and maintenance activities and five-year reviews will not be conducted. However, if new information becomes available which indicates a need for further action, the federal government may initiate remedial actions. Whenever there is a significant release from a site deleted from the NPL, the site may be restored to the NPL without the application of the Hazard Ranking System.

III. Deletion Procedures

The following procedures were used for the intended deletion of this Site: (1) EPA Region 10 selected No Action as the selected remedy in the Record of Decision for the Site. The No Action Record of Decision qualifies the Site for inclusion on the Superfund Site Construction Completion List and may be used to initiate Deletion from the NPL procedures. (2) The Washington State Department of Ecology concurred with the proposed deletion decision. (3) A notice has been published in the local newspaper and has been distributed to appropriate Federal, State, and local officials and other interested parties announcing the commencement of a 30-day public comment period on EPA's Notice of Intent to Delete; and, (4) All relevant documents have been made available for public review in the local Site information repositories.

Deletion of the Site from the NPL does not itself create, alter, or revoke any individual rights or obligations. The NPL is designed primarily for informational purposes to assist Agency management. As mentioned in Section II of this Notice, § 300.425(e)(3) of the NCP states that deletion of a site from the NPL does not preclude eligibility for future response actions.

For deletion of this Site, EPA's Regional Office will accept and evaluate public comments on EPA's Notice of Intent to Delete before making a final decision to delete. If necessary, the Agency will prepare a Responsiveness Summary if any significant public comments are addressed.

A deletion occurs when the Regional Administrator places a final notice in the Federal Register. Generally, the NPL will reflect deletions in the final update following the Notice. Public notices and copies of the Responsiveness Summary will be made available to local residents by the Regional office.

IV. Basis for Intended Site Deletion

The following site summary provides the Agency's rationale for the proposed deletion of this Site from the NPL.

Hamilton Island is located adjacent to the Columbia River, approximately one and an half miles downstream from the Bonneville Dam, in Skamania County Washington, 40 miles east of Portland, Oregon. The area surrounding the Site is part of the Columbia River Gorge National Scenic Area. Adjacent areas to the Site are used for commercial, residential and open space.

The Site was used by the U.S. Army Corps of Engineers (USACE) for the disposal of earthen materials and the old town of North Bonneville during the construction of the Bonneville Dam Second Powerhouse between 1977 and 1982.

The Site was placed on the NPL on October 14, 1992 as a Federal Facility. The basis of the listing was for possible releases of arsenic, copper, lead, zinc and toluene above Ambient Water Quality Criteria to the Columbia River and other sensitive ecological areas. The USACE entered into a Federal Facility Agreement on September 24, 1993 with USEPA and the Department of Ecology to conduct a Remedial Investigation/ Feasibility Study and the necessary Remedial Actions.

The Remedial Investigation determined that there was not unacceptable risk to human health or the environment, in fact the only contamination, above federal or state health based levels, detected was low level petroleum contamination in soils. On November 29, 1994 USACE proposed, in consultation with EPA and Department of Ecology to take No Action at the Site. No comments were received in opposition to the proposal.

Human health and ecological risk assessments were performed to assess current or future potential adverse human health or ecological effects associated with exposure to chemicals detected in soils, groundwater, surface water and sediments at Hamilton Island. Based on comparison of site specific analytical data with EPA and State risk-based screening criteria, ecological benchmarks, toxicity values, and the detection frequency and exposure potential of chemical constituents, it was concluded that chemicals at Hamilton Island do not pose an unacceptable risk to human health or the environment, under any land use scenario. Accordingly, EPA will not conduct ''five-year reviews'' at this Site.

One of the three criteria for deletion specifies that EPA may delete a site from the NPL if ''the remedial investigation has shown that the release poses no significant threat to public health or the environment and, therefore, taking of remedial measures is not appropriate''. EPA, with concurrence of Ecology, believes that this criterion for deletion has been met. It is concluded that there is no significant threat to public health or the environment and, therefore, no further remedial action is necessary. Subsequently, EPA is proposing deletion of this Site from the NPL. Documents supporting this action are available from the docket.

Dated: March 30, 1995.

Chuck Clarke,

Regional Administrator, Region 10.

