall cigarettes. Existing inventories of conventional Pall Mall cigarettes have been depleted or exhausted. Many industry representatives have requested guidance on the issue of which cigarette to use in testing.

Even if continuing supplies of conventional test cigarettes were available, the variability in cigarette performance described in the NIST research may lead to an unacceptably low level of test outcome reproducibility. This is causing uncertainty among testing firms and manufacturers and importers certifying compliance with the Standard; these firms have expressed concern that tests conducted by the CPSC and by industry may not be comparable. This inconsistency could lead to unnecessary additional testing. The proposed amendment specifying an SRM cigarette would reduce inconsistency and uncertainty for industry, testing laboratories, and the CPSC.

ii. Potential Costs

Currently, manufacturers incur testing costs related to 16 CFR part 1632 whenever new mattress models are introduced that either: (1) Are of new construction, or (2) have new tickings that may influence cigarette ignition resistance. Larger manufacturers may introduce 20 or more new constructions or ticking substitutions each year. Smaller producers and renovators probably introduce fewer items or rely on prototype developers for multiple models. Assuming that qualified prototypes are developed for all new constructions and ticking substitutions to demonstrate compliance, a range of estimates for annual prototypes and ticking substitutions can be used to project potential costs associated with the proposed amendment to incorporate SRM cigarettes into the Standard.

Pre-Amendment Testing Costs. For most mattress models that require some kind of testing, the testing cost per model to manufacturers is comprised chiefly of: (1) The resource costs of producing the mattresses used for destructive testing, including shipping to a test laboratory; and (2) the laboratory's fee for the testing service, which includes photographic and other records prepared by the test laboratory as well as the cigarettes consumed in testing.

The cost of mattresses consumed in prototype testing may amount to approximately $400 for a typical two-mattress test series (although the range can go much higher, to more than $1,000 per mattress for low-volume, specialty items). Prototype test charges reported by third party testing laboratories can vary widely, especially by location. For example, charges for tests performed in China tend to be significantly lower than charges for tests performed in the United States. Overall, these charges, which include the cost of the test cigarettes, may average about $250 per prototype (labor and material costs for manufacturers to perform their own tests may be similar). Thus, the current average total cost per mattress prototype may be roughly $400 + $250 = $650. A ticking substitution test is simpler and much less expensive, requiring only small samples of ticking

material, a reusable small-scale test apparatus, and a smaller number of cigarettes; the average total cost may be around $50.

Testing costs incurred for prototypes and ticking substitutions can be allocated over a production run of mattresses. The cost per unit may vary with production volume, the mix of tests performed, and other factors. The examples below incorporate assumptions based on discussions with industry representatives. These examples illustrate some possible baseline cost differences for larger versus smaller firms:

Typical example for a medium-to-large producer:

- 20 new models: 5 new constructions + 15 new tickings
- 5 prototype tests @ $650 each = $3,250
- 15 ticking substitution classification tests @ $50 each = $750
- Total base year cost = $3,250 + $750 = $4,000
- Baseline testing cost for production run of 50,000 units = $0.08 per unit

Typical example for a smaller producer:

- 5 new models: 2 new constructions + 3 new tickings
- 2 prototype tests @ $650 each = $1,300
- 3 ticking substitution classification tests @ $50 each = $150
- Total base year cost = $1,300 + $150 = $1,450
- Baseline testing cost for production run of 5,000 units = $0.29 per unit

These examples reflect the likely average annual testing costs to industry, assuming reasonably full compliance with 16 CFR part 1632. Thus, approximate baseline testing costs for the largest 50 mattress manufacturers would be about 50 × $4,000 = $200,000 annually; testing costs for the remaining 350 firms would be about 350 × $1,450 = $507,500. Thus, total estimated baseline testing costs may be about $200,000 + $507,500 = $707,500 per year.

Costs per Firm Associated With the Proposed Amendment. The only cost increase associated with the proposed amendment is related to the SRM cigarettes. The anticipated price of SRM cigarettes from NIST is about $245 per carton, including estimated typical shipping (a carton contains 200 cigarettes, *i.e.*, 10 packs of 20). Testing laboratories and others can obtain (RIP) Pall Mall cigarettes currently on the market for prices ranging from $60 to $100 per carton, depending on the geographic region. Thus, the cost of cigarettes for parties performing tests may increase from as little as approximately $6 to $10 per pack, to as much as approximately $25 per pack, representing an increase of $15 to $19 per pack.

Under the protocol in 16 CFR part 1632, new packs of cigarettes are opened for each test sequence. A new prototype or confirmatory test consumes about two packs, and a ticking substitution test consumes about one pack. Assuming an increase in price per pack of $19, the average cost of performing the tests could increase by 2 × 19 = $38 per prototype and $19 per ticking substitution. This represents a 6 percent increase ($38/$650) in average total resource costs per prototype, and a 38 percent increase ($19/$50) in average resource costs per ticking substitution.

In the above "typical producer" examples, the larger firm with 20 new models would incur increased prototype costs of 5 × $38 = $190 plus increased ticking substitution costs of 15 × $19 = $285, for a total annual increase of $190 + $285 = $475 (about 12 percent of the firm's overall $4,000 annual testing cost). Over a 50,000 unit production run, the cost would be $0.0095 (*i.e.*, less than one cent) per unit. The smaller firm with five new models would incur increased prototype costs of 2 × $38 = $76 and increased ticking substitution costs of 3 × 19 = $57, for a total annual increase of $76 + $57 = $133 (*i.e.*, about 9 percent of the firm's overall $1,450 annual testing cost). Over a 5,000 unit production run, the increased testing cost would be $0.027 (*i.e.*, less than three cents) per mattress.

In summary, the expected additional cost of testing related to the proposal may range from about $133 to $475 per firm, or about one to three cents per mattress produced. The distribution of this projected cost among manufacturers and testing laboratories is uncertain because some test laboratories may choose to pass their increased costs—in the form of higher test fees—on to manufacturers, while others may not. Even if all such costs were passed on to manufacturers, it is unlikely that there would be a noticeable effect on wholesale or retail mattress prices.

Aggregate Costs Associated With the Proposed Amendment. There may be as many as 200 new product manufacturers and 200 renovators, for a total of about 400 firms. The largest 50 firms are assumed to have 20 new models (50 × 20 = 1,000 models to be tested), and the remaining 350 firms to have five new models (350 × 5 = 1,750 models to be tested), for a total of 1,000 + 1,750 = 2,750 models to be tested. The aggregate annual cost of the proposed amendment will vary with the number of new prototypes and ticking substitutions. A point estimate can be developed using the pre amendment baseline examples above and the best available information on these variables.

Using the baseline assumptions for new prototypes versus ticking substitutions, the 50 largest firms would have an average of five prototypes each (for a total of 5 × 50 = 250) and the remaining 350 smaller firms would have two prototypes each (for a total of 2 × 350 = 700); thus, the overall number of prototypes to be performed would be 250 + 700 = 950. The number of ticking substitutions would be 15 each for the larger firms (for a total of 15 × 50 = 750) and three each for the smaller firms (for a total of 3 × 350 = 1,050); the overall number of ticking substitutions would be 750 + 1,050 = 1,800.

At two packs of cigarettes per prototype and one pack per ticking substitution, the estimated quantity consumed in testing would be 2 × 950 = 1,900 for prototypes and 1,800 for ticking substitutions, for a total of 1,900 + 1,800 = 3,700 packs. At an increase of $19 per pack, the estimated total resource cost would be 3,700 × 19 = $70,300. This point estimate represents an unweighted average increase of about 10 percent of the estimated $707,500 aggregate annual industry testing costs related to 16 CFR part 1632.

In addition to the projected costs to industry, the CPSC and other government agencies (for example, the California Bureau of Home Furnishings & Thermal Insulation and the Canadian Ministry of Health) would likely purchase small quantities of SRM cigarettes from NIST for compliance testing and related research. Thus, the proposal also would have minor costs to Federal and other government agencies, depending on the numbers of tests these organizations may perform in any given year.

The proposed effective date of the amendment is one year from the date of publication of a final rule in the **Federal Register**. New mattress models are typically introduced once or twice per year. The proposed effective date would allow this product cycle to proceed without potential disruption or additional testing costs. It would also help ensure continuing availability of an adequate supply of SRM cigarettes to testing laboratories and manufacturers from NIST.

In summary, the proposed amendment to specify the SRM cigarette is not expected to have a significant impact on expected benefits or costs of the Standard in 16 CFR part 1632. Resource costs may amount to roughly $70,000 per year. The amendment would, however, reduce test variability

and uncertainty among manufacturers subject to the Standard and among testing organizations. Both the expected benefits and likely economic costs of the amendment are small, and the likely effect on testing costs per new prototype mattress or ticking substitution would be minor, especially when the projected cost is allocated over a production run of complying mattresses.

4. Regulatory Alternatives

The Commission could consider two basic alternatives to the proposed amendment: (1) Base the standard test cigarette on a different SRM, with the approximate lower ignition strength of an RIP cigarette; or (2) take no action on the smoldering ignition source issue.

Neither the proposed amendment nor either of these two alternatives would likely have a substantial economic impact. There would, however, be some relative differences in terms of resource costs and potential effects on the level of benefits the Standard affords. The advantages and disadvantages of these two basic alternatives are discussed immediately below.

a. Alternate SRM

Under this first alternative, the Commission could amend the Standard to specify a different, lower ignition propensity SRM cigarette. Such an SRM would presumably be closer in ignition strength to the "worst-case" RIP cigarettes currently on the market.

There are three possible advantages to specifying an alternative SRM: (1) The problem of test repeatability and reproducibility would be addressed, as it is under the proposed amendment; (2) an alternative SRM would, in theory, better approximate the fire risk associated with cigarettes currently available to consumers in the United States; and (3) currently, there is a low ignition propensity SRM (SRM 1082) developed by NIST for use by state regulators in assessing the compliance of RIP cigarettes. These SRM cigarettes are currently available at a price, including estimated typical shipping, of $195 per carton (compared to the projected price for the proposed SRM 1196 cigarette of $245 per carton). Thus, resource costs to manufacturers and testing laboratories (including the CPSC) to adopt a readily-available alternative SRM could be somewhat lower than under the proposed amendment; although it is likely that any new alternate SRM would be priced at least comparably to the proposed SRM 1196.

There are three possible disadvantages to specifying an alternative SRM. First, in comparison to the proposed SRM, a low ignition propensity SRM would not be considered equivalent or "safety neutral," under the presumption that the use of such cigarettes would result in a less stringent flammability test. While no data are available to describe the extent of this potential difference, it is quite possible that more mattress construction prototypes would pass a test using a lower ignition propensity SRM than do currently with commercially available cigarettes. This may result in an unknown, but potentially adverse, impact on the level of safety benefits provided by the Standard.

The second disadvantage is that the two known technical approaches to developing a lower ignition propensity SRM appear to be incompatible with the test in 16 CFR part 1632. First, under existing state regulations, all known commercial RIP cigarettes incorporate banded paper designed to impede full length burns. The current test measures mattress ignitions resulting from full length cigarette burns and allows up to three relights per cigarette to achieve a full length burn. It is likely that either: (1) Many low ignition propensity cigarettes would be wasted in completing the test; or (2) the test could not be reliably completed using banded-paper, self-extinguishing cigarettes. Second, while the existing SRM 1082 does not use banded-paper technology, it would have the same impracticalities as the banded-paper cigarette under the current Standard. The low ignition propensity design of the existing SRM 1082 is intended to yield a 12 to 15 percent full length burn rate (*i.e.*, the cigarettes are made to self-extinguish 85 to 88 percent of the time). Because this SRM is intended to be used as a calibration tool for cigarette manufacturers subject to state regulations, it is purposely designed to represent a minimal ignition propensity target, rather than a typical or representative RIP ignition propensity. It would clearly not represent a "worst-case" RIP cigarette. Further, SRM 1082 does not meet the specified physical criteria for cigarette length and density; so these cigarettes are physically unlike the current test cigarette or current RIP cigarettes.

The third disadvantage is that the properties of a new SRM that would mimic the ignition behavior of "worst case" RIP cigarettes have not been characterized. The "worst case" RIP cigarette would be one that burns its full length and may, therefore, be similar to its non-RIP counterpart. Insufficient research exists to support a new and different, low ignition propensity SRM; and a variety of as-yet-unknown modifications to the test method in 16 CFR part 1632 would likely be needed to incorporate such an SRM. The time and cost to develop a new SRM is undetermined, but the existing concern about the short-term availability of a consistent ignition source would not be resolved.

Thus, while a lower ignition strength SRM cigarette may be technically feasible, there is no readily available SRM alternative that would address the need for a consistent, "safety-neutral" ignition source.

b. No Action

Under the second alternative, the test cigarette specifications in the Standard would remain unchanged. Manufacturers and testers would remain free to conduct tests with any available cigarettes, including RIP Pall Malls, which meet the existing physical parameters.

The possible advantage of the Commission taking no action is that the projected minor increase in resource costs of testing would not be incurred.

The possible disadvantage of the Commission taking no action would be that the basic issue of test result variability due to differences in cigarettes would not be addressed, and the uncertainty and confusion surrounding the reliability of tests for compliance with 16 CFR part 1632 would not be reduced. Manufacturers and testing firms may continue to conduct tests that are either wasteful (in terms of extra RIP cigarettes required to complete a test) or have irreproducible results.

In summary, there are no readily available and/or, technically feasible alternatives to the proposed amendment that would have lower estimated costs and still address the need for a consistent ignition source that retains the "safety-neutral" approach of the proposed amendment.

E. Regulatory Flexibility Act Certification

Under the Regulatory Flexibility Act ("RFA"), 5 U.S.C. 601 *et seq.*, an agency that engages in rulemaking generally must prepare initial and final regulatory flexibility analyses describing the impact of the rule on small businesses and other small entities. Section 605 of the RFA provides that an agency is not required to prepare a regulatory flexibility analysis if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

The proposed rule would retain the current mattress test procedure, but require that entities performing cigarette

and uncertainty among manufacturers subject to the Standard and among testing organizations. Both the expected benefits and likely economic costs of the amendment are small, and the likely effect on testing costs per new prototype mattress or ticking substitution would be minor, especially when the projected cost is allocated over a production run of complying mattresses.

