

Regulatory Review proceeding. In FR Doc. 04-6822, published in the **Federal Register** of April 1, 2004, the document incorrectly indicated that a new or modified information collection exists that requires approval by the Office of Management and Budget ("OMB"), and contained an incorrect **DATES** section. This document corrects the **DATES** section to read: **DATES**: Effective June 1, 2004.

Dated: September 9, 2004.

**Linda C. Chang,**

*Associate Division Chief, Mobility Division.*

[FR Doc. 04-20784 Filed 9-14-04; 8:45 am]

**BILLING CODE 6712-01-P**

## FEDERAL COMMUNICATIONS COMMISSION

### 47 CFR Part 73

[DA 04-2670; MM Docket No. 02-335; RM-10545]

#### Radio Broadcasting Services; Coopersville, Hart and Pentwater, MI

**AGENCY:** Federal Communications Commission.

**ACTION:** Final rule.

**SUMMARY:** This document denies a Petition for Reconsideration filed by Fort Bend Broadcasting Company directed to the *Report and Order* in this proceeding. See 69 FR 8334, February 24, 2004. With this action, the proceeding is terminated.

**DATES:** Effective September 15, 2004.

**FOR FURTHER INFORMATION CONTACT:** Robert Hayne, Media Bureau (202) 418-2177.

**SUPPLEMENTARY INFORMATION:** This is a synopsis of the *Memorandum Opinion and Order* in MB Docket No. 02-335 adopted September 1, 2004, and released September 3, 2004. The full text of this decision is available for inspection and copying during normal business hours in the FCC Reference Information Center at Portals II, CY-A257, 445 12th Street, SW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, Best Copy and Printing, Inc., 445 12th Street, SW., Room CY-B402, Washington, DC 20554, telephone 1-800-378-3160 or [www.BCPIWEB.com](http://www.BCPIWEB.com). The Commission will not send a copy of this *Memorandum Opinion and Order* pursuant to the Congressional Review Act, see 5 U.S.C. 801(a)(1)(A), because this document denied the petition for reconsideration.

Federal Communications Commission.

**John A. Karousos,**

*Assistant Chief, Audio Division, Media Bureau.*

[FR Doc. 04-20788 Filed 9-14-04; 8:45 am]

**BILLING CODE 6712-01-P**

## DEPARTMENT OF TRANSPORTATION

### National Highway Traffic Safety Administration

#### 49 CFR Part 571

[Docket No. NHTSA 2004-19032]

RIN 2127-AG36

#### Federal Motor Vehicle Safety Standards; Power-Operated Window, Partition, and Roof Panel Systems

**AGENCY:** National Highway Traffic Safety Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This final rule amends our standard for power-operated windows, partitions, and roof panel systems to require that switches for these windows and other items in new motor vehicles be resistant to accidental actuation that causes those items to begin to close. The purpose of this amendment is to reduce the number of injuries and fatalities to people, especially children, that occur when they unintentionally close those power-operated items on themselves by accidentally leaning against or kneeling or standing on the switch or when other occupants accidentally actuate the switch in that manner.

There are simple, effective and inexpensive manufacturing solutions that vehicle manufacturers can use to meet the requirements of this final rule. Vehicle manufacturers could comply by shielding or recessing their switches or by designing them so that pressing on them in the manner described above will not cause these windows and other items to begin to close.

Although they need not do so, manufacturers may choose instead to address the problem through the use of more advanced technology. Manufacturers that install power-operated windows, partitions or roof panel systems meeting the automatic reversal requirements of the standard need not comply with the requirements of this final rule.

In this document, the agency is also denying two petitions for rulemaking requesting that the agency require power windows in new vehicles to be equipped with an automatic reversal system or other anti-entrapment feature.

**DATES:** *Effective Date:* The amendment made in this final rule is effective November 15, 2004.

*Compliance Date:* This final rule becomes mandatory for all vehicles manufactured for sale in the U.S. on or after October 1, 2008. Voluntary compliance is permitted before that date.

*Petitions:* If you wish to submit a petition for reconsideration for this rule, your petition must be received by November 1, 2004.

**ADDRESSES:** Petitions for reconsideration should refer to the docket number above and be submitted to: Administrator, Room 5220, National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, DC 20590.

See the **SUPPLEMENTARY INFORMATION** portion of this document (Section X; Rulemaking Analyses and Notice) for DOT's Privacy Act Statement regarding documents submitted to the agency's dockets.

**FOR FURTHER INFORMATION CONTACT:** For non-legal issues, you may call Mr. Michael Pyne, Office of Crash Avoidance Standards (Telephone: 202-366-2720) (Fax: 202-366-4329).

For legal issues, you may call Mr. Eric Stas, Office of the Chief Counsel (Telephone: 202-366-2992) (Fax: 202-366-3820).

You may send mail to these officials at National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, DC 20590.

#### SUPPLEMENTARY INFORMATION:

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## I. Executive Summary

This final rule amends Federal Motor Vehicle Safety Standard No. 118, *Power-Operated Window, Partition, and Roof Panel Systems*, to add a requirement for new vehicles that will make switches for those systems resistant to accidental actuation, particularly by children.<sup>1</sup> These amendments to the standard apply to passenger cars, multipurpose passenger vehicles, and trucks with a gross vehicle weight rating (GVWR) of 4,536 kg (10,000 lbs.) or less.<sup>2</sup>

Available information indicates that a small, but persistent problem of injuries and fatalities are occurring when vehicle occupants (particularly young children) unintentionally close power windows on themselves or other occupants when they accidentally actuate power window switches by leaning against or kneeling or standing on them. Although these power window incidents are generally low-frequency events, averaging about 1.5 deaths per year in recent years (1999–2002), there is a higher incidence in some individual years (e.g., five deaths of this type were recorded in 1998, and a similar number have been reported in 2004).

These tragic incidents continued to occur despite other safeguards in the standard (i.e., requirement in S4 that power windows will only operate when the key is in the ignition<sup>3</sup> or when the presence of an adult can be presumed for some other reason, e.g., the key has been removed, but neither vehicle front door has been opened since the removal of the key).

Research has led the agency to conclude that switch design is related to such injuries. In the accidental actuation incidents for which the type of switch is known, virtually all of the vehicles involved had “rocker” and “toggle” switches, which are much more prone to accidental actuation as compared to pull up-push down type switches that must be lifted to close the

window.<sup>4</sup> If the accidental pressure of a knee, foot or elbow actuated a pull up-push down switch, it would cause the window to open, not close. Rocker and toggle switches are also much more prone to accidental actuation if they are not shielded or recessed so that they cannot readily be contacted by a foot, knee or elbow.

Accordingly, the agency has decided to amend FMVSS No. 118 by adding a new paragraph S6, specifying that power window switches in new motor vehicles subject to the standard must pass an accidental actuation test that uses a test device simulating a child’s knee. The test device is a hemisphere with a smooth, rigid surface and a radius of 20 mm ± 1 mm. When the test device is applied with a force not to exceed 135 Newtons (30 lbs.) to any switch or the housing surrounding a switch that can be used to close a power-operated window, partition, or roof panel, such application must not cause the window, partition, or roof panel to begin to close.

The accidental actuation test in S6 does not apply to switches that are both roof-mounted and incapable of “one-touch” closure. In addition, they do not apply to power-operated systems that meet the automatic reversal requirements of S5 of the Standard. We note that while a number of vehicles have automatic reversal systems, we are not aware of any that are certified to meet the requirements of S5. However, we believe that exclusion from the accidental actuation test in S6 would be appropriate for any such systems, because either inadvertent actuation would not occur or entrapment would be prevented by the system.

We believe that the accidental actuation test in S6 provides a simple and effective means of evaluating power window systems and will enhance the protection of people, especially children, thereby furthering NHTSA’s mission of preventing motor vehicle-related deaths and injuries. We estimate that, on average, at least one child fatality and one serious injury (e.g., brain damage from near suffocation) per

year could be prevented by the requirements of this final rule. The agency believes that this estimate is conservative because, in making our estimate, we excluded cases in which more than one child was in the vehicle (because both inadvertent switch actuation and intentional switch actuation are possible causes of the injury in those cases) and cases in which the type of switch was unknown. If further information on these cases were available, it might indicate that the estimated benefits should be higher.

There are simple, effective, and inexpensive manufacturing solutions that vehicle manufacturers can use to meet the requirements of this final rule. Vehicle manufacturers could comply by shielding or recessing their switches or by designing them so that pressing on them in the manner described above will not cause these windows and other items to close. Many vehicles already incorporate those solutions.

Although they need not do so, manufacturers may choose to address the problem through more advanced technology. Manufacturers need not comply with the new requirement if they use power-operated windows, partitions or roof panel systems meeting the automatic reversal requirements of the standard.

All new light vehicles produced on or after October 1, 2008, for sale in the U.S. must comply with the amended power window switch requirements in this final rule. The agency believes that this four-year lead time will allow manufacturers to incorporate the required changes into their vehicles in accordance with their normal production cycles. As a result, the cost impacts of this rule should be close to zero.

Further, this document denies two petitions for rulemaking requesting that the agency mandate the installation of automatic reversal systems that comply with the requirements of S5 in all new vehicles. We have reached this decision because much of the potential benefit that might be provided by those systems will instead be provided by the accidental actuation test. Further, while the cost of better switches will be negligible, the cost of automatic reversal systems is significant.

## II. Background

### *Requirements of FMVSS No. 118*

Federal Motor Vehicle Safety Standard (FMVSS) No. 118, *Power-Operated Window, Partition, and Roof Panel Systems*, regulates power-operated windows, partitions, and roof panels by specifying requirements to

<sup>1</sup> We note this rulemaking does not address incidents in which one occupant intentionally operates the switch by hand and either knowingly or unknowingly entraps another person.

<sup>2</sup> For the sake of simplicity, the preamble to this final rule collectively refers to these three types of systems—power windows, interior partitions, and power roof panels (sunroofs)—as “power windows,” all of which are covered by FMVSS No. 118. Power roof panels and partitions are similar to power windows in their operation. However, any distinctions in applicability among the three types of systems will be delineated clearly in both the preamble and the amended regulatory text.

<sup>3</sup> In adopting that provision, the agency reasoned that the key would normally be in the ignition only if the driver were still in or near the vehicle, and thus in a position to supervise the operation of the vehicle windows.