[FR Doc. 95–8882 Filed 4–11–95; 8:45 am]

BILLING CODE 6560–50–M

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. 92–66; Notice 3]

RIN 2127–AF36

Federal Motor Vehicle Safety Standards; Fuel System Integrity

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Advance notice of proposed rulemaking (ANPRM).

SUMMARY: This notice announces the agency's plans to consider upgrading Federal Motor Vehicle Safety Standard (FMVSS) No. 301, *Fuel System Integrity*, by making the current crash requirements more stringent and by broadening the standard's focus to include mitigation concepts related to fuel system components and environmental and aging tests related to components. This notice requests comments on the agency's plans to explore a three-phase approach to upgrading the standard. The notice also requests data, methods, and strategies, which may assist in the agency's regulatory decisions in defining specific requirements and test procedures for upgrading the standard.

DATES: Comments must be received on or before June 12, 1995.

ADDRESSES: Comments should refer to the docket and notice numbers above and be submitted to: Docket Section, National Highway Traffic Safety Administration, 400 Seventh Street SW., Washington, D.C. 20590. Docket hours are 9:30 a.m. to 4 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Dr. William J.J. Liu, Office of Vehicle Safety Standards, National Highway Traffic Safety Administration, 400 Seventh Street SW., Washington, D.C. 20590. Telephone: (202) 366–2264.

SUPPLEMENTARY INFORMATION:

Introduction

The National Highway Traffic Safety Administration (NHTSA) is announcing its plans to consider upgrading Federal Motor Vehicle Safety Standard (FMVSS) No. 301, *Fuel System Integrity*. The purpose of this rulemaking is to further reduce fatalities and injuries from fires resulting from motor vehicle crashes. Specifically, the agency is considering whether to make more stringent the current crash requirements applicable to vehicles with a gross vehicle weight rating (GVWR) of 10,000 pounds (4,536 kg) or less. It is considering also whether to broaden the standard's focus to include ways to prevent or decrease the severity of vehicle fires by exploring regulations related to fuel system components and tests of the resistance of components to environmental and aging factors.

Today's notice outlines NHTSA's plans to explore a three-phase approach to upgrading the standard. In Phase One, the agency would evaluate performance criteria for components to ensure that the flow of fuel from the tank is stopped in a crash. Phase Two would involve defining upgraded crash test performance for frontal, side, and rear impacts (e.g., higher test speeds, additional impact barriers, etc.). During Phase Three, NHTSA would address the effect of environmental and aging factors such as corrosion and vibration on components in the fuel system.

Today's notice also summarizes issues related to vehicle fires and discusses the agency's recent work in this area. The agency is seeking public comment on the merits of the agency's rulemaking efforts to explore alternative ways to upgrade the present standard. Today's notice also supplements a previous notice published on December 14, 1992, in which the agency requested comments about making FMVSS No. 301 more stringent (57 FR 59041, Docket 92–66, Notice 1).

On December 2, 1994, Secretary of Transportation Federico Peña announced a settlement of an investigation by NHTSA of an alleged safety defect in certain General Motors (GM) pickup trucks with fuel tanks mounted outside the frame rails. Under that settlement, GM will contribute over $51.3 million for a variety of safety initiatives. Among other things, the settlement will fund research on ways to reduce the occurrence and effects of post-crash fires. All relevant results of this research will be placed in the public docket for this rulemaking.

The Fire Problem

While vehicle fires are relatively rare events (occurring in only one percent of towed vehicles in crashes), they tend to be severe in terms of casualties. The agency's General Estimates System (GES) reports that, in 1992, approximately 21,000 passenger cars, light trucks, and multipurpose vehicles had a fire related to a crash. Based on an analysis of the agency's Fatal Accident Reporting System (FARS), four to five percent of occupant fatalities occur in crashes involving fire (the fatality being due to burns and/or impact injuries). Overall, the fire itself is deemed to be the most harmful event in the vehicle for about one-third of these fatalities.

An analysis of 1979–1986 National Accident Sampling System (NASS) data (Reference: ''Fires and Burns in Towed Light Passenger Vehicles,'' Docket No. 92–66–N01–001) shows that about 29,000 occupants per year were exposed to fire in towed light passenger vehicles (cars, light trucks, and multipurpose vehicles), of whom three percent received second or third degree burns over at least six percent of the body. The Abbreviated Injury Scale (AIS) defines these burns as moderate and more severe (AIS 2 and greater). Half of those with moderate and more severe burns had second or third degree burns over more than ninety percent of the body; these maximum-severity (AIS 6) burns are always fatal. These estimates are based on all 47 occupants with moderate and more severe burns received in vehicle fires that were investigated as part of the NASS during the eight years from 1979 to 1986.