4. Regulatory Alternatives

The Commission could consider two basic alternatives to the proposed amendment: (1) Base the standard test cigarette on a different SRM, with the approximate lower ignition strength of an RIP cigarette; or (2) take no action on the smoldering ignition source issue.

Neither the proposed amendment nor either of these two alternatives would likely have a substantial economic impact. There would, however, be some relative differences in terms of resource costs and potential effects on the level of benefits the Standard affords. The advantages and disadvantages of these two basic alternatives are discussed immediately below.

a. Alternate SRM

Under this first alternative, the Commission could amend the Standard to specify a different, lower ignition propensity SRM cigarette. Such an SRM would presumably be closer in ignition strength to the "worst-case" RIP cigarettes currently on the market.

There are three possible advantages to specifying an alternative SRM: (1) The problem of test repeatability and reproducibility would be addressed, as it is under the proposed amendment; (2) an alternative SRM would, in theory, better approximate the fire risk associated with cigarettes currently available to consumers in the United States; and (3) currently, there is a low ignition propensity SRM (SRM 1082) developed by NIST for use by state regulators in assessing the compliance of RIP cigarettes. These SRM cigarettes are currently available at a price, including estimated typical shipping, of $195 per carton (compared to the projected price for the proposed SRM 1196 cigarette of $245 per carton). Thus, resource costs to manufacturers and testing laboratories (including the CPSC) to adopt a readily-available alternative SRM could be somewhat lower than under the proposed amendment; although it is likely that any new alternate SRM would be priced at least comparably to the proposed SRM 1196.

There are three possible disadvantages to specifying an alternative SRM. First, in comparison to the proposed SRM, a low ignition propensity SRM would not be considered equivalent or "safety neutral," under the presumption that the use of such cigarettes would result in a less stringent flammability test. While no data are available to describe the extent of this potential difference, it is quite possible that more mattress construction prototypes would pass a test using a lower ignition propensity SRM than do currently with commercially available cigarettes. This may result in an unknown, but potentially adverse, impact on the level of safety benefits provided by the Standard.

The second disadvantage is that the two known technical approaches to developing a lower ignition propensity SRM appear to be incompatible with the test in 16 CFR part 1632. First, under existing state regulations, all known commercial RIP cigarettes incorporate banded paper designed to impede full length burns. The current test measures mattress ignitions resulting from full length cigarette burns and allows up to three relights per cigarette to achieve a full length burn. It is likely that either: (1) Many low ignition propensity cigarettes would be wasted in completing the test; or (2) the test could not be reliably completed using banded-paper, self-extinguishing cigarettes. Second, while the existing SRM 1082 does not use banded-paper technology, it would have the same impracticalities as the banded-paper cigarette under the current Standard. The low ignition propensity design of the existing SRM 1082 is intended to yield a 12 to 15 percent full length burn rate (*i.e.*, the cigarettes are made to self-extinguish 85 to 88 percent of the time). Because this SRM is intended to be used as a calibration tool for cigarette manufacturers subject to state regulations, it is purposely designed to represent a minimal ignition propensity target, rather than a typical or representative RIP ignition propensity. It would clearly not represent a "worst-case" RIP cigarette. Further, SRM 1082 does not meet the specified physical criteria for cigarette length and density; so these cigarettes are physically unlike the current test cigarette or current RIP cigarettes.

The third disadvantage is that the properties of a new SRM that would mimic the ignition behavior of "worst case" RIP cigarettes have not been characterized. The "worst case" RIP cigarette would be one that burns its full length and may, therefore, be similar to its non-RIP counterpart. Insufficient research exists to support a new and different, low ignition propensity SRM; and a variety of as-yet-unknown modifications to the test method in 16 CFR part 1632 would likely be needed to incorporate such an SRM. The time and cost to develop a new SRM is undetermined, but the existing concern about the short-term availability of a consistent ignition source would not be resolved.

Thus, while a lower ignition strength SRM cigarette may be technically feasible, there is no readily available SRM alternative that would address the need for a consistent, "safety-neutral" ignition source.

b. No Action

Under the second alternative, the test cigarette specifications in the Standard would remain unchanged. Manufacturers and testers would remain free to conduct tests with any available cigarettes, including RIP Pall Malls, which meet the existing physical parameters.

The possible advantage of the Commission taking no action is that the projected minor increase in resource costs of testing would not be incurred.

The possible disadvantage of the Commission taking no action would be that the basic issue of test result variability due to differences in cigarettes would not be addressed, and the uncertainty and confusion surrounding the reliability of tests for compliance with 16 CFR part 1632 would not be reduced. Manufacturers and testing firms may continue to conduct tests that are either wasteful (in terms of extra RIP cigarettes required to complete a test) or have irreproducible results.

In summary, there are no readily available and/or, technically feasible alternatives to the proposed amendment that would have lower estimated costs and still address the need for a consistent ignition source that retains the "safety-neutral" approach of the proposed amendment.

E. Regulatory Flexibility Act Certification

Under the Regulatory Flexibility Act ("RFA"), 5 U.S.C. 601 *et seq.*, an agency that engages in rulemaking generally must prepare initial and final regulatory flexibility analyses describing the impact of the rule on small businesses and other small entities. Section 605 of the RFA provides that an agency is not required to prepare a regulatory flexibility analysis if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

The proposed rule would retain the current mattress test procedure, but require that entities performing cigarette

ignition tests (including the CPSC, other state agencies, and industry testing organizations) purchase and use SRM cigarettes at a higher cost than commercial, non-SRM cigarettes. No additional actions would be required of small entities. The costs associated with the proposed rule would essentially be borne by mattress manufacturers and importers that perform (or pay fees for) compliance testing.

The latest available (2002) U.S. Census Bureau Statistics of U.S. Businesses and (2003) Economic Census data on this industry sector reported over 500 firms and more than 600 manufacturing establishments in NAICS sector code 337910, Mattress Manufacturing. More recent industry estimates suggest that the number of firms, including renovators, is closer to 400. The few industry-leading manufacturers are large firms with annual gross revenues of more than $1 billion and 3,000–5,000 employees each. However, the vast majority of producers—including all renovators—are much smaller, with annual gross revenues of under $20 million and fewer than 100 employees each. Many manufacturers serve regional markets and do not have nationwide distribution. The Economic Census reported that all but the largest 12 mattress producing firms—more than 95 percent—had fewer than 500 employees. These would be considered small businesses under the definition used by the Small Business Administration for this industry.

The larger firms are often comprised of multiple small manufacturing establishments. The average gross revenue of the 585 small manufacturing establishments identified in 2002 was about $8.1 million. Excluding small establishments with more than 100 employees from this average provides a reasonable approximation of small firms that are independent of the major producers. This approach reduces the average gross revenue to about $4 million. This $4 million average can be used to illustrate the potential effect of the proposed rule on small firms.

As discussed in the cost analysis section above, added testing and certification costs related to the proposed rule may average about $133 per small firm, or less than three cents per unit. This represents about $133/$4 million = .0033 percent (*i.e.*, less than one percent) of small firms' average gross revenues. Even using the $475 increased cost estimate presented in the analysis for larger firms, the impact on small firms' average gross revenue would be only $475/$4 million = .012 percent.

Based on this information, the proposal would have little or no effect on small producers because the design and construction of existing, compliant mattress products would remain unchanged and because the resource cost increase of using SRM cigarettes would represent a minimal increase in total testing costs. Thus, the Commission preliminarily concludes that the proposed rule would not have a significant impact on a substantial number of small businesses or other small entities.

F. Environmental Considerations

Pursuant to the National Environmental Policy Act, and in accordance with the Council on Environmental Quality regulations and CPSC procedures for environmental review, the Commission has assessed the possible environmental effects associated with the proposed rule.

The Commission's regulations state that amendments to rules providing performance requirements for consumer products normally have little or no potential for affecting the human environment. 16 CFR 1021.5(c)(1). Nothing in this proposed rule alters that expectation. Therefore, because the proposed amendment would have no adverse effect on the environment, neither an environmental assessment nor an environmental impact statement is required.

G. Executive Orders

According to Executive Order 12988 (February 5, 1996), agencies must state in clear language the preemptive effect, if any, of new regulations. The proposed rule, if finalized, would modify a flammability standard issued under the FFA. With certain exceptions that are not applicable in this instance, no state or political subdivision of a state may enact or continue in effect "a flammability standard or other regulation" applicable to the same fabric or product covered by an FFA standard if the state or local flammability standard or other regulations is "designed to protect against the same risk of the occurrence fire" unless the state or local flammability standard or regulation "is identical" to the FFA standard. *See* 15 U.S.C. 1476(a). The proposed rule would not alter the preemptive effect of the existing mattress standard.

Thus, the proposed rule would preempt nonidentical state or local flammability standards for mattresses or mattress pads designed to protect against the same risk of the occurrence of fire.

H. Effective Date

Section 4(b) of the FFA (15 U.S.C. 1193(b)) provides that an amendment of a flammability standard shall become effective one year from the date it is promulgated, unless the Commission finds for good cause than an earlier or later effective date is in the public interest, and the Commission publishes the reason for that finding. Section 4(b) of the FFA also requires that an amendment of a flammability standard shall exempt products "in inventory or with the trade" on the date the amendment becomes effective, unless the Commission limits or withdraws that exemption because those products are so highly flammable that they are dangerous when used by consumers for the purpose for which they are intended. The Commission concludes that a one-year effective date is appropriate to ensure ample time for the product cycle and continuing availability of SRM cigarettes from NIST. Therefore, the Commission proposes that the amendment to the ignition source provision of the standard would become effective one year after publication of a final amendment in the **Federal Register.**

I. Proposed Findings

Section 4(a) and (j)(2) of the FFA require the Commission to make certain findings when it issues or amends a flammability standard. The Commission must find that the standard or amendment: (1) Is needed to adequately protect the public against the risk of the occurrence of fire leading to death, injury, or significant property damage; (2) is reasonable, technologically practicable, and appropriate; (3) is limited to fabrics, related materials, or products which present unreasonable risks; and (4) is stated in objective terms. 15 U.S.C. 1193(b). In addition, the Commission must find that: (1) If an applicable voluntary standard has been adopted and implemented, that compliance with the voluntary standard is not likely to adequately reduce the risk of injury, or compliance with the voluntary standard is not likely to be substantial; (2) that benefits expected from the regulation bear a reasonable relationship to its costs; and (3) that the regulation imposes the least burdensome alternative that would adequately reduce the risk of injury. Because section 4(a) of the FFA refers to proceedings for the determination of an appropriate flammability standard "or other regulation or amendment," and because this proposed rule would be a technical amendment rather than a new flammability standard, for purposes of

this section of the preamble, we will refer to the proposed rule as a "proposed amendment." These findings are discussed below.

The amendment to the Standard is needed to adequately protect the public against unreasonable risk of the occurrence of fire. The current Standard specifies as the ignition source cigarettes that are no longer being produced. In order for the Standard to continue to be effective (and for labs to test mattresses and mattress pads to determine whether they comply with the Standard), it is necessary to change the ignition source specification. The proposed amendment is necessary to ensure that the testing is reliable and that results will not vary from one lab or manufacturer to another. Such variation would be likely if labs or manufacturers were able to use different ignition sources that have similar physical properties but different burning characteristics.

The amendment to the Standard is reasonable, technologically practicable, and appropriate. The proposed amendment is based on technical research conducted by NIST, which established that the SRM cigarette is capable of providing reliable and reproducible results in flammability testing of mattresses and mattress pads. The proposed SRM represents an equivalent, safety-neutral ignition source for use in testing to establish compliance with the Standard.

The amendment to the Standard is limited to fabrics, related materials, and products that present an unreasonable risk. The proposed amendment would continue to apply to the same products as the existing Standard.

Voluntary standards. There is no applicable voluntary standard for mattresses. The proposal would amend an existing Federal mandatory standard.

Relationship of benefits to costs. Amending the Standard to specify SRM cigarettes as the ignition source would allow testing to the Standard to continue without interruption, would maintain the effectiveness of the Standard, and would not significantly increase testing costs to manufacturers and importers of mattresses and mattress pads. Thus, there is a reasonable relationship between benefits and costs of the proposed amendment. Both expected benefits and costs of the proposed amendment are likely to be small. The likely effect on testing costs would be minor.

Least burdensome requirement. No other alternative would allow the Standard's level of safety and effectiveness to continue. Thus, the proposed amendment imposes the least burdensome requirement that would adequately address the risk of injury.

J. Conclusion

For the reasons discussed above, the Commission preliminarily finds that amending the mattress flammability standard (16 CFR part 1632) to specify SRM cigarettes as the ignition source is needed to adequately protect the public against the unreasonable risk of the occurrence of fire leading to death, injury, and significant property damage. The Commission also preliminarily finds that the amendment to the Standard is reasonable, technologically practicable, and appropriate. The Commission further finds that the amendment is limited to the fabrics, related materials, and products that present such unreasonable risks.

K. References

1. Gann, R.G., and Hnetkovsky E.J., *Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes*, Technical Note 1627, National Institute of Standards and Technology, Gaithersburg, MD 20899, 2009.

2. Directorate for Economic Analysis Report, *Preliminary Regulatory Analysis: Smoldering Ignition Source Draft Proposed Technical Amendment to the Flammability Standard for Mattresses and Mattress Pads* (16 CFR part 1632).

List of Subjects in 16 CFR Part 1632

Consumer protection, Flammable materials, Labeling, Mattresses and mattress pads, Records, Textiles, Warranties.