<sup>4</sup> “Rocker” switches are designed to pivot on a center hinge, effectively operating like a “see-saw.” “Toggle” switches operate using small levers that push back and forth to open and close a window. As a result of their design, downward pressure (e.g., caused by a child kneeling or leaning) on a rocker or toggle switch could result in a window’s either opening or closing, depending upon how such force is applied.

In contrast, “push-pull” switches function such that pressing down on the switch will only cause the window to open, but the switch must be actively pulled up in order to close the window. Thus, accidental pressing with a hand, knee or foot on a push-pull switch could not cause a window to close, although it might cause it to open.

reduce the likelihood of death or injury from their accidental operation. As a matter of particular concern, the standard addresses the threat to unsupervised children of being strangled or suffering limb-crushing injuries by closing power windows. The standard applies to passenger cars, multipurpose passenger vehicles, and trucks with a gross vehicle weight rating (GVWR) of 4,536 kg (10,000 lbs.) or less.

When the standard was first adopted, it required that activation of power windows be linked to the vehicle's ignition lock. The standard prohibited activation of power windows unless the vehicle's ignition was turned to the "On," "Start," or "Accessory" position. The agency presumed that making the presence of the ignition key a precondition to power window activation would help ensure that a driver would be present to provide adult supervision and also would provide a simple means of disabling the power windows in a parked vehicle (*i.e.*, key removal).

Since its initial adoption, FMVSS No. 118 has undergone periodic revision in order to accommodate technological developments related to power window systems. For example, the standard has been amended to permit power windows to close in certain situations in which the key is not in the ignition, but the existence of adult supervision could be presumed for other reasons (*see* section S4 of FMVSS No. 118).

In the most recent rulemaking, which was in 1991, NHTSA responded to the interest of manufacturers in offering remote controls for window closing (*see* 56 FR 15290 (April 16, 1991)). When amending the standard, the agency was mindful that the unrestricted allowance of remote controls, especially ones that activated windows using radio frequency signals that can penetrate obstructing walls, could pose a danger to child occupants because the person activating the window might not be able to see a child in the window opening. Therefore, to help ensure the proximity of a supervising person, the agency amended the standard to permit power windows to be operable through the use of remote controls only if the controls had a very limited range (*i.e.*, not more than 6 meters (m) (20 ft)). A longer range, up to 11 m (36 ft), was permitted for controls that were operable only if there were an unobstructed line of sight between the control and the vehicle.

Another condition enumerated in section S4 allows power windows to operate in the interval after ignition key removal but before either front door of the vehicle is opened. Another condition allows windows to close by

use of a key lock on the outside of the vehicle. Windows are also permitted to close if they initially are open only 4 mm (0.16 in) (*i.e.*, to facilitate closing of doors on a vehicle with an air-tight occupant compartment).

Section S5 makes an exception to the allowable conditions for power window operation listed in section S4 if the vehicle is equipped with an automatic reversal or "anti-entrapment" feature that complies with specified operational force levels. In adopting this exception, the agency reasoned that the provisions permitting remote control of a power window need not be premised on the likely proximity of supervision, if the window closing system itself could sense the child's hand or head when it became trapped between the window and the window frame, and thereupon stop and reverse to release the child. Therefore, the agency established a provision permitting power windows equipped with an automatic reversal system to be closed in any manner (*e.g.*, with or without a key) desired by the manufacturer. It also permitted remote controls of unrestricted range, as well as new products (*e.g.*, devices to open and close windows automatically in response to heat and rain), if there is an automatic reversal system.

However, we note here that the present rulemaking action was deemed necessary because deaths and serious injuries involving power windows continue to occur, despite the safeguards already incorporated in the standard. The complete success of the earlier safeguards is dependent on children not being left unattended in vehicle, or, if they are, on removal of the ignition key. However, power window injuries and fatalities are occurring in cases where children were left alone in vehicles with keys in the ignition. These tragic injuries and loss of life could have been prevented if a supervising adult had removed the key from the ignition, but the persistent recurrence of such incidents involving children have led us to the conclusion that the additional protections set forth in this rulemaking are necessary.

#### *Power Window Switches in Motor Vehicles*

Prior to the amendments contained in this final rule, FMVSS No. 118 has not regulated the switches provided in motor vehicle occupant compartments for operating power windows. In vehicles equipped with power windows, those switches generally are of three types: (1) "Rocker" switches, (2) "toggle" switches, and (3) "push-pull" switches.

Power windows with rocker switches, which are very common in current motor vehicles, are particularly susceptible to inadvertent closure because almost any contact with the switch can cause the window to operate. Power windows with toggle switches are similarly susceptible to inadvertent actuation.

In contrast, power windows operated by push-pull (fishhook-style) switches are considered resistant to inadvertent closure because incidental contact with those switches will not readily cause a window to begin to close, although it may cause a window to open. Only by actively pulling upwards on push-pull switches is it possible to operate such windows in the closing direction.

Protection from inadvertent actuation of power windows also may depend on switch location and orientation in a vehicle. For example, a rocker switch that is set into a recess on a vertical door panel is inherently less susceptible to casual contact by occupants, especially a child standing or kneeling on a door armrest while being partially extended outside of the open window, than is a switch mounted flush on a horizontal surface. Likewise, console-mounted switches for sunroofs are very susceptible to inadvertent actuation as compared to switches located on the vehicle's headliner, because a child attempting to look out of an open sunroof would very likely stand on the console to do so.

### **III. Petitions for Rulemaking**

#### *The Moore Petition*

On September 26, 1995, Michael Garth Moore, an attorney in Hilliard, Ohio, submitted a petition for rulemaking<sup>5</sup> to NHTSA requesting that the agency amend FMVSS No. 118 in two areas. First, the petitioner asked the agency to require that all power windows be equipped with an anti-entrapment safety feature, so that a vehicle's windows would stop and reverse direction if they were to encounter an obstruction while closing.

In his petition, Mr. Moore stated that automatic reversal technology is of proven effectiveness and is economically feasible for mandatory installation. The petitioner further stated that, while it was difficult to determine the magnitude of child injuries and fatalities related to power windows, the prevention of even one

<sup>5</sup> Docket No. NHTSA-2004-17216-21. (The original docket number for this rulemaking was Docket No. NHTSA-96-117. However, with the advent of NHTSA's electronic docketing system, available at <http://dms.dot.gov/>, all relevant materials discussed in this notice have also been included in Docket No. NHTSA-2004-17216.)

catastrophic incident warranted action, given the minimal costs associated with such a requirement.

However, the agency denied that request primarily because of its high cost, and for other reasons associated with the limitations of force-sensing automatic reversal systems (discussed in further detail subsequently).

Second, the petitioner requested that the agency modify FMVSS No. 118 to prevent the inadvertent closure of power windows by requiring manufacturers to protect switches from unintended operation either by shielding them or by placing them in a less accessible location (e.g., in a recess in a door panel). In addition, Mr. Moore asked that manufacturers be required to design switches such that "downward pressure on any control can only cause the window/partition/roof panel to open," thereby preventing inadvertent closure. The petitioner argued that such a requirement would protect a child left in a vehicle with its ignition enabled, because the child would no longer be at risk of inadvertently closing a power window merely by kneeling or standing on a power window switch.

NHTSA granted that portion of the Moore petition related to safer power window switches. Accordingly, the agency initiated rulemaking on this topic, as discussed in further detail below.

#### *The Little Petition*

On January 13, 2003, David W. Little, an attorney in Oklahoma City, Oklahoma, submitted a petition for rulemaking<sup>6</sup> to NHTSA requesting essentially the same rulemaking actions contained in the Moore petition. Mr. Little represented the families of five victims of power window accidents, and he petitioned the agency on behalf of the Zoie Foundation. The Little petition sought to amend FMVSS No. 118 to require that all new U.S. vehicles be equipped with automatic reversal systems and with power window switches that are resistant to inadvertent actuation.

To supplement his petition, Mr. Little provided a "sampling" of cases, including various records such as death certificates, coroners' reports, and police investigation reports for five instances of children either severely injured or killed by power windows. In addition, the petitioner provided news articles, copies of comments to NHTSA's public docket, and manufacturers' information on automatic reversal systems (e.g., information from Brose and Omron). The Little petition also included a

listing of consumer complaints through February 1996 from NHTSA's Office of Defects Investigation (ODI) database, which reported 107 power window complaints; twelve of these complaints involved entrapment, out of about 350,000 total consumer complaints. These complaints included some severe injuries (e.g., limb amputation) and fatalities, several of which involved children.

We decided to address the Little petition in this document.

#### *The Center for Auto Safety Petition*

On August 19, 2003, a coalition of petitioners consisting of the Center for Auto Safety (CAS), Public Citizen, Kids and Cars, Advocates for Highway and Automotive Safety, the Consumer Federation of America, Consumers for Auto Reliability and Safety, the Zoie Foundation, and the Trauma Foundation, submitted a petition for rulemaking<sup>7</sup> (hereinafter referred to as the CAS petition) to NHTSA requesting essentially the same rulemaking actions contained in the earlier Moore and Little petitions.

The CAS petition discussed the history of the agency's power window rulemaking in some detail, and it included a list of 33 fatalities (all children) killed in power window accidents since FMVSS No. 118 first took effect in 1971. In its petition, CAS stated, "More power window deaths have been recorded in the last two years than in any other two-year period since 1971." CAS claimed that the rate of power window accidents has increased as power windows have proliferated, stating that the 18 fatalities recorded in the last seven years are more than the 15 fatalities recorded over the previous 25 years. CAS provided data indicating that power window installations on North American-produced vehicles numbered 1.9 million in 1971 (19.2 percent of the market), but grew to 7.9 million (62 percent of the market) in 1994.

In support of its requests, CAS mentioned a 1997 NHTSA technical report that extrapolated from 10 actual cases of power window-related injuries and estimated that annually, there are 499 power window-related incidents nationwide that result in emergency room visits.<sup>8</sup> That report included incidents of both inadvertent and intentional actuation of power window switches. The report found that most of these injuries were minor (i.e., 91% of

those injured persons were treated and released without hospitalization), and none of the actual 10 cases involved a fatality.