NASS investigated vehicle fires that involved another 44 occupants with moderate and more severe burns between 1988 and 1990. The eleven years of NASS data suggest that each year 280 surviving occupants and 725 fatally-injured occupants received moderate or more severe burns (AIS 2 or greater). These injuries and fatalities may have been caused by burns or impacts.

NASS 1988 to 1990 data also indicate that potential escape from the fire was made more difficult for most occupants (87 percent) with moderate or more serious burns because they (1) were sitting next to a door that was jammed shut by crash forces, (2) did not have a door at their position, or (3) had a part of their body physically restrained by deformed vehicle structure.

Federal Motor Vehicle Safety Standard No. 301

FMVSS No. 301, *Fuel System Integrity*, first became effective for passenger cars in 1968. The requirements in the current standard apply to all vehicles with a Gross Vehicle Weight Rating (GVWR) of 10,000 pounds (4,536 kg) or less since September 1, 1977, and to school buses that have a GVWR greater than 10,000 pounds (4,536 kg) GVWR since April 1, 1977. FMVSS No. 301 only applies to vehicles that use fuel with a boiling point above 32 degrees Fahrenheit (0 degree Celsius).

FMVSS No. 301 limits the amount of fuel spillage from fuel systems of vehicles tested under the procedures specified in the standard during and after specified front, rear, and lateral barrier impact tests. The standard limits fuel spillage due to these required impact tests to 1 ounce (28.4 grams) by weight during the time from the start of the impact until motion of the vehicle has stopped and to a total of 5 ounces (142 grams) by weight in the 5-minute period after the stop. For the subsequent 25-minute period, fuel spillage during any 1-minute interval is limited to 1 ounce (28.4 grams) by weight. Similar fuel spillage limits are required for the standard's static rollover test procedure, which is conducted after the front, rear and lateral impact tests.

The required impact tests for all vehicles that have a GVWR of 10,000 pounds (4,536 kg) or less are: a 30 mph (48.3 kmph) frontal fixed rigid barrier impact with the barrier face perpendicular to the line of travel of the vehicle or at any angle up to 30 degrees from the perpendicular; a 30 mph (48.3 kmph) rear moving flat rigid barrier impact with the barrier face perpendicular to the longitudinal axis of the vehicle; and a 20 mph (32.2 kmph) lateral moving flat rigid barrier impact in a direction perpendicular to the longitudinal axis of the vehicle (i.e., with the barrier face parallel to the longitudinal axis of the vehicle). The weight of the moving barrier is 4,000 pounds (1,814 kg). A rollover test is conducted following the barrier impacts.

The required impact test for large school buses that have a GVWR greater than 10,000 pounds (4,536 kg) is a 30 mph (48.3 kmph) moving contoured rigid barrier impact at any point and angle. The weight of the barrier is 4,000 pounds (1,814 kg). The static rollover test is not required for large school buses.

The standard does not apply to large non-school buses or other vehicles that have a GVWR greater than 10,000 pounds (4,536 kg).

December 14, 1992 Notice

On December 14, 1992, NHTSA published a Request for Comments notice in the Federal Register (57 FR 59041, Docket No. 92–66, Notice 1) stating that the agency ''is considering initiating rulemaking to upgrade the protection currently provided by'' FMVSS No. 301. The notice also requested answers to specific questions related to test impact speeds, impact barriers, effect of vehicle aging on the likelihood of fire, contribution of occupant entrapment to the likelihood of fire-related injuries, etc.

NHTSA received 35 public comments by October 1994 including comments from most of the major vehicle manufacturers, the American Automobile Manufacturers Association (AAMA), Advocates for Highway and Auto Safety (Advocates), the Center for Auto Safety (CAS), and the Insurance Institute for Highway Safety (IIHS). Commenters raised issues regarding the safety need, the adequacy of the current test procedures, the availability and necessity of developing new test procedures, and the existence and feasibility of countermeasures. Many commenters stressed the need for further detailed investigation of real-world crash data to determine the causes of vehicle fires and fire-related occupant fatalities and injuries. In addition to support for the test procedures currently used in FMVSS No. 301, commenters suggested several alternatives, including substituting the dynamic side-impact test procedures of FMVSS No. 214 for those currently specified in FMVSS No. 301, adding frontal offset crash conditions, and developing new barriers that might be more representative of real-world crash conditions.