For the reasons given above, the Commission proposes to amend 16 CFR part 1632 as follows:

PART 1632—STANDARD FOR THE FLAMMABILITY OF MATTRESSES AND MATTRESS PADS (FF 4–72, AMENDED)

1. The authority citation for part 1632 continues to read as follows:

Authority: 15 U.S.C. 1193, 1194; 15 U.S.C. 2079(b).

2. Section 1632.4 is amended by revising paragraph (a)(2) to read as follows:

§ 1632.4 Mattress test procedure.

(a) * * *

(2) *Ignition source.* The ignition source shall be National Institute of Standards and Technology ("NIST") Standard Reference Material ("SRM") 1196, available for purchase from the National Institute for Standards and Technology, 100 Bureau Drive, Gaithersburg, MD 20899.

* * * * *

Dated: October 26, 2010.

Todd A. Stevenson,

Secretary, Consumer Product Safety Commission.

[FR Doc. 2010–27504 Filed 10–29–10; 8:45 am]

BILLING CODE 6355–01–P

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

21 CFR Part 1308

[Docket No. DEA–344P]

Listing of Approved Drug Products Containing Dronabinol in Schedule III

AGENCY: Drug Enforcement Administration, Department of Justice.

ACTION: Notice of proposed rulemaking.

SUMMARY: This proposed rule is issued by the Deputy Administrator of the Drug Enforcement Administration (DEA) to modify the listing of the Marinol® formulation in schedule III so that certain generic drug products are also included in that listing.

Several products are currently the subject of Abbreviated New Drug Applications (ANDAs) under review by the U.S. Food and Drug Administration (FDA). Each product is a generic formulation of Marinol® and contains dronabinol, the (-) isomer of delta-9-(trans)-tetrahydrocannabinol (THC), which is a schedule I controlled substance. Due to variations in formulation, these generic Marinol® products do not meet the specific conditions specified in the current schedule III listing.

This proposed action expands the schedule III listing to include formulations having naturally-derived dronabinol and products encapsulated in hard gelatin capsules. This would have the effect of transferring the FDA-approved versions of such generic Marinol® products from schedule I to schedule III.

DATES: Written comments must be postmarked and electronic comments must be submitted on or before January 3, 2011. Commenters should be aware that the electronic Federal Docket Management System will not accept comments after midnight Eastern Time on the last day of the comment period.

ADDRESSES: To ensure proper handling of comments, please reference "Docket No. DEA–344" on all written and electronic correspondence. Written comments sent via regular or express

TAB B:

Directorate for Economic Analysis Report, "Final Regulatory Analysis: Smoldering Ignition Source Draft Proposed Technical Amendment to the Flammability Standard for Mattresses and Mattress Pads (16 CFR Part 1632)"

TAB B

Final Regulatory Analysis:

Smoldering Ignition Source

Technical Amendment to the

Flammability Standard for Mattresses and Mattress Pads

(16 CFR Part 1632)

Dale R. Ray
Directorate for Economic Analysis
U.S. Consumer Product Safety Commission
September 2011

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Executive Summary

In November 2010, the U.S. Consumer Product Safety Commission (CPSC) issued a notice of proposed rulemaking (NPR) to amend the *Standard for the Flammability of Mattresses and Mattress Pads* (16 CFR part 1632) ("Standard") under the authority of the Flammable Fabrics Act (FFA). The standard was originally promulgated in 1972, to reduce the risk of fire associated with smoldering ignitions by cigarettes or other smoking materials. The amendment staff recommends would revise the specification for the cigarette used as the smoldering ignition source in the flammability performance test of the standard.

Since the mattress standard became effective, compliance testing was generally performed using a commercial, unfiltered Pall Mall cigarette. Research supporting the original standard identified this cigarette as the most severe available smoldering ignition source. In 2008, the manufacturer discontinued production of this cigarette. Industry compliance tests have since been conducted using leftover inventories of the unfiltered Pall Mall, or in some cases using a "reduced ignition propensity" (RIP) replacement that is in current production. More recent research conducted for the Commission by the National Institute for Standards and Technology (NIST) has revealed that the ignition strength of cigarettes may vary significantly, even within brands and packings. Thus, the use of nonstandardized, commercial cigarettes introduces uncertainty about the repeatability of test results among firms subject to or certifying compliance with the standard.

To fill the need for a consistent-performing "standard" ignition source, NIST developed a Standard Reference Material (SRM) cigarette under an Interagency Agreement (IAG) with the CPSC. The SRM cigarette is designed to have the approximate ignition strength of the original unfiltered Pall Mall. This SRM is specified in CPSC staff's recommended technical amendment. The staff-recommended amendment is intended to be "safety-neutral"; it would not affect the flammability performance of currently produced, complying mattresses.

The staff-recommended amendment would not significantly affect the level of benefits or costs associated with the standard. The expected potential benefit consists of reduced test variability and industry uncertainty about which cigarette to use and the comparability of test results. The potential cost consists of a small increase in testing costs that would result when mattress producers either: (a) establish prototypes for new mattress constructions, or (b) make ticking substitutions on existing, complying constructions.

Since the Commission proposed the amendment, NIST reduced the price of the SRM 1196 cigarette by approximately half, to reduce potential costs burdens on industry. Increased resource costs associated with the use of SRM cigarettes are projected to be $13 per prototype, an increase of about 2 percent over existing prototype testing costs, and $6.50 per ticking substitution, an increase of about 12 percent over existing ticking substitution testing costs. These costs are allocated over production runs of complying mattresses. Among the approximately 400 firms affected, average increased testing costs would range from about $45 to $162 per firm. The cost over a production run could range from about one-third to one cent per mattress produced under those tests. Aggregate testing costs for all firms may increase by about 3.5 percent, or roughly $24,000 per year. This represents a minor impact on total testing and certification costs. For annual production of about 25 million mattresses sold in the U.S., the estimated overall average cost is less than one-tenth of one cent per production unit. Wholesale or retail prices of complying mattresses are unlikely to increase as a result. Further, the staff-recommended amendment would not have significant impacts on small firms or other small entities.

The Commission received five public comments on the NPR, one in general support of the amendment and four generally opposing it. The comments opposing the amendment generally favored a different standard cigarette ignition source that might be more like the RIP cigarettes currently in widespread distribution. The Commission could consider a different (as yet unspecified) low-ignition propensity SRM cigarette as an alternative to the amendment that staff recommends; however, this alternative may

not be “safety-neutral.” The Commission could also take no action; under this alternative, testing costs would not increase, but the need for a consistent ignition source would not be addressed.

Final Regulatory Analysis of the Technical Amendment to 16 CFR Part 1632 Standard for Mattresses

Introduction

The U.S. Consumer Product Safety Commission (CSPC) administers two flammability rules on mattresses and mattress pads: the *Standard for the Flammability of Mattresses and Mattress Pads* (16 CFR part 1632, promulgated in 1972, by the U.S. Department of Commerce) and the *Standard for the Flammability (Open Flame) of Mattress Sets* (16 CFR part 1633, promulgated in 2006, by the CPSC). Both standards were issued under the authority of the Flammable Fabrics Act (FFA). The standards reduce the risk of fires resulting from ignitions of mattresses by smoldering cigarettes (16 CFR part 1632) and by open-flame sources (16 CFR part 1633).

On November 1, 2010, the Commission published a notice of proposed rulemaking (NPR) in the *Federal Register* to revise the specifications for the cigarette used as the smoldering ignition source in 16 CFR part 1632. The purpose of this proposed amendment is to improve the repeatability of the performance test.

The existing 16 CFR part 1632 standard specifies the smoldering ignition source in terms of physical characteristics that affect ignition strength. The test cigarette is unfiltered and of specified length, packing density, and weight. These physical properties were chosen to represent the most severe level of ignition strength among available commercial cigarettes. An unfiltered, 85 millimeter Pall Mall™ cigarette has long been used as the "standard" cigarette for compliance testing and other flammability research by the CPSC and by manufacturers and other testing laboratories.

In 2008, the R.J. Reynolds Tobacco Company (RJR) discontinued production of the conventional Pall Mall cigarette in response to increasingly widespread state legislation requiring "reduced ignition propensity" (RIP) or so-called "fire-safe" cigarettes

designed to reduce the risk of cigarette-ignited fires. Subsequently, R.J. Reynolds began production of RIP versions of its Pall Mall product line. Industry tests have since been conducted using existing inventories of conventional, pre-RIP Pall Malls; in some cases, tests may have been conducted using RIP replacement cigarettes.

Upon learning of RJR's plan to discontinue the conventional Pall Mall cigarettes, CPSC staff entered into an Interagency Agreement (IAG) with the National Institute of Standards and Technology (NIST) to conduct research to establish a Standard Reference Material (SRM) test cigarette that would maintain continuity of supply for the CPSC and for industry and that would afford improved test repeatability without affecting the level of safety provided by 16 CFR part 1632. The CPSC posted the resulting NIST Technical Note 1627 for public comment in 2009, and received three substantive public comments. These comments were addressed in the 2010 NPR.

The CPSC staff-recommended technical amendment specifies an SRM cigarette, NIST SRM 1196, based on NIST's research. This SRM cigarette is designed to be equivalent in heat of ignition and percentage full-length burn (PFLB) to the "worst-case" production Pall Mall identified in research supporting the original standard. The use of SRM cigarettes would not alter the stringency of the flammability performance tests in the original Standard, and the test method itself would not be amended. The staff-recommended technical amendment is therefore, "safety-neutral" (*i.e.*, it is intended to neither raise nor lower the level of fire protection provided by 16 CFR part 1632).

Requirements of Applicable Statutes

Section 4 of the FFA, which governs the issuance of regulations under the FFA, requires that the Commission prepare a final regulatory analysis of the technical amendment, including:

- a description of the potential benefits and potential costs of the amendment, including any benefits or costs that cannot be quantified in monetary terms, and the identification of those likely to receive the benefits and bear the costs;
- a description of any alternatives to the final amendment, which were considered by the Commission, together with a summary description of their potential benefits and costs, and a brief explanation of the reasons why these alternatives were not chosen; and
- a summary of any significant issues raised by the comments submitted in response to the preliminary regulatory analysis, and a summary of the assessment by the Commission of such issues.

Under Section 4(j)(2) of the FFA, the Commission must also find:

- that the benefits expected from the amendment bear a reasonable relationship to its costs; and
- that the amendment imposes the least burdensome requirement that prevents or adequately reduces the risk of injury for which the amendment is being promulgated.

Additionally, under the Regulatory Flexibility Act of 1980 (RFA), the Commission is required to consider potential effects of the amendment on small businesses and other small entities. In the NPR, the Commission preliminarily concluded that the proposed amendment would not have a significant impact on a substantial number of small businesses or other entities. While none of the public comments received in response to the NPR specifically mentioned small business impacts, one comment asserted that costs for all mattress producers could increase by more than was estimated in the NPR. This issue is discussed further in the following analysis.

The Mattress Standard

The mattress standard at 16 CFR part 1632 requires premarket, full-scale prototype testing for each new mattress design. Prototype testing must also be performed for each change in materials of an existing design that may affect cigarette ignition resistance. Under the standard, a minimum of 18 cigarettes are consumed per mattress surface. Under the Commission's 2006 interim enforcement policy, two mattress surfaces must be tested (the standard specifies that six surfaces must be tested; however, current reported practice is to test two surfaces). For two-sided, traditional mattresses, one mattress is consumed per prototype. With the market trend in recent years toward single-sided mattresses (*i.e*., those designed not to be flipped), it is much more common that two mattresses are consumed per prototype. In either case, at least 36 cigarettes (about two packs) are consumed per prototype.

No post-prototype, periodic testing is required under 16 CFR part 1632; however, the Standard allows the use of "subordinate" prototypes, based on a confirmatory test of a complying model, such that multiple producers can market that same complying product (*e.g*., one that differs from the prototype in certain acceptable ways and that may be made in different production facilities or under different brand names) under a single prototype. This practice is common in the industry among licensees and especially among smaller firms that manufacture models based on qualified prototypes developed and tested for certification of compliance with both 16 CFR part 1633 and part 1632 by larger firms or "prototype developers." Additionally, 16 CFR part 1632 allows substitutions of cover or "ticking" materials, based on a set of small-scale classification tests, in lieu of new prototypes for each ticking. In this test, 9 to 18 cigarettes are consumed. Equivalency of performance for a majority of new mattress models is demonstrated using this optional ticking substitution test.

Some manufacturers perform 16 CFR part 1632 tests in their production facilities. Most, however, use third party testing laboratories since the advent of 16 CFR part

1633 in 2006 (the 16 CFR part 1633 open-flame test is more complex and costly and requires more specialized equipment than the 16 CFR part 1632 smoldering test).

Potential Benefits and Costs

The SRM cigarette described in the staff-recommended amendment shares approximately the same ignition strength characteristics as originally intended by the standard.

Potential Benefits

Since the staff-recommended amendment is "safety-neutral," mattresses that passed or failed under the existing standard would be expected to generate similar results when the NIST-developed SRM is used. The level of protection provided by the standard would neither increase nor decrease as a result. Thus, there would be no impact on the level or value of fire safety benefits derived from the standard.

There would, however, be potential benefits that are not readily quantifiable. Currently, manufacturers and testing laboratories do not have access to continued supplies of test cigarettes other than RIP Pall Malls. Existing inventories of conventional Pall Malls have been depleted or exhausted. Many industry representatives have requested guidance on the issue of which cigarette to use in testing.

Even if continuing supplies of conventional test cigarettes were available, the variability in cigarette performance described in the NIST research may lead to an unacceptably low level of test outcome reproducibility. This is causing uncertainty among testing firms and among manufacturers and importers certifying compliance with the standard, and these firms have expressed concern that tests conducted by the CPSC and by industry may not be comparable. This inconsistency could lead to unnecessary additional testing. The staff-recommended SRM cigarette amendment

would reduce inconsistency and uncertainty for industry, testing laboratories, and the CPSC.