The CAS petition also argued that with an automatic reversal system in place, defects in power windows could be prevented from becoming deadly. Petitioners provided the example of three child fatalities associated with a defect case involving Model Year 1982–1986 Jeep Wagoneers, which, in certain cases, the failure of a key-operated switch on the tailgate caused the tailgate windows to close uncontrollably. The CAS petition argued that injuries and fatalities in the Wagoneer cases could have been prevented, had the vehicles been equipped with power window automatic reversal systems.

The CAS petition also suggested that other power-operated features, such as power sliding doors on minivans, are similarly likely to proliferate. Accordingly, CAS and the other petitioners urged NHTSA to be proactive in this area by establishing safety performance standards to protect children from entrapment and injury.

In addition, the CAS petition argued that automatic reversal technology for power windows is both available and sufficiently inexpensive to be mandated in new vehicles. The petition cited a letter from Nartron Corp. estimating the cost for a proprietary anti-entrapment automatic reversal system using capacitive sensing technology to be \$12.50 per vehicle window. The CAS petition analogized the technology for power window automatic reversal systems to that which the Consumer Product Safety Commission (CPSC) has required on residential garage door-closing systems since 1991. CAS stated that the CPSC standard was later upgraded in 1993 and now requires automatic garage door to have two types of sensors to prevent bodily entrapment (e.g., pressure sensors on their leading edge and "electronic eyes").<sup>9</sup>

We decided to address the CAS petition in this document.

#### **IV. Notice of Proposed Rulemaking (NPRM) and Public Comments**

##### *The NPRM*

On November 15, 1996, NHTSA published a notice of proposed rulemaking (NPRM) in the **Federal Register** (61 FR 58504) proposing to amend FMVSS No. 118 to require each power-operated window, interior partition, and roof panel in a motor vehicle to be equipped with a switch designed so that contact by a form

<sup>7</sup> Docket No. NHTSA-2004-17216-19.

<sup>8</sup> "Injuries Associated With Specific Motor Vehicle Hazards: Radiators, Batteries, Power Windows, and Power Roofs," (DOT 808 598) (July 1997) (Docket No. NHTSA-2004-17216-29).

<sup>9</sup> See 16 CFR Part 1211 (CPSC Safety Standard for Automatic Residential Garage Door Operators).

<sup>6</sup> Docket No. NHTSA-2004-17216-20.

representing a child's knee would not cause inadvertent closure.

As noted previously, in the NPRM, the agency denied the Moore petition's request to require that all power windows be equipped with an automatic reversal feature. NHTSA concluded that such a requirement would be unreasonably expensive (*i.e.*, costing approximately \$100 per window or \$400 per vehicle) and not practicable with the technology (*i.e.*, force-sensing) then in existence (*e.g.*, such devices prevent reliable window closure in the presence of snow, ice, and even the friction of cold or tight weather stripping). The reasoning for the agency's denial of the request for an automatic reversal requirement was explained in detail in the NPRM (*see* 61 FR 58504, 58505–06).

However, the agency decided to grant the petitioner's request to initiate rulemaking to amend FMVSS No. 118 in other ways (*e.g.*, shielding switches and using switches that, if accidentally leaned on, would open, not close windows) to provide additional protection from inadvertent closure of power windows. At the time of the NPRM, NHTSA recognized the potential safety problem raised in the Moore petition and had collected a number of anecdotal reports of power window injuries and fatalities. In light of the anticipated safety benefits associated with remedying this problem, NHTSA decided to issue an NPRM proposing new switch requirements. Specifically, the agency proposed that if a switch used to close a power-operated window is contactable by a rigid spherical ball 25 mm (1 inch) in diameter, pressing that ball in a nondestructive way against the switch in any direction must not cause the window to begin to close. A 25 mm (1 inch) ball was considered by the agency to be generally representative of the bent knee of a child under the age of six.

The agency proposed this amendment for several reasons, as explained in the NPRM. First, the agency stated its belief that the proposed requirements would offer a safety benefit in reducing the number of fatalities and injuries resulting from inadvertent closure of power windows. The information available to NHTSA demonstrated that such injuries were occurring, and children's natural curiosity, coupled with the ongoing problem of children being left unsupervised in vehicles, suggested that the problem would be likely to continue absent regulatory intervention.

Further, the agency expressed its belief in the NPRM that the proposed requirement would be practicable and

would result in very little cost burden on vehicle manufacturers, particularly if sufficient lead time were provided. The required switch modifications could be achieved merely by changing the shape of the switches and/or the surrounding housing and would not affect any other aspects of the operation of the power windows. In addition, the agency noted in the NPRM that several major vehicle manufacturers already had incorporated push-pull switches or recessed switches across all or some of their model lines.

#### *Public Comments on the NPRM*

##### Overview

Comments on the NPRM were received from 14 entities, including a consumer advocacy group, trade associations, automobile manufacturers, a manufacturer of power window equipment, and a law firm, as well as one individual.<sup>10</sup>

Commenters expressed an array of views on the NPRM, ranging from support to opposition. Commenters opposing the proposed amendment claimed that the agency had not conducted a sufficiently methodical effort to quantify the alleged safety problem or to identify the types of switches involved in the few known cases of death or serious injury. Generally, these commenters argued that existing safety measures (*i.e.*, requiring keys to be in the ignition in order for the power windows to operate) are adequate. They also stated that most vehicles also have a driver-controlled lock-out for at least the rear windows, if not all the windows. In addition, these commenters argued that the agency had not provided evidence to demonstrate that the proposed switch requirements would achieve the desired goal of preventing power window entrapment incidents.

##### Specific Comments

###### Justification for the Regulation

AAMA, AIAM, Volkswagen and Mercedes commented that neither the

<sup>10</sup> Comments were received from: (1) Advocates for Highway and Auto Safety (Advocates); (2) American Automobile Manufacturers Association (AAMA); (3) Association of International Automobile Manufacturers (AIAA); (4) BMW of North America, Inc. (BMW); (5) Ford Motor Company (Ford); (6) American Honda Motor Co., Ltd. (Honda); (7) Mitsubishi Motors R&D of America, Inc. (Mitsubishi); (8) Mercedes-Benz of North America, Inc. (Mercedes); (9) Nissan North America, Inc. (Nissan); (10) Toyota Technical Center USA, Inc. (Toyota); (11) Volkswagen of America, Inc. (Volkswagen); (12) Volvo Cars of North America, Inc. (Volvo); (13) Brose North America, Inc. (Brose); (14) Libbey & Suddock, P.C.; and (15) Mr. Thomas P. Flanagan. All comments and other correspondence discussed in this notice are available under Docket No. NHTSA–2004–17216.

petitioner nor the agency had provided any data demonstrating a safety need for the NPRM's proposed requirements, particularly when NHTSA itself had acknowledged that manufacturers were voluntarily developing and implementing design changes consistent with the agency's regulatory goals. Mercedes also argued that the proposed regulatory language is overly broad and too vague to address the alleged safety problem. Further, Mercedes questioned whether the agency had any data to show that push-pull switches are also not susceptible to inadvertent actuation by children and suggested that the agency should conduct additional research. For all these reasons, Mercedes argued that the proposal could not be justified in its present form.

Volvo's comments acknowledged that an improved design of power window switch to make them safer against inadvertent closure could provide some added protection to children left unattended in vehicles. However, Volvo also questioned whether regulation is necessary, in light of the trend toward installation of recessed or lift-up switches and the effects of market forces.

AAMA commented that the agency has not investigated any of the reported incidents of power window injury discussed in the NPRM to determine whether the proposed regulatory changes would have prevented the reported injuries.

The comments of Mr. Flanagan, an individual, expressed a contrary view, stating that the agency should concentrate very seriously on enacting regulations that would require push-down/pull-up power window switches. Mr. Flanagan asserted that such action would eliminate the overwhelming majority of inadvertent power window switch activation resulting in serious child injuries.

##### *Test Objectivity*

Advocates for Highway and Auto Safety expressed concern that the test procedures for the proposed amendments to FMVSS No. 118 were not objective. Specifically, Advocates stated that the rigidity of the test ball was not specified, that the term "nondestructive" was not defined, and that no force level was specified for pressing the 25 mm (1 inch) ball against the switch. Mercedes commented that the phrase "in a non-destructive manner" in the regulatory language is meaningless and unenforceable.

Volvo suggested using an alternative test device similar to one used in Economic Commission for Europe

Regulation No. 21,<sup>11</sup> European Union (EU) Council Directives 74/60/EEC<sup>12</sup> and 78/632.<sup>13</sup> (These European standards are identical with regard to the test device suggested by Volvo.) However, Volvo recommended a reduction in the radius of that device from 60 mm (2.4 inch) (as shown in Annex 7 of ECE Regulation No. 21) to 25 mm (1 inch).

#### *Size of the Test Ball*

Some commenters raised the issue of whether the size of the proposed test ball was appropriate. Specifically, Advocates questioned whether a test ball 25 mm (1 inch) in diameter would account for inadvertent switch operation as a result of pressure from a child's elbow, suggesting that a smaller size would be more representative.

In contrast, the AAMA argued that the agency had not provided adequate evidence to suggest that the 25 mm (1 inch) diameter rigid test ball appropriately represents the knee or "flat softer tissue" of the foot, arm, or leg, of a child under the age of six. AAMA also stated that such a small diameter test device could necessitate switch designs that would pose operational difficulties for persons with a limited range of motion in their hands or fingers (e.g., occupants with arthritis or even long fingernails), or with a gloved hand.<sup>14</sup> According to AAMA, such persons may have difficulty operating recessed, shielded, or pull-type switches, a situation that may distract from the primary driving task and put vehicle occupants at higher risk of being injured in a crash.

Volvo commented that a 25 mm (1 inch) diameter is too small for the test ball to be representative of the bent knee of a child, suggesting that 50 mm (2 inches) would be more representative.

<sup>11</sup> Uniform Provisions Concerning the Approval of Vehicles With Regard to Their Interior Fittings (ECE R21).

<sup>12</sup> On the Approximation of the Laws of the Member States Relating to the Interior Fittings of Motor Vehicles (Interior Parts of the Passenger Compartment Other Than the Interior Rear-View Mirrors, Layout of Controls, the Roof or Sliding Roof, the Backrest and Rear Part of the Seats) (74/60/EEC).