The agency has initiated work related to several fire safety issues that need to be considered to define mitigation concepts to reduce fatalities and injuries. Due to resource considerations, not all the safety issues discussed in the previous notice are included in this notice. The issues discussed in this ANPRM include crash conditions, origin of fires, and vehicle age.

Agency Efforts Related to Fuel System Integrity

NHTSA has undertaken the following activities to more-fully understand motor vehicle fires. These include comparing fuel system safety requirements in this country with those in other countries, conducting extensive test crashes related to fuel system integrity, and analyzing data of real-world crashes.

Comparison of U.S. and Foreign Fuel System Safety Requirements

FMVSS No. 301's requirements have been compared to the following foreign fuel system integrity standards: (1) The Canadian CMVSS No. 301, *Fuel System Integrity (Gasoline, Diesel);* (2) the Economic Commission for Europe (ECE) Regulation No. 34, *Uniform Provisions Concerning the Approval of Vehicles with Regard to the Prevention of Fire Risks* (01 Series, Amendment 1, January 29, 1979) (Thirteen European countries have agreed to adopt ECE Reg. No. 34, including Germany, France, Italy, Netherlands, Sweden, Belgium, Czechoslovakia, United Kingdom, Luxembourg, Norway, Finland, Denmark, and Romania); and (3) the Japanese Standard, *Technical Standard for Fuel Leakage in Collision etc.* (Amended on August 1, 1989).

The Canadian CMVSS No. 301 has requirements identical to those of the U.S. FMVSS No. 301.

In terms of application to vehicles: FMVSS No. 301 applies to all vehicles 10,000 pounds (4,536 kg) or less GVWR and school buses over 10,000 pounds (4,536 kg) GVWR. ECE Reg. No. 34 only applies to passenger cars, and the Japanese standard applies to passenger cars and multipurpose passenger vehicles 5,600 pounds (2,540 kg) or less.

In terms of required impact tests: As described above, FMVSS No. 301 requires frontal, rear and side impact tests at 30, 30, and 20 mph (48.3, 48.3 and 32.2 kmph), respectively, plus a static rollover test, for vehicles 10,000 pounds (4,536 kg) or less GVWR. FMVSS No. 301 also requires a 30 mph (48.3 kmph) impact test for school buses over 10,000 pounds (4,536 kg) GVWR.

The ECE Reg. No. 34 requires a 48.3 to 53.1 kmph frontal fixed barrier impact test and a 35 to 38 kmph rear moving flat barrier impact test. The flat rigid barrier weighs 1,100+20 kg. A pendulum can be used as the impactor. ECE Reg. No. 34 does not require a rollover test. The standard requires a hydraulic internal-pressure test for all fuel tanks and special tests (impact resistance, mechanical strength, and fire resistance) for plastic fuel tanks.

The Japanese standard requires a 50+2 kmph frontal fixed barrier impact test and a 35 to 38 kmph rear moving flat barrier impact test. The flat rigid barrier weighs 1,100+20 kg. A pendulum can be used as the impactor.

In terms of test performance requirements: all three standards limit fuel spillage. As in FMVSS No. 301, the ECE Reg. No. 34 and the Japanese standard, in general, also limit fuel spillage to about 1 ounce/min (28.4 grams/min). The Japanese standard lists the ECE Reg. No. 34 and FMVSS No. 301 as examples of equivalent standards.

In summary, FMVSS No. 301 applies to more vehicle classes and to higher vehicle weights than the ECE Reg. No. 34 or the Japanese standard. FMVSS No. 301 requires testing in all crash modes (frontal, side, rear, and rollover). ECE Reg. No. 34 and the Japanese standard require only frontal and rear impact tests. FMVSS No. 301 uses a much heavier moving barrier for impact tests than the ECE and Japanese standards (1,814 kg vs. 1,100 kg). However, FMVSS No. 301 does not require a hydraulic pressure test for fuel tanks, a battery retention requirement, or additional tests for plastic fuel tanks; ECE Reg. No. 34 does. In addition, the ECE Reg. No. 34 requires that ''no fire maintained by the fuel shall occur'' and no failure of the battery securing device due to the impact. Since ECE Reg. No. 34 also requires filling the impacted vehicle's fuel tank ''either with fuel or with a non-inflammable liquid,'' the no-fire requirement is actually interpreted from the observed fuel leakage. It is the agency's understanding that in practice, when the ECE Reg. No. 34 tests are conducted, the fuel tank is filled with non-inflammable liquid.