Potential Costs

Manufacturers currently incur testing costs related to 16 CFR part 1632 whenever new mattress models are introduced that: (a) are of new construction, or (b) have new tickings that may influence cigarette ignition resistance. Larger manufacturers may introduce 20 or more new constructions or ticking substitutions each year. Smaller producers and renovators probably introduce fewer items or rely on prototype developers for multiple models. Qualified prototypes can be expected to be developed for all new constructions and ticking substitutions to demonstrate compliance; a range of estimates for these prototypes and ticking substitutions can be used to estimate annual costs associated with the staff-recommended amendment to incorporate SRM cigarettes into the standard.

Pre-Amendment Testing Costs

For most mattress models that require some kind of testing, the testing cost per model to manufacturers is comprised chiefly of:

- the resource costs of producing the mattresses used for destructive testing, including shipping to a test laboratory, and
- the laboratory's fee for the testing service, which includes photographic and other records prepared by the test laboratory, as well as the cigarettes consumed in testing.

The cost of mattresses consumed in prototype testing may amount to about $400 for a typical two-mattress test series (although the range can go much higher, to more than $1,000 per mattress for low-volume, specialty items). Prototype test charges reported by third party testing laboratories can vary widely, especially by location. For example, charges for tests performed in China tend to be significantly lower than

charges for tests performed in the United States. Overall, these charges, which include the cost of the test cigarettes consumed in the test, may average about $250 per prototype (labor and material costs for manufacturers to perform their own tests may be similar). Thus, the current average total cost per mattress prototype may be roughly $400 + $250 = $650. A ticking substitution test is simpler and much less expensive, requiring only small samples of ticking material, a reusable small-scale test apparatus, and a smaller number of cigarettes. The average total cost per ticking substitution test may be around $50.

Testing costs incurred for prototypes and ticking substitutions can be allocated over a production run of mattresses. The cost per unit may vary with production volume, the mix of tests performed, and other factors. The examples below incorporate assumptions based on discussions with industry representatives and illustrate some possible baseline cost differences for larger versus smaller firms:

Typical example for a medium-to-large producer:

- 20 new models: 5 new constructions + 15 new tickings
- 5 prototype tests @ $650 = $3,250
- 15 ticking substitution classification tests @ $50 = $750
- Total base year cost = $3,250 + $750 = $4,000
- Baseline testing cost for production run of 50,000 units = $0.08 per unit

Typical example for a smaller producer:

- 5 new models: 2 new constructions + 3 new tickings
- 2 prototype tests @ $650 = $1,300
- 3 ticking substitution classification tests@ $50 = $150
- Total base year cost = $1,300 + $150 = $1,450
- Baseline testing cost for production run of 5,000 units = $0.29 per unit

These examples reflect the likely average annual testing costs to industry, assuming reasonably full compliance with 16 CFR part 1632. Thus, approximate

baseline testing costs for the 50 largest mattress manufacturers would be about 50 x $4,000 = $200,000 annually. Testing costs for the remaining 350 firms would be about 350 x $1,450 = $507,500. Thus, total estimated baseline testing costs may be about $200,000 + $507,500 = $707,500 per year.

Costs Per Firm Associated with the Staff-Recommended Amendment

The only cost increase associated with the staff-recommended amendment is related to the SRM cigarettes themselves. The list price of SRM cigarettes from NIST is $239 for a two-carton minimum order, or about $120 per carton, plus shipping. A carton contains 200 cigarettes, or 10 packs of 20. Shipping charges range from $10 to $55 per order, or about $1 to $5 per carton for a typical 10-carton order. Thus, the estimated total average cost of the SRM cigarettes would be up to about $125 per carton. Since the Commission proposed the amendment to the standard, NIST reduced the price of SRM 1196 by about half, in order to reduce the potential cost burden on industry. Testing laboratories and others can obtain (RIP) Pall Mall cigarettes currently on the market for regionally varying prices of $60 to $100 per carton. Thus, the cost of cigarettes to parties performing tests may increase from approximately $6 to $10 per pack, to approximately $12.50 per pack, representing an increase of about $2.50 to $6.50 per pack.

Under the protocol in 16 CFR part 1632, new packs of cigarettes are opened for each test sequence. A new prototype or confirmatory test consumes about two packs, and a ticking substitution test consumes about one pack. Assuming an increased cost per pack of $12.50 – 6 = $6.50, the average cost of performing the tests could increase by 2 x $6.50 = $13 per prototype and $6.50 per ticking substitution. This represents a 2 percent increase ($13/$650) in average total resource costs per prototype, and a 12 percent increase ($6.50/$50) in average resource costs per ticking substitution.

In the above “typical producer” examples, the larger firm with 20 new models would incur increased prototype costs of 5 x $13 = $65, plus increased ticking

substitution costs of 15 x $6.50 = $97.50, for a total annual increase of $65 + $97.50 = $162.50 (about 4 percent of the firm's overall $4,000 annual testing cost). Over a 50,000 unit production run, the cost would be $0.003 (*i.e*., about one-third of one cent) per unit. The smaller firm with five new models would incur increased prototype costs of 2 x $13 = $26 and increased ticking substitution costs of 3 x $6.50 = $19.50, for a total annual increase of $26 + $19.50 = $45.50 (about 3 percent of the firm's overall $1,450 annual testing cost). Over a 5,000 unit production run, the increased testing cost would be $0.009 (*i.e*., about one cent) per mattress.

In summary, the expected additional cost of testing related to the staff-recommended amendment may range from about $45 to $162 per firm. The cost over a production run could range from about one-third to one cent per mattress produced under those tests. The distribution of this projected cost among manufacturers and testing laboratories is uncertain because some test laboratories may choose to pass on increased costs in the form of higher test fees, while others may not. Even if all such costs were passed on to manufacturers, it is unlikely that there would be a noticeable effect on wholesale or retail mattress prices.

Aggregate Costs Associated With the Staff-Recommended Amendment

There may be about 200 new-product manufacturers and 200 renovators, for a total of about 400 firms. The largest 50 firms are assumed to have 20 new models (50 x 20 = 1,000 models to be tested), and the remaining 350 firms assumed to have five new models (350 x 5 = 1,750 models to be tested), for a total of 1,000 + 1,750 = 2,750 models to be tested. The aggregate annual cost of the staff-recommended amendment would vary with the number of new prototypes and ticking substitutions. A point estimate can be developed using the preamendment baseline examples above.

Using the baseline assumptions for new prototypes versus ticking substitutions, the 50 largest firms would have an average of five prototypes each (for a total of 5 x 50 = 250) and the remaining 350 smaller firms would have two prototypes each (for a total

of 2 x 350 = 700); thus, the overall number of prototypes would be 250 + 700 = 950. The number of ticking substitutions would be 15 each for the larger firms (for a total of 15 x 50 = 750) and three each for the smaller firms (for a total of 3 x 350 = 1,050); the overall number of ticking substitutions would be 750 + 1,050 = 1,800.

At two packs of cigarettes per prototype and one pack per ticking substitution, the estimated quantity consumed in testing would be 2 x 950 = 1,900 for prototypes and 1,800 for ticking substitutions, for a total of 1,900 + 1,800 = 3,700 packs. At an increase of $6.50 per pack, the estimated total resource cost would be 3,700 x $6.50 = $24,050. This point estimate represents an unweighted average increase of about 3.5 percent of the estimated $707,500 aggregate annual industry testing costs related to 16 CFR part 1632. For annual production of about 25 million mattresses sold in the U.S., the estimated overall average cost is less than one-tenth of one cent per production unit. The recent reduction in the price of SRM 1196 cigarettes by about half from NIST reduces the estimated total cost from what was calculated for the proposed amendment by about two-thirds.

In addition to industry testing organizations, the CPSC and other government agencies (*e.g.*, the California Bureau of Home Furnishings & Thermal Insulation, the Canadian Ministry of Health) would likely purchase small quantities of SRM cigarettes from NIST for compliance testing and related research. Thus, these federal and other government agencies may incur minor costs, depending on the numbers of tests performed in any given year.

Staff recommends that the effective date of the amendment should be one year from the date of publication of a final amendment in the *Federal Register*. New mattress models typically are introduced once or twice per year. A 1-year effective date would allow this product cycle to proceed without disruption or additional testing costs.

In summary, the staff-recommended amendment to specify the SRM cigarette would not have a significant impact on expected benefits or costs of the 16 CFR part

1632 standard. Resource costs may amount to roughly $24,000 per year. The amendment would reduce test variability and uncertainty among manufacturers subject to the standard and among testing organizations. Both the expected benefits and likely economic costs are small, and the likely effect on testing costs per new prototype mattress or ticking substitution would be minor, especially when the projected cost is allocated over a production run of complying mattresses

Small Business Considerations

Under the Regulatory Flexibility Act (RFA, P.L. 96-354), the Commission is required to assess and consider whether rules may have a significant effect on a substantial number of small entities, including small businesses and small government entities. The Commission made a preliminary determination in the NPR that the SRM cigarette technical amendment, if issued on a final basis, would not be expected to have significant economic consequences on a substantial number of small entities. None of the NPR public comments took exception to the Commission's cost estimates of SRM cigarette use.

The staff-recommended amendment would keep the current mattress test procedure in place but would require that entities performing cigarette ignition tests (including the CPSC and other state agencies, as well as industry testing organizations) purchase and use SRM cigarettes at a higher cost than commercial, non-SRM cigarettes. No additional actions would be required of small entities. As discussed in the cost analysis section above, the costs would be borne by mattress manufacturers and importers that perform (or pay fees for) compliance testing. The estimated average increase in testing and certification costs is about $63 per small firm, or less than one cent per production unit. This represents less than one-hundredth of one percent of small firms' average gross revenues.

Thus, while almost all mattress manufacturers would be considered small firms under the U.S. Small Business Administration's fewer-than-500-employees definition,

the staff-recommended amendment would not have significant impacts on small firms. The design and construction of existing, compliant mattress products would remain unchanged, and the resource cost increase of using SRM cigarettes would represent a minimal increase in total testing costs.

Regulatory Alternatives

The Commission considered two basic alternatives to the staff-recommended amendment:

1. incorporate an SRM cigarette, with the approximate lower ignition strength of an RIP cigarette; or
2. take no action on the smoldering ignition source issue.

While neither of these two alternatives would likely have a substantial economic impact, there would be some relative differences in resource costs and some uncertainty about potential effects on the level of benefits afforded by the standard. The advantages and disadvantages of these two basic alternatives are discussed below.

Alternate SRM

Under this first alternative, the Commission could incorporate into the standard a different, lower ignition propensity SRM cigarette. The presumption would be that such an SRM would approximate the ignition strength of current "worst-case" RIP cigarettes.

Advantages:

- A lower PFLB SRM may offer repeatable performance, as would the SRM 1196 SRM in the amendment.
- An alternative SRM might better approximate the average ignition propensity of current commercial cigarettes.

- Currently, there is a low-ignition propensity SRM (1082) developed by NIST for use by state regulators in assessing the compliance of RIP cigarettes.

Disadvantages:

- There are no data to establish that a low-ignition propensity SRM would be equivalent or "safety-neutral." Additionally, the reliability of mattress test results may not be improved if, for example, only 50 percent of SRM cigarettes burned their full length. It is unknown whether more mattress construction prototypes would pass the test using a lower ignition propensity SRM than they do now with commercial cigarettes. Thus, the impact on mattress production costs is uncertain.
- Two known technical approaches to developing a lower ignition propensity SRM appear to be incompatible with the test in 16 CFR part 1632:
    - Under existing state regulations, all known commercial RIP cigarettes incorporate banded paper designed to impede full-length burns. The test in CFR part 1632 measures mattress ignitions resulting from full-length cigarette burns and it allows up to three re-lights per cigarette to achieve a full-length burn. It is likely that either: (a) many low-ignition propensity cigarettes would be wasted in completing the test; or (b) the test could not be completed reliably using banded-paper, self-extinguishing cigarettes.
    - While the existing SRM 1082 does not use banded-paper technology, its low-ignition propensity design is intended to yield a 12 percent to 15 percent PFLB; thus, the cigarettes should self-extinguish 85 percent to 88 percent of the time in NIST's qualifying test. Because this SRM is intended to be used as a calibration tool for cigarette manufacturers that are subject to state regulations, it is designed purposely to represent a minimal ignition propensity target, rather than a typical or representative, RIP ignition propensity. It would clearly not represent a "worst-case" RIP cigarette.
    - SRM 1082 does not meet the specified physical criteria for cigarette length and density, so these cigarettes are physically unlike the current test

cigarette or current RIP cigarettes. Moreover, the price of SRM 1082 is approximately $195 per carton, including shipping, compared to the $125 projected average price for SRM 1196.

- The properties of a new SRM that would mimic the ignition behavior of RIP cigarettes have not been characterized. Insufficient research exists to support a different, reduced-ignition propensity SRM of any given PFLB. The time and cost to develop a new SRM is undetermined, but the existing concern about the timely availability of a consistent ignition source would not be resolved.

Thus, while a lower ignition strength SRM cigarette may be technically feasible, there is no readily available SRM alternative that would address the need for a consistent, "safety-neutral" ignition source.

No Action

Under the second alternative, the test cigarette specifications in the standard would remain unchanged. Manufacturers and testers would remain free to conduct tests with any available cigarettes, including RIP Pall Malls, which meet the existing physical parameters.

Advantage:

- The projected minor increase in resource costs of testing would not be incurred.

Disadvantage:

- The basic issue of test result variability due to differences in cigarettes would not be addressed, and the uncertainty and confusion surrounding the reliability of 16 CFR part 1632 compliance tests would not be reduced. The actual range of PFLB performance of RIP cigarettes has not been established. Manufacturers and testing firms may continue to conduct tests that are either wasteful, in terms of extra RIP cigarettes required to complete a test, or have irreproducible results.