<sup>13</sup> Adapting to Technical Progress Council Directive 74/60/EEC On the Approximation of the Laws of the Member States Relating to the Interior Fittings of Motor Vehicles (Interior Parts of the Passenger Compartment Other Than the Interior Rear-View Mirrors, Layout of Controls, the Roof or Sliding Roof, the Backrest and Rear Part of the Seats) (78/632/EEC).

<sup>14</sup> Although it did not provide a source for the information, AAMA stated that existing data indicate that the average size of a 95th-percentile male's finger at the first knuckle is 22.8 mm (0.9 inch). AAMA argued that when this dimensional value is coupled with an average glove tolerance of 5–7 mm (0.20–0.28 inch), the 25 mm (1 inch) testing diameter is rapidly exceeded.

According to Volvo, even some designs of lift-up switches might fail in certain test directions if a 25 mm (1 inch) test ball were used, due to the fact that a certain amount of space is required around the switch to allow a proper grip for fingers.

#### *Exclusions*

Some commenters (BMW, Mitsubishi, Volvo) suggested that vehicles equipped with an automatic reversal system that meets the requirements of S5 should be excluded from the proposed requirements related to switches. BMW stated that this approach would afford manufacturers design flexibility without degrading the level of protection for occupants in unsupervised conditions.

Comments from BMW and Toyota also argued that the agency should exclude from the new requirements any power window switch that could be locked out or disabled by the driver.

Toyota commented that the proposed new requirements should not apply to any switches that can be reached from the front seat by a 5th-percentile female, arguing that the proposal is too strict and would unnecessarily limit design flexibility. Toyota argued that it is unnecessary to impose the proposed requirements on switches that can easily be observed and reached by the driver (e.g., switches in the front passenger compartment), because the driver would be able to provide the necessary supervision of those switches' operation.

Several commenters (Nissan, Mitsubishi, Mercedes, Volvo, Volkswagen) commented that the agency should exclude sunroof systems from the proposed requirement in cases where the switch is mounted in the vertical interior roof lining, because there is virtually no chance that a child's knee or foot could activate such a switch. Nissan stated that it does not use a "one-touch" closure feature and that its roof panel switches do not function without the ignition key or if the key is in the "Off" or "Accessory" position.

Other commenters, such as Honda, argued that the proposed requirements should not apply to switches installed on approximately vertical surfaces. Honda also stated that switches on a console located on the centerline of the vehicle between the front seats should be excluded from the proposed requirements, because a small child would not have sufficient reach to activate such controls and still be in the path of the window. More generally, Honda recommended that the agency should consider excluding from the standard's switch requirements those

switches where the distance between the switch and the window it operates is so great that a person could not simultaneously actuate the switch and be in a position with the potential for entrapment. Honda did not provide any data in support of its proffered proximity-based exclusion.

#### *Automatic Reversal Systems*

Some commenters questioned the agency's decision to not propose to require automatic reversal systems on new vehicles equipped with power windows. For example, Advocates stated that NHTSA had not substantiated that automatic reversal systems are "unreasonably costly" and had not attempted to analyze the costs and benefits of such systems. Brose, a manufacturer of automatic power window reversal systems, stated that the agency's estimate of consumer costs for such systems, approximately \$100 per window, overestimates the actual cost, which Brose expected would be approximately half of that figure.

In addition, Advocates challenged the agency's statement that automatic reversal technology falls short of desirable performance, in that ice, snow, and even friction caused by cold or tight weather stripping can prevent window closure. Advocates pointed to the Cadillac Catera, a vehicle equipped with an automatic reversal system, as proof that such systems are capable of reliable operation and may prevent injuries.

Brose stated that the pinch force-sensing automatic reversal systems it produces are able, in most cases, to differentiate adverse environmental influences (e.g., ice) from occupant entrapment situations and that they can do so reliably for the life of the vehicle. Brose also stated that automatic reversal systems may be active when subject to variable closure conditions, rather than operating only in the "express-up" mode, and that such systems also are available on rear side windows to protect children.

#### *Lead Time*

Vehicle manufacturers generally commented that they would require adequate lead time to incorporate the new switch requirements in their production processes. Mitsubishi stated that it would require a four-year lead time to implement the further design work necessary to comply with the requirements in the proposed rule. Mercedes commented that the lead time for any such rule should be at least five years, in order to reduce its cost impact. Toyota and Volkswagen each stated that the necessary modifications to its

vehicles could be made with a lead time of three years.

## V. Post-Comment Period Developments

As noted in the NPRM, NHTSA has periodically received reports from lawyers, doctors, and the public describing deaths and serious injuries of unattended children in power window accidents. Additional incident reports were provided as part of the Moore petition and in public comments (Libbey & Suddock). These incidents occurred despite the fact that power window operation in these vehicles was tied directly to the ignition locking system. Such reports strongly suggested to the agency that additional requirements were needed to protect children.

### *Injuries Associated With Power Windows*

Data obtained since the NPRM confirms the existence of an ongoing problem at a national level. In March 2000, NHTSA responded to questions from some commenters on the NPRM about the justification for the rulemaking by undertaking a review of death certificates from the 50 U.S. States for calendar year 1997. As part of that review, the agency examined three types of non-crash accidents related to motor vehicles, including child (age 10 or younger) fatalities related to vehicle windows. This study was augmented with a search for relevant news articles in the Lexis-Nexis™ database, both to confirm cases found in death certificates and to identify additional cases from 1997 and later years.

The study looked at the issue of child fatalities in power window incidents generally, including any fatalities involving vehicle power windows, to obtain an overview of the problem.

A final report, which was published in May 2002,<sup>15</sup> states that in 1997, four deaths of children were associated with vehicle windows, and in two of those cases, it was possible to identify the window system in question as being a power-operated one. In all of those cases, the victims were very young children (three three-year-olds and one four-year-old).

In order to confirm the pattern of injuries discussed above, NHTSA supplemented this research with a similar review of death certificates for calendar year 1998 and updated the Lexis-Nexis™ search. The resulting report, which was published in May

2004,<sup>16</sup> yielded the following information.

The results of the review of the 1998 death certificate data were similar to the earlier findings. Four child deaths were recorded as a result of interaction with a vehicle window. Of the four cases, two were identified as involving a power-operated window. In the third case, it was not possible to identify from the death certificate whether the window involved was power-operated, and in the fourth case, no window movement took place, so whether the window was power-operated was not relevant. Victims in those cases were ages two, three (two cases), and six.

As discussed in the second NHTSA report, the results of the updated Lexis-Nexis™ search identified 11 child deaths and one injury for calendar years 1998–2002 associated with vehicle windows (one of these deaths involved a sunroof). We concluded that power-operated windows or sunroofs caused nine of the deaths and the one injury. In two cases, it was not possible to identify whether the windows involved in the incident were power-operated. Except for one six-year-old, all of the victims were either age two or three.

These data also indicate that the annual incidence rate for power window-related fatalities involving children is, on average, in the low single digits. However, with such a low rate of occurrence, the number of cases may fluctuate (spike or ebb) in any single year, without necessarily signaling a trend or a generalized change in circumstances.<sup>17</sup>

### *Estimate of Injuries Preventable by Safer Switches*

The potential benefits attributable to safer switches are limited to power-window incidents resulting from inadvertent actuation. In some cases, however, it is not possible to determine whether a power-window incident resulted from inadvertent or intentional operation of the power window switch.

None of the deaths mentioned in the previous section that may have involved inadvertent actuation involved power windows controlled by pull-up, push-down switches. Thus, they were potentially preventable by safer switches.

As discussed later in this document, in the section titled “Benefits,” we conservatively estimate that, on average, safer switches could prevent at least one child fatality and at least one serious injury per year.

### *Estimate of Injuries Potentially Preventable by Automatic Reversal Systems*

There is an overlap between the target population for this final rule and the target population of the automatic reversal system requirement sought by petitioners. As noted previously, the target population for this final rule consists of persons killed or injured by inadvertent actuation of power window switches. The target population of the automatic reversal system requirement sought by petitioners is larger, but only slightly, consisting of persons killed or injured by either intentional or inadvertent actuation of those switches. Based on the data, discussed above, on the number of deaths identified as involving a power-operated window, we believe that in the absence of this final rule, an automatic reversal system requirement might prevent at least two fatalities per year. (We are unaware of any deaths caused by a power window with an automatic reversal feature.) Given the issuance of this final rule, the benefit of an automatic reversal system requirement would be reduced to the prevention of at least one fatality per year.

## VI. Summary of the Safety Problem

We believe that the design of power window switches is influential in incidents in which power windows result in death or injury. Specifically, we believe that rocker and toggle switches are more susceptible to inadvertent operation, because even incidental contact (e.g., a slight bump or nudge of the switch) can cause the window to begin to close. In contrast, by making it necessary to install either recessed/shielded switches or push-pull switches, injuries and fatalities are likely to be significantly reduced because accidental switch contact would not occur or would not cause window closure.

Some commenters argued that push-pull switches might not resolve the problem of inadvertent activation. The agency notes that because power window accidents typically are not witnessed, there will always be a measure of uncertainty as to whether a child inadvertently actuated an exposed rocker or toggle switch, resulting in a window-closing injury or fatality. It is theoretically possible, as some commenters argued, that some of the

<sup>15</sup> “NHTSA Pilot Study: Non-Traffic Motor Vehicle Safety Issues,” NHTSA (May 6, 2002) (Docket No. NHTSA–2004–17216–27).

<sup>16</sup> “Data Collection Study: Deaths and Injuries Resulting From Certain Non-Traffic and Non-Crash Events,” NHTSA (May 2004) (Docket No. NHTSA–2004–17216–28).

<sup>17</sup> A spike has reportedly occurred this year in power window deaths. This situation is similar to one that the agency encountered with trunk entrapment cases. In a three-week period in the summer of 1998, 11 children died in several trunk entrapment cases.

children may have closed windows on themselves by actuating power windows in the normal way (*i.e.*, using fingers to actuate the switch). In such cases, switch redesign could not have prevented those accidents.

We note that pulling up a switch to close a window is an operation requiring a conscious decision to perform. A person cannot accidentally press against a push-pull switch and cause a window to begin to close. Therefore, inadvertent actuation and entrapment with push-pull type switches are unlikely events. Thus, we continue to believe that switch design is a major factor in the identified injuries and fatalities associated with inadvertent power window actuation.