Summary Analysis of Public Comments

The Commission received five comments from interested parties in response to the November 2010 NPR. These included two from industry trade associations (the International Sleep Products Association (ISPA) and the National Textiles Association (NTA), one from a fire safety organization (the National Association of State Fire Marshals (NASFM), and two from consumers reporting no affiliations. Some comments pertained to the likely cost of the amendment, and some recommended that the Commission consider other, potentially lower cost alternatives. These economic issues are discussed below. Other comments discussed the general need for and suitability of SRM 1196 as an ignition source relative to other candidates; the agency previously received comments on this issue in response to the July 2009 publication of NIST Technical Note 1627.

Cost Impacts

Comment: One commenter (ISPA) noted that the testing and certification requirements of the Consumer Product Safety Improvement Act (CPSIA) would impose additional testing cost burdens on mattress manufacturers and that these additional CPSIA burdens would compound any cost increase related to an ignition source technical amendment to the standard.

Response: While the CPSIA may impose testing and certification costs on industry, both related and unrelated to the standard for flammability, the staff-recommended technical amendment would have a negligible effect on such costs. The staff-recommended amendment would increase estimated testing costs by about 3.5 percent, or about $24,000 per year; average increased testing costs for individual firms would range from about $45 to $162 per year. This assumes that testing would be performed largely by third party laboratories, as required under the CPSIA for regulated children's products only.

Comment: Three commenters (ISPA, Cloward, Whitson) expressed concern that mattress manufacturers would incur unwarranted or excessive production costs. One commenter (ISPA) indicated that the amendment could impose "major new costs" on firms whose products previously complied but had to be redesigned to pass the standard when tested with SRM 1196s.

Response: Because the staff-recommended technical amendment is intended to be "safety neutral," it would likely have no effect on the pass/fail performance of articles subject to the standard. Design and production costs would increase only if mattresses previously thought to comply failed the test with SRM cigarettes. There is no evidence from CPSC experience or data provided by industry that this would result, so long as the tests were conducted correctly with cigarettes that burn their full length. The approximately $24,000 annual cost of the SRM cigarettes represents a small increase in total testing costs, less than one cent per mattress produced under those tests.

Comment: One commenter (ISPA) suggested that under a 90 PFLB SRM, manufacturers would incur costs in order to produce mattresses that complied with tests using 100 PFLB cigarettes, so that the finished products would incorporate a reasonable "margin of safety" beyond the minimum requirements of the standard. The commenter stated that this was analogous to doubling the flame exposure time in the 16 CFR part 1633 open-flame test from 30 to 60 minutes.

Response: The staff-recommended amendment would more likely have the opposite result; that is, a more repeatable ignition source in the test should improve the reliability of the test results and lessen the need for manufacturers to build in a "margin of safety" to account for test variability. This comment appears to confuse the relationship between test material specifications and the stringency of the standard itself. The "margin of safety" built into the production of mattresses would ordinarily be related to the performance requirements prescribed in the standard for tested mattress samples. If, however, test results were unreliable due to the variability of the test cigarettes,

manufacturers might build mattresses that, for example, pass the test in more than the minimum number of locations, or exhibit shorter-than-required char length results. The SRM cigarette ignition source increases the likelihood of a successful test and enhances the repeatability of test results, and it decreases the number of retests necessary to determine compliance. A test cigarette that burns its full length would be acceptable for the test, whether it was a 90 PFLB SRM or a 50 PFLB SRM cigarette. Differences in the PFLB of test cigarettes are independent of the performance requirements of either of the two mattress standards.

Additional Alternatives

Comment: One commenter (ISPA) recommended that the Commission revoke 16 CFR 1632 entirely, instead of amending it, based on the conclusion that the 16 CFR 1633 open-flame standard adequately reduces the smoldering ignition risk, and in view of the recent decline in estimated cigarette fire losses. This comment recommended that the Commission assess the benefits and costs of the entire standard when making any changes, such as the SRM ignition source technical amendment.

Response: This staff-recommended amendment is limited to specifying an ignition source to allow timely, continued testing under the existing smoldering standard. The SRM cigarette amendment does not alter the test method and has no impact on the level of benefits or costs associated with the standard. The Commission, in a separate rulemaking, could consider whether to increase or decrease the stringency of the standard in view of experience with 16 CFR 1633, or based on new information that may be developed on the smoldering performance of mattresses.

Comment: One commenter (ISPA) recommended that the Commission complete research on a surrogate ignition source before proceeding with the SRM cigarette technical amendment.

Response: The SRM cigarette specified in the staff-recommended technical amendment will allow continued testing with a consistent-performing ignition source in order to yield repeatable test results and to avoid confusion among manufacturers and testing laboratories in establishing compliance with the Standard. Another, non-tobacco-containing ignition source may result from planned future research activity.

Conclusions

Under the CPSC staff-recommended SRM cigarette technical amendment, including its effective date:

- the current industry testing procedure would continue without interruption;
- uncertainty about the repeatability of test results would be reduced substantially;
- the effectiveness of the standard would be unaffected;
- aggregate testing costs to manufacturers and importers would increase by about $24,000 per year, a negligible amount; and
- there would be no significant impacts on small firms or other small entities.

TAB C:

Draft *Federal Register* Notice, Consumer Product Safety Commission, 16 CFR Part 1632 Standard for the Flammability of Mattresses and Mattress Pads: Technical Amendment

DRAFT 9-7-11

[Billing Code 6355-01-P]

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1632

CPSC Docket No. CPSC-2010-0105

Standard for the Flammability of Mattresses and Mattress Pads; Technical Amendment

AGENCY: Consumer Product Safety Commission.

ACTION: Final rule.

SUMMARY: The Consumer Product Safety Commission ("CPSC," "Commission," or "we") is amending its standard for the flammability of mattresses and mattress pads (16 CFR part 1632) to revise the ignition source specification in that standard. The ignition source cigarette specified for use in the mattress standard's performance tests is no longer produced. The Commission is requiring a standard reference material cigarette, which was developed by the National Institute of Standards and Technology, as the ignition source for testing to the mattress standard.

DATES: The rule will become effective on [**insert date 1 year after date of publication in the FEDERAL REGISTER**].

FOR FURTHER INFORMATION CONTACT: Allyson Tenney, Office of Compliance and Field Operations, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814-4408; telephone (301) 504-7567; atenney@cpsc.gov.

SUPPLEMENTARY INFORMATION:

A. Background

1. The Current Standard and the Need to Change the Ignition Source

The Standard for the Flammability of Mattresses and Mattress Pads ("the Standard"), 16 CFR part 1632, was initially issued by the U.S. Department of Commerce in 1972 under the authority of the Flammable Fabrics Act ("FFA"), 15 U.S.C. 1191 *et seq*. When the Consumer Product Safety Act ("CPSA") created the Consumer Product Safety Commission, it transferred to the Commission the authority to issue flammability standards under the FFA.

The Standard sets forth a test to determine the ignition resistance of a mattress or mattress pad when exposed to a lighted cigarette. Lighted cigarettes are placed at specified locations on the surface of a mattress (or mattress pad). The Standard establishes pass/fail criteria for the tests. Currently, the Standard specifies the ignition source for these tests by its physical properties. These properties were originally selected to represent an unfiltered Pall Mall cigarette, which was identified as the most severe smoldering ignition source.

In January 2008, we learned that the R.J. Reynolds Tobacco Company planned to stop producing unfiltered Pall Mall cigarettes (although it would continue to make a reduced ignition propensity or "RIP" version). CPSC staff, mattress manufacturers, and testing organizations were concerned about testing to the Standard if the specified ignition source cigarettes were unavailable. Under an Interagency Agreement ("IAG") with the CPSC, the National Institute of Standards and Technology ("NIST") developed a standard reference material ("SRM") cigarette that could be used as the ignition source in the Standard.

2**. NIST's Research**

Currently, the Standard requires that the ignition source for testing mattresses "shall be cigarettes without filter tips made from natural tobacco, 85 ± 2 mm long with a tobacco packing density of 0.270 ± 0.02 g/cm^3 and a total weight of 1.1 ± 0.1 g." 16 CFR 1632.4(a)(2). This specification was intended to describe a conventional unfiltered Pall Mall cigarette that was available when the Standard was developed. According to research conducted by NIST's predecessor, the National Bureau of Standards, in the 1970s, this specification was chosen in order to replicate the most severe smoldering ignition source for testing mattresses and mattress pads. (*See* Loftus, Joseph J., "Results of Temperature Measurements Made on Burning Cigarettes and Their Use as a Standard Ignition Source for Mattress Testing," NBS Memo Report, National Bureau of Standards, June 18, 1971: and Loftus, Joseph J., "Back-Up Report for the Proposed Standard for the Flammability (Cigarette Ignition Resistance) of Upholstered Furniture," PFF 6-76, NBSIR 78-1438, National Bureau of Standards, Gaithersburg, MD, June 1978.)

In January 2008, when we learned that R.J. Reynolds intended to stop producing the unfiltered Pall Mall cigarettes, we sought an alternate ignition source that would have the same burning characteristics as the ignition source specified in the Standard. Our intention has been to find a replacement ignition source that would replicate the level of safety of the ignition source specified in the Standard and would provide consistency in testing. Under this approach, the Standard would maintain the same level of safety, neither more nor less stringent. In August 2008, we entered into an IAG with NIST to develop a new cigarette ignition source SRM that would fit these parameters.

There are no cigarette ignition test data to characterize the ignition propensity of cigarettes from 1972, when the Standard was promulgated. In the absence of such data,

and consistent with the intent of the original Standard, NIST sought to identify the highest ignition strength cigarette. NIST evaluated Pall Mall cigarettes of different vintages (1992 through 2008) to determine the ignition strengths of the cigarettes that had been used to test soft furnishings, such as mattresses. The NIST research strongly indicated that the SRM is equivalent in ignition strength to the previous highest known strength unfiltered Pall Mall cigarette.

In June 2009, NIST provided us with a report on its research, "*NIST Technical Note 1627: Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes*" (Ref. 1). We used NIST's research as the basis to establish specific parameters for a new ignition source to be specified in the Standard.

After developing a standard procedure for determining the ignition strength of cigarettes and assessing different vintage cigarettes, NIST recommended that the new SRM cigarette meet the following specification:

- Nominal length: 83 mm ± 2mm;
- Tobacco packing density: 0.270 g/cm3 ± 0.020g/cm3;
- Mass: 1.1 g ± 0.1 g;
- Ignition Strength: 70 Percent Full Length Burn (PFLB) to 95 PFLB using ASTM E 2187, as modified in Section 4.2 of NIST Technical Note 1627; and
- Non- "Fire-Safe Cigarette" (FSC)

The first three descriptors restate the physical requirements listed in the Standard for the ignition source. The recommended ignition strength range reflects the three oldest vintages of the Pall Mall cigarette tested by NIST. These vintages reflect the intent of the Standard to represent a worst-case ignition source.

B. Statutory Provisions

The FFA sets forth the process by which we can issue or amend a flammability standard. In accordance with those provisions, we are revising the ignition source specification in the Standard to require that the SRM cigarette developed by NIST be used as the ignition source for testing under the Standard. As required by the FFA, we published a proposed rule containing the text of the ignition source revision, alternatives considered, and a preliminary regulatory analysis. 15 U.S.C. 1193(i). 75 FR 67047 (Nov. 1, 2010). To issue a final rule, the Commission must prepare a final regulatory analysis and make certain findings concerning any relevant voluntary standard, the relationship of costs and benefits of the rule (in this case, the ignition source revision), and the burden imposed by the rule. *Id.* 1193(j). In addition, the Commission must find that the rule: (1) is needed to adequately protect the public against the risk of the occurrence of fire leading to death, injury, or significant property damage; (2) is reasonable, technologically practicable, and appropriate; (3) is limited to fabrics, related materials, or products which present unreasonable risks; and (4) is stated in objective terms. *Id.* 1193(b).

The Commission also must provide an opportunity for interested persons to make an oral presentation concerning the rulemaking before the Commission may issue a final rule. *Id.* 1193(d). In the preamble to the proposed rule (75 FR at 67048), we requested that anyone who wanted to make an oral presentation concerning this rulemaking contact the Commission's Office of the Secretary within 45 days of publication of this notice. We did not receive any requests to make an oral presentation.

C. Response to Comments on the Proposed Rule

We published a notice of proposed rulemaking in the *Federal Register* on November 1, 2010. 75 FR 67047. We received five comments in response to the proposal. Two comments were from industry trade associations: the International Sleep Products Association ("ISPA") and the National Textile Association ("NTA"). Two comments were from individuals, and one comment was from the National Association of State Fire Marshals ("NASFM").

A summary of each of the commenter's topics is presented, and each topic is followed by our response. For ease of reading, each topic will be prefaced with a numbered "Comment"; and each response will be prefaced by a corresponding numbered "Response." Each "Comment" is numbered to help distinguish between different topics. The number assigned to each comment is for organizational purposes only and does not signify the comment's value or importance or the order in which it was received. Comments on similar topics are grouped together.

1. The Use of SRM 1196

(Comment 1) One commenter agreed that we should specify SRM 1196 and maintain the level of safety established by the original Standard, noting that "lowering the strength of the ignition source would be tantamount to a policy decision by CPSC to make the standard less effective, as it would reduce the level of resistance to smoldering ignition sources currently required of mattresses and mattress pads."

(Response 1) We agree that it is appropriate to specify SRM 1196 as the new ignition source for 16 CFR part 1632. Incorporation of this SRM would be "safety-neutral" and would not affect the stringency of the Standard.

(Comment 2) Two commenters stated that we should consider the 2007–08 non-RIP Pall Mall as the target for a "safety neutral" SRM cigarette because in NIST testing, it exhibited a 30 percent to 50 percent full-length burn (PFLB). They argued that we are effectively increasing the stringency of the Standard by using an SRM cigarette with a 90 percent PFLB.

(Response 2) The use of SRM 1196, which mimics the highest PFLB measured by NIST among commercial cigarettes (the 1992 Pall Mall), does not alter the intent of the Standard; rather, SRM usage ensures continuity of a reliably high PFLB with low variability in the ignition source. This approach is consistent with the intent of the Standard, and it means that the level of safety that the Standard has provided over the years will remain the same.

The consistently high PFLB of SRM 1196 (70 percent to 90 percent PFLB) is key to successful completion of the test to determine compliance with the Standard. To test the smoldering ignition of mattresses and mattress pads under 16 CFR part 1632, cigarettes are expected to burn their entire length. If a cigarette self-extinguishes during testing, it must be replaced with a cigarette in another location of the same type of construction feature. Tests using lower PFLB cigarettes would yield misleading results that do not reflect the performance of the mattress being tested. Further, using an SRM cigarette with a lower PFLB, such as the 2007–08 non-RIP Pall Mall, to meet the testing requirements of 16 CFR part 1632, would require using more cigarettes to complete the test, to the extent that self-extinguishing cigarettes would need to be replaced during the test. In some cases, it may be impossible to complete a test if the cigarettes self-extinguish consistently.

(Comment 3) Three commenters stated that we should allow unfiltered RIP Pall Malls or other lower heat- producing cigarettes that are commercially available on the market to be used for testing to 16 CFR part 1632.

(Response 3) The Standard does not require that a commercial cigarette be used; however, cigarettes that burn their full length are needed to complete the test. In 1972, the unfiltered, 85 mm Pall Mall was identified as the most severe ignition source among commercial cigarettes. SRM cigarettes, which are designed to exhibit consistent burning behavior, did not exist at that time. NIST's research demonstrates that the PFLB performance of commercial cigarettes is subject to significant variability that can lead to inconsistent test results. The use of SRM 1196, which mimics the highest PFLB measured by NIST among commercial cigarettes (the 1992 Pall Mall), does not alter the intent of the Standard; rather, SRM usage ensures continuity of a reliable ignition source with a high enough PFLB to allow for completion of the test.

(Comment 4) One commenter suggested that we had insufficient information to reject another existing SRM cigarette— NIST SRM 1082— (which is a RIP cigarette) as the ignition source in the Standard. The commenter argued that we should allow NIST SRM 1082 to be used in 16 CFR part 1632 instead of SRM 1196.

(Response 4) The purpose of specifying an SRM cigarette, which has been certified by NIST to meet specifications, is to enhance repeatability of smoldering ignition test results without changing the level of fire safety provided by the Standard.

State laws requiring "fire safe" cigarettes stipulate that such cigarettes meet an established cigarette fire safety performance standard, based on ASTM E2187, *Standard Test Method for Measuring the Ignition Strength of Cigarettes*. NIST SRM 1082 has a

12.6 ±3.3 percent PFLB and is intended for use by test laboratories to assess and control their test method and apparatus to evaluate cigarette ignition propensity of RIP cigarettes in accordance with ASTM E2187.

A cigarette with a low PFLB, like SRM 1082, would yield fewer successfully completed tests for purposes of part 1632, resulting in the use of more cigarettes to complete the test to determine compliance with the Standard. In addition, use of SRM 1082 would not represent a severe cigarette ignition source, and as such, would not be consistent with the original Standard.

(Comment 5) One commenter suggested that we move ahead with development of a surrogate smoldering ignition source that is not a cigarette.

(Response 5) SRM 1196 is a short-term solution to a longer-term issue. Anticipating the need for a longer-term solution, we have entered into a new Interagency Agreement with NIST to develop a surrogate ignition source. This project began in FY 2010.

(Comment 6) One commenter stated that SRM 1196 is an inappropriate ignition source for upholstery fabric.

(Response 6) This regulatory proceeding pertains only to 16 CFR part 1632, *Standard for the Flammability of Mattresses and Mattress Pads*. It does not apply to the Commission's upholstered furniture rulemaking (73 FR 11702 (March 4, 2008)).

2. The Effectiveness of Reduced Ignition Propensity (RIP) Cigarettes.

(Comment 7) Two commenters asserted that we did not properly consider the potential of RIP cigarettes in reducing cigarette-ignited fires.

(Response 7) We are very interested in evaluating the potential of RIP cigarettes to reduce cigarette-ignited fires when mattresses and mattress pads are the first item ignited. In FY 2007, we began work on a Cigarette Ignition Risk (CIR) project. The goal of the CIR project is to evaluate the change in the cigarette-ignited fire hazard presented by RIP cigarettes. This project was deferred in FY 2009 and FY 2010, due to resource constraints. We resumed the study in FY 2011. Results from the CIR study may inform the agency's development of a surrogate ignition source.

Although RIP cigarettes are designed to self-extinguish if left unattended, claims that RIP cigarettes actually reduce cigarette-ignited fires have not been substantiated by empirical state or national data. We have begun investigating the effect of RIP cigarettes but have no test data or epidemiological evidence demonstrating that RIP cigarettes decrease the number of reported incidences of smoldering ignitions of mattresses or mattress pads. We are not aware of any published studies on the effectiveness of RIP cigarettes that included testing of RIP and non-RIP cigarettes on commercially available mattresses, mattress pads, or mattress mock-ups. If the mattress industry has sufficient test data to support the hypothesis that RIP cigarettes consistently self-extinguish on 16 CFR part 1632- and part 1633-compliant mattresses, we would welcome the opportunity to review that information.

All 50 states and Canada have adopted pass/fail criteria that will allow no more than 25 percent of 40 tested cigarettes to burn their full length when tested in accordance with ASTM E2187; this means that 10 out of every 40 tested RIP cigarettes are allowed to burn their full length (*i.e.*, not self-extinguish). Although this does not mean that 25 percent of commercial RIP cigarettes would be expected to fail the test, it suggests that

zero PFLB is unlikely. The "worst-case" RIP cigarette would be one that burns its full length exactly like a non-RIP cigarette. Further, commercial RIP cigarettes could exhibit the same variability as observed among non-RIP cigarettes, thereby reducing reliability of test results.

(Comment 8) One commenter noted that the report from the National Fire Protection Association ("NFPA"), "The Smoking Material Fire Problem" (Hall, J.R. *The Smoking Material Fire Problem,* National Fire Protection Association. Sept. 2010. http://www.nfpa.org) stated that RIP cigarettes have the potential to reduce deaths and injuries from cigarette-caused fires by 56 to 77 percent, compared to 2003 levels. The commenter noted that this was not accounted for in the proposed rule.

(Response 8) The NFPA estimate is preliminary and will likely change when 2010 data are available. The NFPA report cited estimates that when fully effective, the RIP cigarette laws should result in a 56 percent to 77 percent reduction in smoking material fire deaths relative to 2003. NFPA produced this estimated range by comparing the National Fire Incident Reporting System ("NFIR") smoking material fire deaths estimate from 2003 (the last full year before the first state implemented a RIP cigarette law), to the estimate for 2008 (which is the most recent year for which it has estimates). NFPA's estimate incorporates a factor to adjust for the fact that only an estimated 21 percent to 29 percent of the population was under the RIP cigarette law in 2008. This method adjustment adds uncertainty to the estimate. Measuring the reduction in fire losses from 2003 to 2010 is more appropriate because in 2010, virtually 100 percent of the population was effectively covered by the law, and no mathematical projection would be necessary. Commission staff will use the 2010 estimate when it becomes available.

3. The Cost of SRM 1196

(Comment 9) Two commenters stated that specifying SRM 1196 as the new ignition source is not a modest change, and it may result in significant substantive changes to 16 CFR part 1632 that could impose major new costs on mattress manufacturers.

(Response 9) The purpose of SRM 1196 is to enhance repeatability and reproducibility of test results, without changing the level of fire safety. Since the time we issued the proposal, NIST has reduced the price of SRM 1196 from $239 for one carton to $239 for two cartons, and this price reduction should help alleviate some cost concerns. The total estimated annual cost of the technical amendment is approximately $24,000, or less than one cent per mattress produced under those tests. This does not represent a significant new cost to manufacturers. A discussion of the costs and benefits is found in the Directorate for Economic Analysis Report: *Final Regulatory Analysis: Smoldering Ignition Source Draft Proposed Technical Amendment to the Flammability Standard for Mattresses and Mattress Pads (16 CFR Part 1632).*

(Comment 10) One commenter noted that the testing and certification requirements of the Consumer Product Safety Improvement Act (CPSIA) would impose additional testing cost burdens on mattress manufacturers and that these additional CPSIA burdens would compound any cost increase related to revising the ignition source provision in the Standard.

(Response 10) Although the CPSIA may impose testing and certification costs on industry, both related and unrelated to the Standard, the revision to the ignition source provision would have a negligible effect on such costs. The revision will increase

aggregate estimated testing costs by about 3.5 percent, or about $24,000 per year; average increased testing costs for individual firms would range from about $45 to $162 per year. This assumes that testing would be performed largely by third party laboratories, as required under the CPSIA for regulated children's products only.

(Comment 11) Three commenters expressed concern that mattress manufacturers would incur unwarranted or excessive production costs. One commenter indicated that revising the ignition source provision could impose "major new costs" on firms whose products previously complied but had to be redesigned to pass the Standard when tested with SRM 1196.

(Response 11) Because the revision to the ignition source provision is intended to be "safety neutral," it would likely have no effect on the pass/fail performance of articles subject to the Standard. Design and production costs would increase only if mattresses previously thought to comply failed the test with SRM cigarettes. There is no evidence from CPSC experience or data provided by industry that this would result, so long as the tests were conducted correctly with cigarettes that burn their full length. The approximately $24,000 aggregate annual testing cost of the SRM cigarettes represents a small increase in total testing costs, ranging from about one-third to one cent per mattress produced under those tests.

(Comment 12) One commenter suggested that under a 90 PFLB SRM, manufacturers would incur costs in order to produce mattresses that complied with tests using 100 PFLB cigarettes, so that the finished products would incorporate a reasonable "margin of safety" beyond the minimum requirements of the Standard. The commenter

stated that this was analogous to doubling the flame exposure time in the 16 CFR part 1633 open-flame test from 30 to 60 minutes.

(Response 12) Specifying SRM 1196 as the ignition source would more likely have the opposite result; that is, a more repeatable ignition source in the test should improve the reliability of the test results and lessen the need for manufacturers to build in a "margin of safety" to account for test variability. The commenter may be confusing the relationship between test material specifications and the stringency of the Standard itself. The "margin of safety" built into the production of mattresses ordinarily would be related to the performance requirements prescribed in the Standard for tested mattress samples. If, however, test results were unreliable due to the variability of the test cigarettes, manufacturers might build mattresses that, for example, pass the test in more than the minimum number of locations or that exhibit shorter-than-required char length results. The SRM cigarette ignition source increases the likelihood of a successful test and enhances the repeatability of test results, and it decreases the number of retests necessary to determine compliance. A test cigarette that burns its full length would be acceptable for the test, whether it was a 90 PFLB SRM or a 50 PFLB SRM cigarette. Differences in the PFLB of test cigarettes are independent of the performance requirements of either of the two mattress standards.

4. The FFA, Regulatory Alternatives, and Other FFA Rulemakings

(Comment 13) One commenter argued that we failed to meet requirements of the FFA in proposing this amendment to 16 CFR part 1632. The commenter stated that section 4 of the FFA requires us to base our decision to amend our regulations on research and investigation, and the commenter felt that the proposal had failed to do this.

(Response 13) The proposed amendment is based on substantial research and investigation conducted by NIST. In August 2008, we entered into an IAG with NIST to develop a new cigarette smoldering ignition source. In June 2009, NIST provided a report on its research, "*NIST Technical Note 1627: Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes.*" The research described in this report was used to help develop SRM 1196. In July 2009, we posted NIST Technical Note 1627 on our website to keep stakeholders informed of the progress of this research and invite comments. We addressed the comments received on NIST Technical Note 1627 in CPSC staff's October 13, 2010, NPR Briefing Package, and the preamble to the proposed rule also discussed the comments (75 FR at 67049). In addition, the staff prepared initial and final regulatory analyses as required by section 4 of the FFA.

(Comment 14) The same commenter argued that we failed to consider all regulatory alternatives and other standards relevant to amending 16 CFR part 1632. Specifically, the commenter argued that we did not consider the extent to which 16 CFR part 1633 renders part 1632 redundant, despite the fact that we have issued an Advance Notice of Proposed Rulemaking (ANPR) to consider whether to revoke 1632 for this reason.

(Response 14) We have a separate proceeding (70 FR 36357 (June 23, 2005)) to consider whether to revoke 16 CFR part 1632. Issues related to the need for 16 CFR part 1632, in light of the existence of a separate mattress standard (16 CFR part 1633), are appropriate for that proceeding and therefore, are outside the scope of this rulemaking. This rulemaking is limited to revising the provision in 16 CFR part 1632 specifying the ignition source for the flammability test required in the Standard.

The Standard requiring mattresses to be resistant to cigarette ignition, 16 CFR part 1632, took effect in 1973. Although smoldering ignition of mattresses (*i.e.*, ignition from cigarettes) has declined since that time, mattress fires ignited by small open flames (such as lighters and candles) have continued to cause a significant number of deaths and injuries. In 2006, we published a flammability standard directed at the hazard of open-flame ignition of mattresses, 16 CFR part 1633, which took effect on July 1, 2007. In the course of the rulemaking to develop 16 CFR part 1633, industry questioned whether there would be overlap between the two mattress flammability standards, making continuation of 16 CFR part 1632 unnecessary. To examine the issue of possible overlap between the two standards, we published an ANPR for the possible revocation or amendment of 16 CFR part 1632, *Standard for the Flammability of Mattresses and Mattress Pads* in June 2005, and invited public comments (70 FR 36357 (June 23, 2005)). Some commenters supported revoking the Standard, while others recommended careful review of the risks, incident data, and benefits of the Standard before revocation is considered.