We note that there are other scenarios in which power windows may cause death or injury. In some cases involving two children playing in a vehicle, one child may intentionally activate the power window switch (as the switch was functionally intended to operate) with the unintentional effect of entrapping the other child. In other cases, a driver may be distracted and close a power window on a child whose head is in the window opening. The present rulemaking, which focuses on power window switch designs that are resistant to inadvertent actuation, would not prevent those cases, some of which stem from driver distraction or insufficient adult supervision. In such cases, no particular switch design would prevent the relevant injuries or fatalities, although automatic reversal systems might be an effective, although very costly countermeasure.

## VII. The Final Rule

### *Decision To Move to a Final Rule*

Although there has been a longer than usual interval between the NPRM and the resulting final rule, we have decided to move directly to a final rule for several reasons. First, more recent data confirm an ongoing problem of injuries and fatalities related to the inadvertent actuation of power window switches. The nature and extent of that problem have not changed drastically since the time of the NPRM. We note that while there has been an increase in the use of shielded or recessed switches or push-pull switches since the NPRM, we would not necessarily expect a gradual increase in the use of these switches to track with changes in the number of fatalities, given the rare, sporadic nature of these events.

Second, the technology that we expect to be used to comply with the final rule is essentially unchanged since the NPRM. The shielded or recessed

switches and push-pull switches of today are similar to the ones at the time of the NPRM.

Third, as indicated above, there has been an increasing trend among vehicle manufacturers to equip vehicles with shielded or recessed switches or push-pull switches. We expect those vehicles to meet the requirements of the standard, particularly given the increase in the diameter of the test device specified in this final rule, as compared to the device in the NPRM. This final rule is thus consistent with a safety solution already being implemented in the marketplace. Our final rule will accelerate this trend and ensure that all light vehicles comply.

Fourth, other than relatively minor technical changes, the requirements of this rulemaking are largely the same as presented in the NPRM. Coupled with adequate lead time, we expect implementation of any necessary changes to be relatively simple and of *de minimis* cost. We expect that such changes would be accomplished during the normal vehicle redesign process.

For these reasons, we do not see any significant possibility that obtaining further public comment would change the information before this agency. Accordingly, we have decided that it is in the public interest to proceed at this time to issue a final rule.

### *Summary of Requirements*

After carefully considering the comments on the proposed rule and other available information, we have decided to amend FMVSS No. 118 by adding a new section S6, which specifies requirements for power window switches in passenger cars, multipurpose passenger vehicles, and trucks with a GVWR of 4,536 kg (10,000 lbs.) or less. These requirements apply to switches that are located in the occupant compartment of those vehicles and control the closing operation of power-operated windows, partitions, and roof panels.

The provisions of S6 specify that power window switches must meet new performance requirements when tested using a test device consisting of a hemisphere with a smooth, rigid surface and a radius of 20 mm  $\pm$  1 mm. The device reasonably represents the knee of a small child (2–3 years old). When the test device is applied with a force not to exceed 135 Newtons (30 lbs.) to any switch (or in the case of shielded or recessed switches, to the shielding/housing of any switch with the force directionally applied in a manner that, if unimpeded, would make contact with the switch) in the vehicle occupant compartment that can be used to close

a power-operated window, partition, or roof panel, such application must not cause the window, partition, or roof panel to begin to close. The force is applied to the geometric center of and perpendicular to the flat surface of the hemisphere. While applying a force in the specified range, the hemisphere may be in contact with any part of the actuation device (switch) (or of the switch shielding/housing) at any angle.

The requirements of S6 do not apply to switches that are both roof-mounted and not capable of “one-touch” closure. In addition, power-operated systems that meet the automatic reversal requirements of S5 are also excluded from the requirements of S6.

We believe that the test requirement set forth in section S6 provides a simple and practicable means of evaluating power window systems so as to provide enhanced protection of children. Accordingly, this final rule furthers NHTSA’s mission of preventing motor vehicle-related deaths and injuries.

The following provides more in-depth discussion of the standard’s new requirements and rationale related to switches for power-operated windows, partitions, and roof panels, including a response to public comments.

### *Effectiveness of the New Switch Requirements*

Our examination of the existing data on injuries and fatalities associated with inadvertent actuation of power windows not only aided us in defining the nature and extent of the safety problem, but it also contributed to the identification of the remedy included in this final rule. As discussed below, the agency’s research indicated the types of power window switches that are most susceptible to inadvertent actuation, as well as those most resistant to inadvertent actuation.

Among the fatalities identified in the agency’s research reports, which consider only cases in which a child was left alone in the vehicle with no sibling or other person present in the vehicle and in which the vehicle model and type of switch were identified, there were a total of nine fatalities in the last ten calendar years (*i.e.*, calendar year 1994 or later) caused by closing power windows. As noted above, none of those nine cases involved vehicles with push-pull type switches.

Further, there are several complaints documented in NHTSA’s Vehicle Owner Questionnaire (VOQ) database related to power-operated windows.<sup>18</sup>

<sup>18</sup> A search of this database may be conducted by accessing <http://www-odi.nhtsa.dot.gov/cars/problems/complain/complaintsearch.cfm> and entering the appropriate terms.



In a few of those cases, it was apparent that adults observed a child closing a vehicle window by kneeling or standing on the power window switch (and at least one case of a dog observed doing the same). None of the involved switches were of a push-pull design.

These data indicate both the mode of action of most power window-related incidents (*i.e.*, kneeling or standing on switches), as well as the types of switches that are most susceptible to inadvertent actuation (*i.e.*, rocker and toggle switches).<sup>19</sup> The same information also indicates that push-pull type switches provide superior protection against inadvertent actuation. As noted above, the design of push-pull switches require a more conscious effort to effectuate window closure (*i.e.*, active pulling with a finger rather than inadvertent contact).

The Japan Automobile Manufacturers Association (JAMA) has acknowledged the importance of careful switch design. Although we believe that its recommendation does not go far enough, the following statement by JAMA underscores the need for the present rulemaking:

Switches should be constructed so that they are less prone to incorrect operation, taking into account the extent of their projection and configuration in relation to the surrounding area. If the switch for closing a window is installed on a plane whose angle is within 30 degrees from the horizontal plane, it should not be a "see-saw" type or push-type switch.<sup>20</sup>

We do not believe that the switch requirements contained in this final rule will negatively impact normal, intentional operation of the windows, such as operation in the dark or operation with gloved hands. We also believe that switches designed to conform to the standard will be easy to operate and will not distract drivers. We note that there are many vehicle models currently being sold in the U.S. that would already meet the requirement of this final rule, so the suggestion that compliant power window switch designs would pose operability problems, as alleged, does not appear to be valid in light of current production.

Thus, although inadvertent operation comprises only a very small percentage of overall usage, we expect that a safety benefit could be realized through relatively simple switch redesigns that would not compromise normal operation. Consistent with the above, we believe that a requirement resulting

in either push-pull switches or recessed switches resistant to inadvertent actuation would eliminate the vast majority of incidents of the type reflected in the data.

#### *Test Device and Methodology*

##### (1) Shape of the Test Device

In the NRPM, we proposed that the shape of the test device would be a sphere.

As previously discussed, one commenter (Volvo) suggested the use of an alternative device similar to one specified in ECE Regulation No. 21 and EU Directives 74/60 and 78/632. Those documents relate to interior fittings in motor vehicles generally, including power window switches.<sup>21</sup>

Volvo suggested using the shape and proportions of the ECE test device, but scaling it down to child size by reducing its edge radius from 60 mm (2.4 inches) as shown in Annex 7 of ECE Reg. No. 21 (which approximates the size of an adult knee) to 25 mm (1 inch), which Volvo stated is the size of a child's knee.

The resulting test device suggested by Volvo is depicted in a figure attached to Volvo's comment.<sup>22</sup> The device is in the shape of a rounded triangle of 50 mm (2 inches) thickness, with rounded edges of 25 mm (1 inch) radius. The rounded vertex of the triangle—the part that would be in contact with a power window switch during testing—is effectively a sphere with a 50 mm (2 inches) diameter.

Because the shape of the critical feature of the test device suggested by Volvo closely resembles that of a simple sphere, we believe that the test device specified in this final rule is similar to the one suggested in Volvo's comment and has the added benefit of simplicity, since only radius and surface characteristic must be specified. Accordingly, we have retained the spherical shape of the test device as part of this final rule.

However, in order to simplify the application of the test device in actual testing, we have decided to utilize a

<sup>21</sup> We note that the EU adopted Directive 2000/4/EC in February 2000. (Amending Council Directive 74/60/EEC on the Approximation of the Laws of the Member States Relating to the Interior Fittings of Motor Vehicles (Interior Parts of the Passenger Compartment Other Than the Interior Rear-View Mirrors, Layout of Controls, the Roof or Sliding Roof, the Backrest and Rear Part of the Seat) (Directive 2000/4/EC). In essence, the new directive incorporated requirements similar to those in FMVSS No. 118 and also included the following requirement related to power window switches: "Switches \* \* \* shall be located or operated in such a way to minimise [sic] the risk of accidental closing." However, the Directive does not provide any additional performance requirements for those switches.

<sup>22</sup> Docket No. NHTSA-2004-17216-11.

hemisphere, rather than a full sphere. This will permit attaching of a rod to the flat surface of the hemisphere for easier maneuvering of the test device during a test. Only the spherical surface of the test device will be used for contacting the switch or switch housing during testing.

##### (2) Size of the Test Device

In the NPRM, we proposed that the test device would have a diameter of 25 mm (1 inch).

Commenters expressed divergent views as to the appropriate size of the test device. Some commenters, such as Advocates, questioned whether a sphere with a 25 mm (1 inch) diameter would be too large to be effective in minimizing potential power window activation by means other than fingers (with special attention drawn to children's elbows). Other commenters, such as AAMA, stated that a test device with a 25 mm (1 inch) diameter would be too small, possibly restricting switch use by persons with decreased dexterity or gloved hands. Volvo recommended a device whose relevant surface had the equivalent of a 25 mm (1 inch) radius (50 mm (2 inches) diameter).

In order to determine the appropriate size for the test device, the agency also examined anthropomorphic data submitted to the docket by General Motors.<sup>23</sup> The GM submission indicates that the average width of the legs of children (ages 2 to 3½), measured at the knee, is 66 mm (2.5 inches) and that the minimum measurement among 212 children within that age range was approximately 53 mm (2.1 inches). Those figures are corroborated by Volvo's estimated child knee width of 50 mm (2 inches) and by data contained in a 1976 NHTSA research report,<sup>24</sup> which found knee breadth of 66 mm (2.6 inches) for a three-year-old.

Based upon these data alone, a test sphere of approximately 50 mm (2 inches) in diameter seems appropriate. However, other factors lead us to believe that the test sphere should have a somewhat smaller diameter. First, the agency's research indicates at least one confirmed case of a power window fatality involving a child less than two years of age (22 months). Second, the measurements provided by GM are of the overall width of the leg measured at the knee. However, the kneecap itself is smaller than that dimension, even for a bent knee.

<sup>23</sup> Docket No. NHTSA-2004-17216-22.

<sup>24</sup> "Development and Evaluation of Masterbody Forms For Three-year and Six-year Old Child Dummies," (DOT HS 801 811) (Docket No. NHTSA-2004-17216-31).

<sup>19</sup> Available data do not indicate whether those rocker and toggle switches involved in power window-related incidents were shielded or recessed. However, we believe that to be unlikely.

<sup>20</sup> Docket No. NHTSA-2004-17216-23.

Further, we believe that inclusion of a compliance margin is appropriate to ensure that the new requirements address a wide variety of circumstances. Inadvertent actuation of power windows occurs in vehicles with switches of various shapes and sizes, mounted in a variety of locations and orientations, and involves children of different ages and sizes. Body surfaces may interact with and activate switches in a variety of ways. Too large a test device might lead to switches that are susceptible to inadvertent operation in foreseeable but unproven circumstances, such as by elbow contact.<sup>25</sup>

For the above reasons and after considering all available information, we have decided to adopt a hemisphere with a radius of 20 mm  $\pm$  1 mm (0.8 inch). We have selected this dimension because we believe it is a reasonable representation of the predominant size and shape of a small child's knee, with a compliance margin appropriate for the circumstances. As to the alleged problem of operating power window switches with gloved hands or by persons with limited finger dexterity, we are not aware of any significant problem in current vehicles that incorporate either recessed switches or switches with a push-pull design. However, we believe that the increased size of the test device in this final rule should eliminate any such concerns.

### (3) Surface of the Test Device

The NPRM did not provide detail as to the surface of the test device, other than to state that the device would be a "rigid spherical ball."<sup>26</sup> Commenters stated that the agency should provide additional specificity in this regard in order to increase objectivity.

We agree that further clarification is appropriate, and we have modified the regulatory text as follows. Our experience with different test device sizes and types indicates that rotation of the test sphere as it is pressed against a switch under test influences whether the switch can resist actuation. We also found that a ball with a relatively high level of surface friction exacerbated the effect of ball rotation. For these reasons, we have decided to specify that the test device be rigid and have a smooth

surface, in order to limit the effect of rotation.

### (4) Application of the Test Device

As discussed above, some commenters argued that the agency's proposal was not objective because it did not specify of level and direction of force to be applied to the test sphere. Instead, the NPRM stated that the test ball would contact the switch in "any non-destructive manner."<sup>27</sup>

In response to concerns raised about the objectivity of the how the test device will be applied to the switch, we have decided to specify a level of force for application of the test device as part of the test procedure. For the following reasons, we have decided that the test device is to be applied with a force not to exceed 135 Newtons (30 lbs.), which is applied to the geometric center of and perpendicular to the flat surface of the hemisphere. While applying this force level, the hemisphere may be in contact with the switch at any angle. For shielded or recessed switches, the same test device and range of force are used at any angle to attempt to make contact with the switch. In such cases, the test device is directionally applied in such a manner that, if unimpeded, contact would be made with the actuation device.

As the standard does not contain a strength requirement for power window switches, our goal in selecting a force level was not to determine whether switches could withstand relatively high force levels. In addition, we note that power window switches normally actuate under force levels on the order of several ounces.

As noted above, we based our decision as to the appropriate size of the test device on the dimensions of the knee of small children (2–3 years old). Therefore, in the interest of consistency in selecting the force to be applied to the test device, we have decided that it is appropriate to use a force consistent with the weight (30 lbs.) of a 2-year-old to 3-year-old child.

We believe that 135 Newtons (30 lbs.) of force is consistent with the weight of the majority of children involved in power window-related incidents and would test the resistance of switches to inadvertent actuation in the closing direction without imposing any requirement for switch durability.<sup>28</sup>

<sup>27</sup> *Id.*

<sup>28</sup> According to statistics provided by the Society for Automotive Engineers (SAE), the 95th-percentile weight for children ages 19–24 months was 13.8 kg (approximately 30 lbs.). See "Anthropometry of U.S. Infants and Children," Society of Automotive Engineers (SAE) SP-394 (1975) (Instructions on how to view a copy of this document are provided at Docket No. NHTSA-2004-17216-26).

Although most power window switches in isolation may actuate at lower force levels, the force specified in this final rule will preclude shielding/housing around shielded or recessed switches that deforms to such an extent that inadvertent actuation of the switch becomes possible.

We expect all existing vehicle power window switches would be sufficiently robust as to withstand this maximum force when applied during testing.<sup>29</sup> If a switch were to break during testing, it would not be a noncompliance under the standard, provided that breakage did not cause the window to begin to close.

### Orientation and Placement of Switches

With the exception of roof-mounted switches not capable of "one-touch" activation, this final rule does not exclude window switches from the standard's requirements based on location or orientation of the switch. Even switches mounted on vertical surfaces could be unintentionally contacted, resulting in inadvertent window closure. We do not believe the standard's requirements will impose unreasonable design restrictions on manufacturers. As previously noted, push-pull switches or shielded/recessed switches are already incorporated in many vehicles, and they are used in various locations and orientations.

However, after reviewing the available information, we have decided to exclude certain ceiling-mounted switches (e.g., switches located in an overhead console) from the new switch performance requirements of the standard because they are not susceptible to inadvertent actuation. There is no feasible way for an occupant to stand or kneel on overhead switches while leaning out of an open window or sunroof, as may occur with switches mounted in other locations.

Nonetheless, an overhead switch is only excluded from the requirements set forth in this final rule, if such switch requires continuous pressure to close the window or sunroof. Switches with a "one-touch" capability, even if they are mounted overhead, pose an elevated risk because they can set a window or sunroof in motion, even if they are actuated only momentarily and then

This value is also representative of the weight of an average three-year-old. Therefore, the selected force closely approximates the weight of the majority of children who were most frequently involved in incidents of inadvertent power window actuation.

<sup>29</sup> The agency recently conducted informal tests of power window switches from six 2004 vehicles, some outside the vehicle and some inside the vehicle. There did not appear to be any breakage even when 445 Newtons (100 pounds) of force was applied to these switches.

<sup>25</sup> Examination of the relevant data does not reveal any cases in which inadvertent elbow contact was identified as the cause of a power window injury or fatality. Instead, most cases involved a child kneeling or standing on a power window switch. Furthermore, from a logistical standpoint, we believe that it would be extremely rare for inadvertent elbow contact to result in entrapment. Accordingly, our calculations to determine the size of the test sphere focused on dimensions of children's knees, rather than elbows.

<sup>26</sup> 61 FR 58504, 58507.

released. Therefore, overhead switches are excluded from the requirements of this final rule only if they require continuous actuation for the window or sunroof to continue closing.

Several commenters requested the exclusion of switches located at a relatively large (“stand-off”) distance from the window or sunroof that they control (e.g., center console-mounted switches controlling rear vent windows in minivans). The underlying rationale for this request is that because an occupant (particularly a child) would not be large enough to span the distance between such a switch and the window/sunroof opening, there would not be any way for that person to lean against the switch while in a position in which that person is in danger of becoming entrapped.

After considering this suggestion, we have decided not to exclude switches based upon their distance from a window or sunroof for the following reasons. First, the interiors of motor vehicles are, in general, not very large compared to the length/height of children, particularly when children are reaching with outstretched limbs. Based upon available data, we estimate that the height of a 95th-percentile six-year-old is approximately four feet.<sup>30</sup> The same publication lists the lower arm length for the 95th-percentile six-year-old as just over one foot. If this length is added to the height measurement, it gives a reasonable approximation of the maximum distance that a child can reach with an outstretched arm (i.e., 5 feet). Although we have not received any data regarding what would constitute a safe stand-off distance, we believe that it would have to be at least four to five feet. Although there may be some switches operating windows beyond this distance (e.g., back vent window in minivans), we have concluded that in most other cases, as long as switches are located in placements that are reasonable for normal operation, they are unlikely to be sufficiently out of reach of the windows and sunroofs they control to make inadvertent actuation impossible.

Second, there have been a limited number of cases in which two children were left in a vehicle, and one of the children was strangled by a power window. In those cases, it is not always clear which child actuated the power window switch and whether such actuation was intentional or unintentional. Nonetheless, we do not

believe that it is appropriate to exclude such switches from the final rule’s requirements, since unintentional actuation of a power window switch by one child could result in a fatality to another child, the basic mechanism of injury is the same, and associated costs are negligible.

In addition, we are not adopting commenters’ suggestion to exclude vehicles with a power window lock-out feature from the requirements of the final rule. Unlike an automatic reversal system that can be expected to operate at all times, there is not any guarantee that a power window lock-out feature will be used in all or even many cases. In addition, on at least some vehicle models, the lock-out feature does not disable the driver’s window switches, and in other models, it only disables the rear window switches. Consequently, we believe that window lock-out features are not sufficiently protective to substitute for improved switch designs.

#### *Automatic Reversal*

##### *Automatic Reversal Systems at the Time of the NPRM*

In the NPRM, NHTSA addressed the Moore petition’s request for the agency to mandate automatic reversibility. As discussed above, we concluded then that such a feature would be too costly to be mandated on all new light vehicles, that the then existing technology was insufficient to provide the desired safety performance and that it would not be practicable to redesign such systems to provide that performance and at the same time retain the ability to close under certain common environmental conditions. Therefore, the agency denied the Moore petition’s request related to an automatic reversal requirement, based upon the following reasoning.

At the time of the 1996 NPRM, the only type of automatic reversal systems available for broad application utilized force-sensing technology. The agency estimated the cost for such systems to be approximately \$100 per window, which translated to \$400 for a vehicle with four power windows. The petitioner did not provide any information to substantiate his claim that automatic reversal systems were not unreasonably expensive.