On October 20, 2005, the Sleep Product Safety Council ("SPSC"), which is a safety division of the ISPA, met with CPSC staff to discuss issues associated with the possible revocation or amendment of the Standard. At that meeting, ISPA/SPSC told us of its plans to work with NIST on a research project to determine whether 16 CFR part 1632 was needed once16 CFR part 1633 became effective. In addition, ISPA and the SPSC discussed plans for a research project with NIST to develop a predictive, small-scale test for 1632. (The meeting log is at http://www.cpsc.gov/library/foia/meetings/mtg06/MattressOct20.pdf. In 2009, ISPA ended the research project at NIST due to problems with controlling standard test

materials; the research was not completed, and no data were provided to CPSC from this project. At this time, we are not aware of data indicating that 16 CFR part 1633 eliminates or sufficiently reduces the risk of injury from cigarette ignition of mattresses, such that we could revoke 16 CFR part 1632.

(Comment 15) One commenter asserted that we misunderstand the purpose of 16 CFR part 1632 and that the rule should provide for an ignition source that represents cigarettes that are commercially available today.

(Response 15) The commenter misunderstands the limited nature of this rulemaking. Although we have authority to conduct the rulemaking that the commenter suggests, the FFA does not require it, and it would be a different proceeding altogether. In essence, the commenter wants us to reopen and reexamine the entire purpose of the Standard to see whether a different Standard or different level of protection should be in place than was established when the Standard was created in 1972. This approach would require reevaluation of the level of risk that exists from cigarette ignition of mattresses.

In this proceeding, we are simply specifying a substitute ignition source for the one that currently is specified but is no longer available; we are not changing the level of protection or reevaluating the current level of risk. As discussed in the previous response, the larger questions of the need for 16 CFR part 1632 and evaluation of the current level of risk posed by cigarette ignition of mattresses are outside the scope of this rulemaking.

(Comment 16) The same commenter suggested that we halt this proceeding and act on industry's request to revoke part 1632, issuing an interim rule to suspend part 1632.

(Response 16) The question of revocation or revision of 16 CFR part 1632 in light of 16 CFR part 1633 is the subject of a different rulemaking proceeding, and these issues are outside of the scope of this rulemaking. If commenters have any data relevant to that issue, they should provide it in connection with that rulemaking. In the meantime, 16 CFR part 1632 continues to be in effect. The ignition source specified in the Standard is no longer available. The purpose of this proceeding is to amend the Standard to specify a comparable ignition source so that reliable and representative testing can continue under the current Standard.

(Comment 17) One commenter stated that we did not consider the potential impact of our pending ANPR regarding the flammability of bedclothes.

(Response 17) On January 13, 2005, we published an ANPR (70 FR 2514) for a possible standard to address open-flame ignition of bedclothes. Because only an ANPR exists, there is no CPSC standard for the flammability of bedclothes. Therefore, there is no basis for us to consider the impact that such a standard might have on this rule.

D. Description of the Revised Ignition Source Provision

We are revising the ignition source provision in the Standard, 16 CFR § 1632.4(a)(2), to specify a standard reference material based on research conducted by NIST. The new SRM cigarette is designated SRM 1196. As discussed in section A.2 of this preamble, based on NIST's research, the new SRM cigarette meets the following specification:

- Nominal length: 83 mm ± 2mm;
- Tobacco packing density: 0.270 g/cm3 ± 0.020g/cm3;
- Mass: 1.1 g ± 0.1 g;

- Ignition Strength: 70 Percent Full Length Burn (PFLB) to 95 PFLB, using ASTM E 2187, as modified in Section 4.2 of NIST Technical Note 1627; and
- Non-"Fire-Safe Cigarette" (FSC).

Section 1632.4(a)(2) states that SRM 1196 is available for purchase from the National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, MD, 20899.

E. Final Regulatory Analysis

Section 4(j) of the FFA requires that the Commission prepare a final regulatory analysis when it issues a regulation under section 4 of the FFA and that the analysis be published with the rule. 15 U.S.C. 1193(j). The following discussion extracted from the staff's memorandum titled, "Final Regulatory Analysis: Smoldering Ignition Source Technical Amendment to the Flammability Standard for Mattresses and Mattress Pads (16 CFR Part 1632)" (Ref. 2), addresses this requirement.

1. Market/Industry Information

Available U.S. Economic Census data in recent years show an estimated total value of shipments of about $5 billion of mattresses and related sleep products (*e.g.*, mattress pads, box springs, innerspring cushions, and air-flotation sleep systems). Domestic employment for this category is estimated at about 20,000 workers. Industry estimates indicate that the number of mattresses (including unconventional items, such as futons, crib and juvenile mattresses, and sleep sofa inserts) shipped in the United States residential market is roughly 25 million units annually. About 5 to 10 percent of this total is comprised of imported products, including some imports marketed by the domestic manufacturers. The proportion of imports for mattress pads is higher.

An estimated 150 to 200 domestic firms produce new mattresses or mattress pads in manufacturing facilities in the United States. An unknown, but potentially similar, number of firms in the United States sell renovated mattresses, which may account for 2.5 million to 5 million units, or between 10 and 20 percent of mattresses sold. Thus, there may be as many as approximately 400 manufacturing firms subject to 16 CFR part 1632. These firms comprise more than 600 production establishments. Larger manufacturers may offer dozens of models, not counting different size designations (*e.g.*, twin, full, queen, king) at any given time; new models may be introduced once or twice per year. Many smaller firms market only a few models and make few, if any, construction changes in a year.

2. Potential Benefits and Costs

The SRM cigarette described in the revised ignition source provision would have approximately the same ignition strength characteristics as originally intended by the Standard. The use of SRM cigarettes would not alter the stringency of the flammability performance tests in the Standard, so the revised provision will not alter the test method itself.

a. Potential Benefits

Because the revised ignition source provision is "safety-neutral," mattresses that pass or fail under the existing Standard would be expected to generate similar results when the NIST-developed SRM is used. The level of protection provided by the Standard would neither increase nor decrease as a result. Thus, there would be no impact on the level or value of fire safety benefits derived from the 16 CFR part 1632 Standard.

However, there would be potential benefits that are not readily quantifiable. Currently, manufacturers and testing laboratories do not have access to continued supplies of test cigarettes other than RIP Pall Mall cigarettes. Existing inventories of conventional Pall Mall cigarettes have been depleted or exhausted. Many industry representatives have requested guidance on the issue of which cigarette to use in testing.

Even if continuing supplies of conventional test cigarettes were available, the variability in cigarette performance described in the NIST research may lead to an unacceptably low level of test outcome reproducibility. This is causing uncertainty among testing firms, and among manufacturers and importers certifying compliance with the Standard. These firms have expressed concern that tests conducted by the CPSC and by industry may not be comparable. This inconsistency could lead to unnecessary additional testing. Specifying the SRM cigarette would reduce inconsistency and uncertainty for industry, testing laboratories, and the CPSC.

b. Potential Costs

Currently, manufacturers incur testing costs related to 16 CFR part 1632 whenever new mattress models are introduced that either: (1) are of new construction, or (2) have new tickings that may influence cigarette ignition resistance. Larger manufacturers may introduce 20 or more new constructions or ticking substitutions each year. Smaller producers and renovators probably introduce fewer items or rely on prototype developers for multiple models. Assuming that qualified prototypes are developed for all new constructions and ticking substitutions to demonstrate compliance, a range of estimates for annual prototypes and ticking substitutions can be used to project

potential costs associated with the proposed amendment to incorporate SRM cigarettes into the Standard.

Pre-Amendment Testing Costs. For most mattress models that require some kind of testing, the testing cost per model to manufacturers is comprised chiefly of: (1) the resource costs of producing the mattresses used for destructive testing, including shipping to a test laboratory; and (2) the laboratory's fee for the testing service, which includes photographic and other records prepared by the test laboratory, as well as the cigarettes consumed in testing.

The cost of mattresses consumed in prototype testing may amount to approximately $400 for a typical two-mattress test series (although the range can go much higher, to more than $1,000 per mattress for low-volume, specialty items). Prototype test charges reported by third party testing laboratories can vary widely, especially by location. For example, charges for tests performed in China tend to be significantly lower than charges for tests performed in the United States. Overall, these charges, which include the cost of the test cigarettes, may average about $250 per prototype (labor and material costs for manufacturers to perform their own tests may be similar). Thus, the current average total cost per mattress prototype may be roughly $400 + $250 = $650. A ticking substitution test is simpler and much less expensive, requiring only small samples of ticking material, a reusable small-scale test apparatus, and a smaller number of cigarettes; the average total cost may be around $50.

Testing costs incurred for prototypes and ticking substitutions can be allocated over a production run of mattresses. The cost per unit may vary with production volume, the mix of tests performed, and other factors. The examples below incorporate

assumptions based on discussions with industry representatives. These examples illustrate some possible baseline cost differences for larger versus smaller firms:

Typical example for a medium-to-large producer:

- 20 new models: 5 new constructions + 15 new tickings
- 5 prototype tests @ $650 each = $3,250
- 15 ticking substitution classification tests @ $50 each = $750
- Total base year cost = $3,250 + $750 = $4,000
- Baseline testing cost for production run of 50,000 units = $0.08 per unit

Typical example for a smaller producer:

- 5 new models: 2 new constructions + 3 new tickings
- 2 prototype tests @ $650 each = $1,300
- 3 ticking substitution classification tests @ $50 each = $150
- Total base year cost = $1,300 + $150 = $1,450
- Baseline testing cost for production run of 5,000 units = $0.29 per unit

These examples reflect the likely average annual testing costs to industry, assuming reasonably full compliance with 16 CFR part 1632. Thus, approximate baseline testing costs for the largest 50 mattress manufacturers combined would be about 50 x $4,000 = $200,000 annually; testing costs for the remaining 350 firms would be about 350 x $1,450 = $507,500. Thus, total estimated baseline testing costs may be about $200,000 + $507,500 = $707,500 per year.

Costs Per Firm Associated With The Revised Ignition Source Provision. The only cost increase associated with revising the ignition source provision to specify SRM 1196 is related to the SRM cigarettes. The list price of SRM cigarettes from NIST is $239 for a two-carton minimum order, or about $120 per carton, plus shipping. A carton contains 200 cigarettes, or 10 packs of 20. Shipping charges range from $10 to $55 per order, or about $1 to $5 per carton for a typical 10-carton order. Thus, the estimated total average cost of the SRM cigarettes would be up to about $125 per carton. After we proposed the amendment to the Standard, NIST reduced the price of SRM 1196 by about half, to reduce the potential cost burden on industry. Testing laboratories and others can obtain (RIP) Pall Mall cigarettes currently on the market for regionally varying prices of $60 to $100 per carton. Thus, the cost of cigarettes to parties performing tests may rise from a level of approximately $6 to $10 per pack, to approximately $12.50 per pack, representing an increase of about $2.50 to $6.50 per pack.

Under the protocol in 16 CFR part 1632, new packs of cigarettes are opened for each test sequence. A new prototype or confirmatory test consumes about two packs, and a ticking substitution test consumes about one pack. Assuming an increased cost per pack of $12.50 – 6 = $6.50, the average cost of performing the tests could increase by 2 x $6.50 = $13 per prototype and $6.50 per ticking substitution. This represents a 2 percent increase ($13/$650) in average total resource costs per prototype, and a 12 percent increase ($6.50/$50) in average resource costs per ticking substitution.

In the above “typical producer” examples, the larger firm with 20 new models would incur increased prototype costs of 5 x $13 = $65, plus increased ticking substitution costs of 15 x $6.50 = $97.50, for a total annual increase of $65 + $97.50 =

$162.50 (about 4 percent of the firm's overall $4,000 annual testing cost). Over a 50,000 unit production run, the cost would be $0.003 (*i.e.*, about one-third of one cent) per unit. The smaller firm with five new models would incur increased prototype costs of 2 x $13 = $26 and increased ticking substitution costs of 3 x $6.50 = $19.50, for a total annual increase of $26 + $19.50 = $45.50 (about 3 percent of the firm's overall $1,450 annual testing cost). Over a 5,000 unit production run, the increased testing cost would be $0.009 (*i.e.*, about one cent) per mattress.

In summary, the expected additional cost of testing related to the revised ignition source provision may range from about $45.50 to $162.50 per firm. The cost over a production run could range from about one-third to one cent per mattress produced under those tests. The distribution of this projected cost among manufacturers and testing laboratories is uncertain because some test laboratories may choose to pass on their increased costs— in the form of higher test fees—to manufacturers, while others may not. Even if all such costs were passed on to manufacturers, it is unlikely that there would be a noticeable effect on wholesale or retail mattress prices.

Aggregate Costs Associated With Revising the Ignition Source Provision. There may be as many as 200 new product manufacturers and 200 renovators, for a total of about 400 firms. The largest 50 firms are assumed to have 20 new models (50 x 20 = 1,000 models to be tested), and the remaining 350 firms to have five new models (350 x 5 = 1,750 models to be tested), for a total of 1,000 + 1,750 = 2,750 models to be tested. The aggregate annual cost of specifying SRM 1196 as the ignition source in the Standard will vary with the number of new prototypes and ticking substitutions. A point estimate

can be developed using the pre-amendment baseline examples above and the best available information on these variables.

Using the baseline assumptions for new prototypes versus ticking substitutions, the 50 largest firms would have an average of five prototypes each (for a total of 5 x 50 = 250) and the remaining 350 smaller firms would have two prototypes each (for a total of 2 x 350 = 700); thus, the overall number of prototypes to be performed would be 250 + 700 = 950. The number of ticking substitutions would be 15 each for the larger firms (for a total of 15 x 50 = 750) and three each for the smaller firms (for a total of 3 x 350 = 1,050); the overall number of ticking substitutions would be 750 + 1,050 = 1,800.

At two packs of cigarettes per prototype and one pack per ticking substitution, the estimated quantity consumed in testing would be 2 x 950 = 1,900 for prototypes and 1,800 for ticking substitutions, for a total of 1,900 + 1,800 = 3,700 packs. At an increase of $6.50 per pack, the estimated total resource cost would be 3,700 x $6.50 = $24,050. This point estimate represents an unweighted average increase of about 3.5 percent of the estimated $707,500 aggregate annual industry testing costs related to 16 CFR part 1632. For annual production of about 25 million mattresses sold in the U.S., the estimated overall average cost is less than one-tenth of one cent per production unit. The recent reduction in the price of SRM 1196 cigarettes by about half reduces the estimated total cost from what was calculated for the proposed amendment by about two-thirds.