In the NPRM, the agency also identified certain functional problems with such systems that cast doubt on their efficacy in addressing the problem of power window caused injuries and fatalities. The agency determined that the then available automatic reversal technology could not reliably close vehicle windows in the presence of

snow or ice, or even the friction of cold or tight window seals. As a result, the automatic reversal capability was active only during one touch “express-up” window operation. It was overridden during the normal closure mode (i.e., when the power window switch was continuously held in the window closing position). Automatic reversal technology of that type and capability would not have prevented window closure from occurring when occupants stood, knelt, or leaned on power window switches.

One commenter on the NPRM (Advocates) argued that some vehicles then available in the U.S. market (e.g., Cadillac Catera) were equipped with an automatic reversal system that they presumed met the pinch force protection requirements of S5 of the standard. However, we do not know if the system in those vehicles actually met those requirements. We believe that none of those vehicles was certified under FMVSS No. 118 as complying with S5. Instead, they were certified under S4, which provides that the power windows operate only when the ignition key is in the “On,” “Start,” or “Accessory” position (or in other specified, permissible positions).

##### *Automatic Reversal Systems Today*

Since the NPRM, the agency has received two additional petitions for rulemaking (i.e., the 2003 petitions from Little and CAS) requesting that we require automatic reversal systems on all new vehicles equipped with power windows.

Although there has been improvement in the technology for force sensing automatic reversal systems since the NPRM (e.g., a Brose system using an electric current-sensing technique that causes a closing window to reverse automatically in the normal operation mode as well as express mode), we believe that these systems still might not meet the requirements of S5 relating to protection of very small appendages, such as a child’s fingers. We base this belief upon the fact that force-detecting reversal systems on vehicles now being sold in the U.S.<sup>31</sup> were generally designed to meet a German performance requirement,<sup>32</sup> under which power windows are limited to 100 N of pinch force; however, the requirement permitted the window to move a

<sup>31</sup> The agency believes that all automatic reversal systems on vehicles currently being sold in the U.S. use force-sensing technology.

<sup>32</sup> Road Traffic Act (Germany), No. 60, paragraph 30 STVZO (Guidelines for power-operated windows of passenger vehicles) (1983) (Docket No. NHTSA-2004-17216-25). The German requirement was absorbed into the EU standard in 2000.

<sup>30</sup> See “Anthropometry of U.S. Infants and Children,” Society of Automotive Engineers (SAE) SP-394 (1975) (Instructions on how to view a copy of this document are provided at Docket No. NHTSA-2004-17216-26).

considerable distance (several millimeters) before reaching a force level high enough to trigger reversal. This European requirement has not changed since the NPRM. Consequently, systems designed to satisfy the requirement might not protect small fingers as effectively as systems certified to meet S5 of FMVSS No. 118.

Recently, new technology has become available which could address some of the shortcomings noted in the NPRM regarding the then existing force-sensing systems. For example, in its petition, CAS discusses a non-contact automatic reversal system produced by Nartron Corporation, which uses a capacitive sensing<sup>33</sup> technology to provide automatic reversal. Such newer automatic reversal systems appear to have addressed earlier concerns regarding the systems' reliability in terms of closing when the weather stripping is very cold or when ice is present. It appears that with these improvements, it may be feasible for such systems to comply with the requirements of S5.

However, the cost per vehicle of these systems is significant. According to CAS, the Nartron system has a cost of \$12.50 per window, or \$50 per vehicle. Available information suggests that all production-ready automatic reversal systems (*i.e.*, ones based on force-sensing) average approximately \$8 to \$10 per window (\$32 to \$40 per vehicle).

In addition, we note that automatic reversal systems based on still other types of technology are under development. One example is a non-contact automatic reversal system of the type developed by Prospects Corporation that uses infrared reflectance technology to sense obstacles, although no cost estimates are available for this system. (Rights to that technology have been licensed to Delphi Corporation.) Non-contact automatic reversal systems have also been developed using light beam interruption technology, but again, no reliable cost figures are available.

In sum, we believe that mandating the installation of these systems on all new light U.S. vehicles would still involve a very high level of cost. As discussed previously, we believe that supplementing this final rule by mandating an automatic reversal system might save one additional life per year, on average. Such a mandate would address those cases where a driver or other vehicle occupant intentionally

closes a window while unaware that another occupant is in a position to become entrapped. Given the substantial cost of automatic reversal systems and the fact that this final rule will reduce the limited benefits that could be obtained from those systems, we are denying the requests in the Little and CAS petitions to mandate automatic reversal systems.

### **VIII. Denial of Petitions for Rulemaking**

#### *Response to the Little and CAS Petitions*

As discussed above, the Little and CAS petitions request the same regulatory actions that the Moore petition requested be taken related to power-operated window, partition, and roof panel systems. Regarding the request by Little and CAS for the agency to require power window switches that are resistant to inadvertent actuation, the issuance of this final rule renders that request moot. As to the request by Little and CAS that the agency require automatic reversal systems on all new light vehicle equipped with power windows, we deny that request for the reasons discussed above.

### **IX. Methods of Compliance**

As noted above, the methods for compliance with the requirements of this final rule are low in cost and involve simple technology that is largely unchanged since the NPRM. These methods are discussed below.

One way to meet the requirements would be to install push-pull window switches instead of rocker or toggle switches. The cost difference between these switches is negligible.

Another way would be to shield rocker or toggle switches or to recess them in a protective housing built into the armrest, console, or other surface containing the switches so that a child's knee could casually contact the housing, but not the switch.

These designs are being used in increasing numbers of vehicles.

In addition, vehicle manufacturers need not comply with the requirements of this final rule if they equip their power windows with automatic reversal systems that meet the requirements of paragraph S5 of the standard. The number of different technological approaches used in designing automatic reversal systems has increased since the NPRM. Further, their effectiveness has improved, even as their cost has been reduced.

### **X. Lead Time and Compliance Date**

In the NPRM, we proposed that compliance with the amended standard would be required three years after

publication of the final rule in the **Federal Register**. We stated in the proposed rule that we intended to provide sufficient lead time to allow vehicle manufacturers to incorporate compliant power window safety switches as part of normal vehicle redesign plans. We believed that providing this lead time would reduce the cost associated with this final rule to essentially zero.

Comments from vehicle manufacturers stated that lead times ranging from three to five years would be necessary, in order to build the required changes into normal product production cycles. After considering the comments and other available information, *e.g.*, the typical vehicle manufacturer production cycles, we have decided to require that all new vehicles produced on or after October 1, 2008, for sale in the U.S. must comply with the amended power window switch requirements in this notice.

This four-year lead time, reflected in the above compliance date, is within the range recommended by vehicle manufacturers in 1996 as to the time required to incorporate the necessary switch design changes into their normal vehicle redesign processes. We recognize, given that the percentage of vehicles equipped with power windows that comply with the requirements of this rule has risen since the NPRM, the overall task of compliance is easier now than it was eight years ago. However, that fact has no bearing on the duration of the redesign process for a particular vehicle model that does not already have compliant switches. As discussed previously, we believe that such lead time is appropriate in order to minimize the costs associated with this rulemaking.

Manufacturers are free to meet the new requirements of FMVSS No. 118 prior to the date for mandatory compliance.

### **XI. Benefits**

Based upon all available information, we believe that, on average, at least one child fatality and at least one serious injury (*e.g.*, amputation, brain damage from near suffocation) per year could be prevented by the requirements of this final rule. We believe that this estimate of safety benefits is conservative, and that the actual benefit is likely higher for two reasons.

First, our estimate counts only cases in which the victim was a child left alone in a vehicle. We excluded several cases because the victim's sibling was also in the car, leading to the possibility that the sibling, and not the victim, operated the window and did so

<sup>33</sup> Capacitive sensing means the detection of an object by the measurement of a disturbance in an electric field.

intentionally. To the extent that these cases involved inadvertent operation of the power window by a second child, the new switch requirements could provide further benefit by preventing actuation.

Second, our estimate counts only cases in which the vehicle make/model was identified so that the type of power window switch was known. Several cases occurred at a time when relatively few U.S. vehicles had push-pull switches. Nevertheless, we decided not to assume that the switches in those cases were either the rocker or toggle type, and instead, we excluded those cases altogether. If further data were available on those cases, the calculated benefits conceivably could increase.

Further, even after NHTSA's methodical survey of death certificates, we found cases in the Lexis-Nexis™ search that did not show up among the death certificates. Likewise, the list of fatalities provided as an attachment to the CAS petition, which represents all of the cases compiled by a national organization dedicated to child safety with cars (Kids and Cars), includes at least one case that is not duplicated in NHTSA's data. The reverse is also true, in that more than one of the cases in NHTSA's study do not appear in the CAS list.

Collectively, these factors suggest that any attempt to determine the size of this problem on a national level will undercount the actual number of incidents and, thus, will result in an under-estimation of the safety benefit.

We also note that the agency's complaint database includes reports of "near-miss" incidents. In those cases, an occupant was actually observed inadvertently operating a power window and was saved from entrapment by nearby adults. Had adults not been present, it is likely that the child occupant would have been injured or killed in those cases. Although it is difficult to quantify the number of near-miss incidents, we believe that a significant number of such cases occur but go unreported, because no fatalities or serious injuries were involved. This pool of close calls demonstrates that, although the number of cases in any given year is typically in the single digits, there is potential for the annual figures of deaths and injuries to vary by a factor of two or three. We believe that such reports further demonstrate the potential of switch design changes to avert risk of injury or death.

Further, the agency's experience with other non-crash safety problems exemplifies how a low-frequency type of safety problem can suddenly

proliferate. In the case of trunk entrapment, one particular year (calendar year 1998) saw the number of deaths multiply by several times the annual average for that type of incident (see 64 FR 70672 (Dec. 17, 1999)).

Although it is unlikely that power window incidents will proliferate to an unexpectedly high level, our research identified five power window-related fatalities in 1998 alone, while the average for the other four years studied (1999–2002) was 1.5 deaths per year.

## XII. Costs

As stated previously, the agency believed at the time of the NPRM that the proposed requirements would impose very little cost burden on vehicle manufacturers, particularly if ample lead time were provided. Modifications made to comply with the proposal were expected to consist merely of changes in the mode of switch operation and/or in the shape of surrounding trim pieces. The proposal was not expected to affect any other aspects of the operation of power windows.

These initial estimates regarding costs hold for this final rule as well. The cost to manufacturers, while perhaps greater than zero, will be negligible, as any necessary switch modifications will presumably be incorporated during the course of normal product design cycles. NHTSA notes that the commenters did not question those estimates.

Further, several major vehicle manufacturers already have incorporated push-pull switches across all or part of their model lines and thus have already borne the cost of compliance. For example, for the current model year (MY 2004), General Motors has stated that approximately 55 percent of its sales volume in the U.S. incorporates push-pull switches.<sup>34</sup> Although data for the current model year were not provided, Ford stated that it expects 61 percent of its fleet to have re-designed switches by the 2007 model year.<sup>35</sup> DaimlerChrysler stated that four of its 26 model year 2003–2004 vehicle models have push-pull switches.<sup>36</sup> Other Chrysler models employ toggle type switches, some of which may comply with the new requirements depending on how they are situated within the vehicle (*i.e.*, whether they are recessed).

As to import manufacturers, Japanese import manufacturers currently use push-pull type switches in most, if not all, of their U.S. vehicles. While some

European import manufacturers use switches that would comply with this final rule, NHTSA does not know the extent of this use. It does know that many of them offer auto-reverse power windows. However, those windows may not qualify for the exception provided in this final rule for power windows that meet the auto-reverse requirements of FMVSS No. 118.

## XIII. Rulemaking Analyses and Notices

### A. Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, "Regulatory Planning and Review" (58 FR 51735, October 4, 1993), provides for making determinations whether a regulatory action is "significant" and therefore subject to OMB review and to the requirements of the Executive Order. The Order defines a "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

This rulemaking document was not reviewed under E.O. 12866. Further, this action has been determined to be "not significant" under the Department of Transportation's Regulatory Policies and Procedures. The amendments to FMVSS No. 118 contained in this final rule would require switch designs that are resistant to inadvertent actuation. However, in light of current industry design trends and the substantial lead time provided, the cost of this final rule is expected to be close to zero. On average, the annual benefits are expected to be a savings of one child's life and the avoidance of at least one serious injury. Therefore, the impacts of these amendments are so minor that a full regulatory evaluation is not required.

### B. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory

<sup>34</sup> Docket No. NHTSA–2004–17216–24.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). The Small Business Administration's regulations at 13 CFR Part 121 define a small business, in part, as a business entity "which operates primarily within the United States." (13 CFR 121.105(a)). No regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

NHTSA has considered the effects of this final rule under the Regulatory Flexibility Act. I certify that this final rule will not have a significant economic impact on a substantial number of small entities. The rationale for this certification is that the rule does not require use of any specific equipment design (*e.g.*, either push-pull type switches or other types of recessed switches could be used), and the substantial lead time brings costs close to zero.

#### *C. Executive Order 13132 (Federalism)*

Executive Order 13132, "Federalism" (64 FR 43255, August 10, 1999), requires NHTSA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" are defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under Executive Order 13132, the agency may not issue a regulation with Federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, the agency consults with State and local governments, or the agency consults with State and local

officials early in the process of developing the proposed regulation. NHTSA also may not issue a regulation with Federalism implications and that preempts a State law unless the agency consults with State and local officials early in the process of developing the regulation.

NHTSA has analyzed this final rule in accordance with the principles and criteria contained in E.O. 13132 and has determined that the rule will not have sufficient Federalism implications to warrant consultations with State and local officials or the preparation of a Federalism summary impact statement. This final rule will not have any substantial effects on the States, or on the current distribution of power and responsibilities among the various local officials.

#### *D. Executive Order 12988 (Civil Justice Reform)*

Pursuant to Executive Order 12988, "Civil Justice Reform" (61 FR 4729, February 7, 1996), the agency has considered whether this rulemaking will have any retroactive effect. This final rule does not have any retroactive effect. Under 49 U.S.C. 30103, whenever a Federal motor vehicle safety standard is in effect, a State may not adopt or maintain a safety standard applicable to the same aspect of performance which is not identical to the Federal standard, except to the extent that the State requirement imposes a higher level of performance and applies only to vehicles procured for the State's use. 49 U.S.C. 30161 sets forth a procedure for judicial review of final rules establishing, amending, or revoking Federal motor vehicle safety standards. That section does not require submission of a petition for reconsideration or other administrative proceedings before parties may file a suit in court.

#### *E. Executive Order 13045 (Protection of Children From Environmental Health and Safety Risks)*

Executive Order 13045, "Protection of Children from Environmental Health and Safety Risks" (62 FR 19855, April 23, 1997), applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental, health, or safety risk that the agency has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially

effective and reasonably feasible alternatives considered by the agency.

Although this final rule is expected to have a positive safety impact on children, it is not an economically significant regulatory action under Executive Order 12866. Consequently, no further analysis is required under Executive Order 13045.

#### *F. Paperwork Reduction Act*

Under the Paperwork Reduction Act of 1995 (PRA), a person is not required to respond to a collection of information by a Federal agency unless the collection displays a valid OMB control number. There are not any information collection requirements associated with this final rule.

#### *G. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113 (15 U.S.C. 272) directs the agency to evaluate and use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or is otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies, such as the Society of Automotive Engineers (SAE). The NTTAA directs us to provide Congress (through OMB) with explanations when the agency decides not to use available and applicable voluntary consensus standards. The NTTAA does not apply to symbols.

Currently, there are no voluntary consensus standards directly related to power-operated window switch design. However, NHTSA will consider any such standards as they become available.

#### *H. Unfunded Mandates Reform Act*

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires federal agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than \$100 million annually (adjusted for inflation with base year of 1995). Before promulgating a NHTSA rule for which a written statement is needed, section 205 of the UMRA generally requires the agency to identify and consider a reasonable number of regulatory alternatives and adopt the

least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows the agency to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the agency publishes with the final rule an explanation of why that alternative was not adopted.

This final rule will not result in the expenditure by State, local, or tribal governments or the private sector, in the aggregate, or more than \$100 million annually. Thus, this final rule is not subject to the requirements of sections 202 and 205 of the UMRA.

#### I. National Environmental Policy Act

NHTSA has analyzed this rulemaking action for the purposes of the National Environmental Policy Act. The agency has determined that implementation of this action will not have any significant impact on the quality of the human environment.

#### J. Regulatory Identifier Number (RIN)

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

#### K. Privacy Act

Please note that anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78), or you may visit <http://dms.dot.gov>.

#### List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Reporting and recordkeeping requirements, Tires.

■ In consideration of the foregoing, NHTSA is amending 49 CFR Part 571 as follows:

#### PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

■ 1. The authority citation for Part 571 of Title 49 continues to read as follows:

**Authority:** 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.50.

■ 2. Section 571.118 is amended by revising paragraph S2 and by adding paragraph S6 to read as follows:

#### § 571.118 Standard No. 118; Power-operated window, partition, and roof panel systems.

\* \* \* \* \*

S2. *Application.* This standard applies to passenger cars, multipurpose passenger vehicles, and trucks with a gross vehicle weight rating of 4,536 kilograms or less. This standard's requirements for actuation devices, as provided in S6, need not be met for vehicles manufactured before October 1, 2008.

\* \* \* \* \*

S6. *Actuation Devices.*

(a) Any actuation device that is mounted in the occupant compartment of a vehicle and can be used to close a power-operated window, partition, or roof panel, shall not cause such window, partition, or roof panel to begin to close from any open position when tested in accordance with paragraphs (b) and (c) of S6.

(b)(1) Using a hemisphere with a smooth, rigid spherical surface and a radius of 20 mm ± 1 mm, place the spherical surface of the hemisphere against any portion of the actuation device.

(2) Apply a force not to exceed 135 Newtons (30 lbs.) to the geometric center of and perpendicular (± 3 degrees) to the flat face of the hemisphere.

(3) While this force level is being applied, the plane of the flat face of the hemisphere may be at any angle.

(c) For actuation devices that cannot be contacted by the hemisphere specified in S6(b)(1) prior to the application of force, apply a force up to the level specified in S6(b)(2) at any angle in an attempt to make contact with the actuation device. The hemisphere is directionally applied in such a manner that, if unimpeded, it would make contact with the actuation device.

(d) The requirement in S6(a) does not apply to either—

(1) Actuation devices that are mounted in a vehicle's roof, headliner, or overhead console and that can close a window, partition, or roof panel only by continuous rather than momentary switch actuation, or

(2) Actuation devices for closing power-operated windows, partitions, and roof panels that comply with S5 of this standard.

Issued: September 9, 2004.

**Jeffrey W. Runge,**  
Administrator.

[FR Doc. 04-20714 Filed 9-13-04; 9:30 am]

BILLING CODE 4910-59-P

#### DEPARTMENT OF TRANSPORTATION

#### National Highway Traffic Safety Administration

#### 49 CFR Part 571

[Docket No. NHTSA 2004-19076]

RIN 2127-AF83

#### Federal Motor Vehicle Safety Standards; Power-Operated Window, Partition, and Roof Panel Systems

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), DOT.

**ACTION:** Final rule.

**SUMMARY:** This final rule amends the test procedures in our standard on power-operated window, partition, and roof panel systems to accommodate and ensure effective evaluation of new technology, specifically automatic reversal systems that operate by infrared reflectance. The standard's existing test procedures are more suitable for other types of technology (e.g., contact/force sensing systems and light beam interruption systems). In addition, the final rule clarifies the procedures for testing automatic reversal systems using a light beam interruption sensing method by specifying that rods used in testing such systems are not transparent.

**DATES:** *Effective Date:* The amendments made in this final rule are effective September 1, 2005. Voluntary compliance is permitted before that date.

*Petitions:* If you wish to submit a petition for reconsideration for this rule, your petition must be received by November 1, 2004.

**ADDRESSES:** Petitions for reconsideration should refer to the docket number above and be submitted to: Administrator, Room 5220, National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, DC 20590.

See the **SUPPLEMENTARY INFORMATION** portion of this document (Section IX; Rulemaking Analyses and Notice) for DOT's Privacy Act Statement regarding documents submitted to the agency's dockets.

**FOR FURTHER INFORMATION CONTACT:** For non-legal issues, you may call Mr. Michael Pyne, Office of Crash Avoidance Standards (Telephone: 202-366-2720) (Fax: 202-366-4329).