In addition to the projected costs to industry, the CPSC and other government agencies (*e.g.*, the California Bureau of Home Furnishings & Thermal Insulation and the Canadian Ministry of Health) would likely purchase small quantities of SRM cigarettes from NIST for compliance testing and related research. Thus, these federal and other

government agencies may incur minor costs, depending on the numbers of tests these organizations may perform in any given year.

The effective date of the rule is one year from the date of publication in the *Federal Register*. Typically, new mattress models are introduced once or twice per year. The effective date would allow this product cycle to proceed without potential disruption or additional testing costs.

In summary, revising the ignition source provision in the Standard to specify the SRM cigarette is not expected to have a significant impact on expected benefits or costs of the Standard in 16 CFR part 1632. Resource costs may amount to roughly $24,000 per year. The revision would, however, reduce test variability and uncertainty among manufacturers subject to the Standard and among testing organizations. Both the expected benefits and likely economic costs are small, and the likely effect on testing costs per new prototype mattress or ticking substitution would be minor, especially when the projected cost is allocated over a production run of complying mattresses.

3. Regulatory Alternatives

The Commission considered two basic alternatives: (1) specify a different SRM cigarette, with the approximate lower ignition strength of an RIP cigarette; or (2) take no action on the smoldering ignition source issue.

Neither of these two alternatives would likely have a substantial economic impact. There would, however, be some relative differences in terms of resource costs and potential effects on the level of benefits the Standard affords. The advantages and disadvantages of these two basic alternatives are discussed immediately below.

a. Alternate SRM

Under this first alternative, the Commission could amend the Standard to specify a different, lower ignition propensity SRM cigarette. Such an SRM would presumably be closer in ignition strength to the "worst-case" RIP cigarettes currently on the market.

There are three possible advantages to specifying an alternative SRM: (1) the problem of test repeatability and reproducibility would be addressed, as it is by specifying SRM 1196; (2) an alternative SRM might better approximate average ignition propensity of commercial cigarettes; and (3) currently, there is a low-ignition propensity SRM (SRM 1082) developed by NIST for use by state regulators in assessing the compliance of RIP cigarettes.

There are three possible disadvantages to specifying an alternative SRM. First, there are no data to establish that a low-ignition propensity SRM would be equivalent or "safety neutral." Moreover, the reliability of mattress test results may not be improved if, for example, only 50 percent of SRM cigarettes burned their full length. It is unknown whether more mattress construction prototypes would pass the test using a lower ignition propensity SRM than they do now with commercial cigarettes. Thus, the impact on mattress production costs is uncertain.

The second possible disadvantage is that the two known technical approaches to developing a lower ignition propensity SRM appear to be incompatible with the test in 16 CFR part 1632. Under existing state regulations, all known commercial RIP cigarettes incorporate banded paper that is designed to impede full-length burns. The test in 16 CFR part 1632 measures mattress ignitions resulting from full-length cigarette burns and allows up to three relights per cigarette to achieve a full length burn. It is likely that either: (1) many low-ignition propensity cigarettes would be wasted in completing the

test; or (2) the test could not be reliably completed using banded-paper, self-extinguishing cigarettes. Additionally, although the existing SRM 1082 (which represents a RIP cigarette) does not use banded-paper technology, it would have the same impracticalities as the banded-paper cigarette under the current Standard. The low ignition propensity design of the existing SRM 1082 is intended to yield a 12 to 15 percent full length burn rate (*i.e.*, the cigarettes are made to self-extinguish 85 to 88 percent of the time). Because this SRM is intended to be used as a calibration tool for cigarette manufacturers subject to state regulations, it is purposely designed to represent a minimal-ignition propensity target, rather than a typical or representative RIP-ignition propensity. Clearly, it would not represent a "worst-case" RIP cigarette. Further, SRM 1082 does not meet the specified physical criteria for cigarette length and density; so these cigarettes are physically unlike the current test cigarette or current RIP cigarettes.

The third possible disadvantage is that the properties of a new SRM that would mimic the ignition behavior of "worst case" RIP cigarettes have not been characterized. The "worst case" RIP cigarette would be one that burns its full length and may, therefore, be similar to its non-RIP counterpart. Insufficient research exists to support a new and different, low-ignition propensity SRM; and a variety of as-yet-unknown modifications to the test method in 16 CFR part 1632 would likely be needed to incorporate such an SRM. The time and cost to develop a new SRM is undetermined, but the existing concern about the short-term availability of a consistent ignition source would not be resolved.

Thus, while a lower ignition strength SRM cigarette may be technically feasible, there is no readily available SRM alternative that would address the need for a consistent, "safety-neutral" ignition source.

b. No Action

Under the second alternative, the ignition source specifications in the Standard would remain unchanged. Manufacturers and testers would remain free to conduct tests with any available cigarettes, including RIP Pall Malls, which meet the existing physical parameters.

The possible advantage of the Commission taking no action is that the projected minor increase in resource costs of testing would not be incurred.

The possible disadvantage of the Commission taking no action would be that the basic issue of test result variability due to differences in cigarettes would not be addressed, and the uncertainty and confusion surrounding the reliability of tests for compliance with 16 CFR part 1632 would not be reduced. Manufacturers and testing firms may continue to conduct tests that are either wasteful (in terms of extra RIP cigarettes required to complete a test) or have irreproducible results.

In summary, there are no readily available, and/or technically feasible, alternatives that would have lower estimated costs and still address the need for a consistent ignition source that retains the "safety-neutral" approach of the proposed amendment.

F. Regulatory Flexibility Act Certification

Under the Regulatory Flexibility Act ("RFA"), 5 U.S.C. 601 et seq., an agency that engages in rulemaking generally must prepare initial and final regulatory flexibility analyses describing the impact of the rule on small businesses and other small entities. Section 605 of the RFA provides that an agency is not required to prepare a regulatory

flexibility analysis if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

As discussed in the preamble to the proposed rule (75 FR at 67052-53), the Commission determined that, although almost all mattress manufacturers would be considered small firms under the U.S. Small Business Administration's fewer-than-500-employees definition, the proposal would have little or no effect on small producers. The design and construction of existing, compliant mattress products would remain unchanged, and the resource cost increase of using SRM cigarettes would represent a minimal increase in total testing costs. On this basis, the Commission preliminarily concluded that the proposed rule would not have a significant impact on a substantial number of small businesses or other small entities. We received no comments concerning the impact of the proposal on small entities, and we are not aware of any other information that would change the conclusion that the rule will not have a significant impact on a substantial number of small businesses or other small entities. In fact, after we published the proposed rule, NIST lowered the cost of SRM 1196.

This revision of the ignition source provision in the Standard would keep the current mattress test procedure in place but would require that entities performing cigarette ignition tests purchase and use SRM cigarettes at a higher cost than commercial, non-SRM cigarettes. No additional actions would be required of small entities. As discussed in the cost analysis section above, the costs would be borne by mattress manufacturers and importers that perform (or pay fees for) compliance testing. The estimated average increase in testing and certification costs is about $63 per small firm, or less than one cent per production unit. This represents less than one-hundredth of one

percent of small firms' average gross revenues. Thus, while almost all mattress manufacturers would be considered small firms, the ignition source revision would not have significant impacts on small firms.

G. Environmental Considerations

As noted in the preamble to the proposed rule (75 FR at 67053), the Commission's regulations state that amendments to rules providing performance requirements for consumer products normally have little or no potential for affecting the human environment. 16 CFR 1021.5(c)(1). Nothing in this rule alters that expectation. Therefore, because the rule would have no adverse effect on the environment, neither an environmental assessment nor an environmental impact statement is required.

H. Executive Orders

According to Executive Order 12988 (February 5, 1996), agencies must state in clear language the preemptive effect, if any, of new regulations. The rule will revise one provision of a flammability standard issued under the FFA. With certain exceptions that are not applicable in this instance, no state or political subdivision of a state may enact or continue in effect "a flammability standard or other regulation" applicable to the same fabric or product covered by an FFA standard if the state or local flammability standard or other regulations is "designed to protect against the same risk of the occurrence of fire," unless the state or local flammability standard or regulation "is identical" to the FFA standard. *See* 15 U.S.C. 1476(a). The rule would not alter the preemptive effect of the existing mattress standard.

Thus, the rule would preempt nonidentical state or local flammability standards for mattresses or mattress pads designed to protect against the same risk of the occurrence of fire.

I. Effective Date

Section 4(b) of the FFA (15 U.S.C. 1193(b)) provides that an amendment of a flammability standard shall become effective one year from the date it is promulgated, unless the Commission finds for good cause that an earlier or later effective date is in the public interest, and the Commission publishes the reason for that finding. Section 4(b) of the FFA also requires that an amendment of a flammability standard shall exempt products "in inventory or with the trade" on the date the amendment becomes effective, unless the Commission limits or withdraws that exemption because those products are so highly flammable that they are dangerous when used by consumers for the purpose for which they are intended. We conclude that a one-year effective date is appropriate to ensure ample time for the product cycle and continuing availability of SRM cigarettes from NIST. Therefore, the revised ignition source provision of the Standard will become effective one year after publication in the *Federal Register*.

J. Findings

Section 4(a), (b) and (j)(2) of the FFA require the Commission to make certain findings when it issues or amends a flammability standard. The Commission must find that the standard or amendment: (1) is needed to adequately protect the public against the risk of the occurrence of fire leading to death, injury, or significant property damage; (2) is reasonable, technologically practicable, and appropriate; (3) is limited to fabrics, related materials, or products which present unreasonable risks; and (4) is stated in

objective terms. 15 U.S.C. 1193(b). In addition, the Commission must find that: (1) if an applicable voluntary standard has been adopted and implemented, that compliance with the voluntary standard is not likely to adequately reduce the risk of injury, or compliance with the voluntary standard is not likely to be substantial; (2) that benefits expected from the regulation bear a reasonable relationship to its costs; and (3) that the regulation imposes the least burdensome alternative that would adequately reduce the risk of injury.

The scope of this rulemaking is limited to revising the ignition source provision in the Standard. The Commission is not making any other changes to the Standard. Therefore, the findings relate only to that revision and not to the entire Standard. These findings are discussed below.

The amendment to the Standard is needed to adequately protect the public against unreasonable risk of the occurrence of fire. The current Standard specifies as the ignition source cigarettes that are no longer being produced. In order for the Standard to continue to be effective (and for labs to test mattresses and mattress pads to determine whether they comply with the Standard), it is necessary to change the ignition source specification. The revision of this provision is necessary to ensure that testing is reliable and that results will not vary from one lab or manufacturer to another. Such variation would be likely if labs or manufacturers were able to use different ignition sources that have similar physical properties but different burning characteristics.

The amendment to the Standard is reasonable, technologically practicable, and appropriate. The revision to the ignition source provision is based on technical research conducted by NIST, which established that the SRM cigarette is capable of providing reliable and reproducible results in flammability testing of mattresses and mattress pads.

SRM 1196 represents an equivalent, safety-neutral ignition source for use in testing to establish compliance with the Standard.

The amendment to the Standard is limited to fabrics, related materials, and products that present an unreasonable risk. The revision of the ignition source provision will not make any changes to the products to which the Standard applies.

Voluntary standards. There is no applicable voluntary standard for mattresses. We are amending an existing federal mandatory standard.

Relationship of benefits to costs. Revising the ignition source provision in the Standard to specify SRM 1196 will allow testing to the Standard to continue without interruption, will maintain the effectiveness of the Standard, and will not significantly increase testing costs to manufacturers and importers of mattresses and mattress pads. Thus, there is a reasonable relationship between benefits and costs of the amendment. Both expected benefits and costs are likely to be small. The likely effect on testing costs would be minor, approximately one-third to one cent per mattress produced under those tests.

Least burdensome requirement. No other alternative would allow the Standard's level of safety and effectiveness to continue. Thus, the revision to the ignition source provision specifying SRM 1196 imposes the least burdensome requirement that would adequately reduce the risk of injury.

K. Conclusion

For the reasons discussed above, the Commission finds that revising the ignition source provision in the Standard (16 CFR part 1632) to specify SRM 1196 as the ignition source is needed to adequately protect the public against the unreasonable risk of the

occurrence of fire leading to death, injury, and significant property damage. The Commission also finds that the amendment to the Standard is reasonable, technologically practicable, and appropriate. The Commission further finds that the amendment is limited to the fabrics, related materials, and products that present such unreasonable risks.

L. References

1. Gann, R.G., and Hnetkovsky E.J., *Modification of ASTM E 2187 for Measuring the Ignition Propensity of Conventional Cigarettes,* Technical Note 1627, National Institute of Standards and Technology, Gaithersburg, MD, 20899, 2009.

2. Directorate for Economic Analysis Report, *Final Regulatory Analysis: Smoldering Ignition Source Technical Amendment to the Flammability Standard for Mattresses and Mattress Pads* (16 CFR part 1632).

List of Subjects in 16 CFR Part 1632

Consumer protection, Flammable materials, Labeling, Mattresses and mattress pads, Records, Textiles, Warranties.

For the reasons given above, the Commission amends 16 CFR part 1632 as follows:

PART 1632 – STANDARD FOR THE FLAMMABILITY OF MATTRESSES AND MATTRESS PADS (FF 4-72, AMENDED)

1. The authority citation for part 1632 continues to read as follows:

Authority: 15 U.S.C. 1193, 1194; 15 U.S.C. 2079(b).

2. Section 1632.4 is amended to read as follows:

Sec. 1632.4 Mattress test procedure.

(a) * * *

(2) *Ignition source*. The ignition source shall be National Institute of Standards and Technology ("NIST") Standard Reference Material ("SRM") 1196, available for purchase from the National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, MD 20899.

* * * * *

Dated: _____.

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Todd A. Stevenson, Secretary
Consumer Product Safety Commission