Safety Issues Related to Vehicle Fires

A. Crash Conditions

The crash conditions discussed in this section refer to real-world crash conditions that result in vehicle fires and their implications for compliance test conditions and performance requirements for the current FMVSS No. 301. To further refine the relationship between real-world and laboratory crash conditions, this notice has examined certain engineering parameters such as impact speeds, impact locations, objects struck, and damage patterns.

Laboratory Crash Test Results

Between 1968 and 1994, the agency has conducted 563 FMVSS No. 301 compliance tests in the frontal impact mode: 14 failures resulted (3%), the last occurring in 1992. Effective September 1, 1976, the standard was amended by requiring rear impact tests for all vehicles and side-impact tests for passenger cars only. Side-impact testing was extended to all vehicles and became effective on September 1, 1977. For model years 1977 through 1994, 331 rear impact and 25 side-impact compliance tests have been conducted; 26 rear impact failures (8%) and 1 side impact failure (4%) resulted. In computing these failure rates, the rollover test is considered a part of the frontal, rear, or side impact test.

The agency conducted a research test program on FMVSS No. 214, *Side Impact Protection*, for light trucks. Since December 1988, 24 crash tests have been conducted, 2 tests produced fuel leakage at a rate higher than FMVSS No. 301 requirements. Both tests used the FMVSS No. 214 test protocol.

Between 1979 and 1986, 12 out of 201 (6%) frontal New Car Assessment Program (NCAP) tests indicated leakage at a rate above the fuel spillage requirements of FMVSS No. 301 at 35 mph (56.3 kmph). In addition, during the same period, NCAP conducted 53 FMVSS No. 301 rear impact tests at 35 mph (56.3 kmph), and 6 (11%) leaked at a rate above the fuel spillage requirements of the standard. Rollover tests were not conducted following any of the frontal or rear impact NCAP tests. Some of these vehicles were retested at 30 mph (48.3 kmph), but none failed. In 1993, NCAP resumed examining FMVSS No. 301 fuel spillage requirements, and added a rollover test following the frontal impact tests. To date, only one of the approximately 80 vehicles tested leaked at a rate above the requirements of the standard at the higher speed.

Between April and June 1993, the agency conducted six baseline vehicle crash tests (all 1993 models) as part of its initial research effort for exploring potential upgrades to FMVSS No. 301. In addition, the Federal Highway Administration (FHWA) conducted a seventh crash test for the agency. Information on the seven tests has been entered into the docket.

The test conditions for the seven crash tests represent a baseline of delta-v (change of velocities), impact barrier, and impact location. The tested cars were chosen based on their high sales volume as well as agency experience with the cars in other test programs.

The six NHTSA tests include two in each of the crash modes: frontal, side, and rear. Three tests used a 4,000-pound (1,814-kg) moving contoured barrier—a frontal impact into a Chevrolet Corsica at 65 kmph (40.5 mph), a side impact into a Toyota Corolla at 49.4 kmph (30.7 mph), and a rear impact into a Ford Escort at 56.6 kmph (35.2 mph). None of these three tests resulted in a loss of fuel system integrity.

The other three tests were: a frontal impact of a Chevrolet Corsica into a 305-mm (12-inch) diameter stationary pole at 56.3 kmph (35 mph), a side impact into a Toyota Corolla with a 1,361-kg (3,000-pound) deformable moving barrier (FMVSS No. 214 side impact barrier) at 87.1 kmph (54.1 mph), and an offset rear impact into a Ford Mustang with the same type of FMVSS No. 214 moving barrier at 84 kmph (52.2 mph).

The only fuel system failure was a ruptured fuel tank from the rear impact to the Ford Mustang by the FMVSS No. 214 deformable moving barrier, resulting in a delta-v of about 39 kmph (24 mph). The head and chest injury measurements on the instrumented driver and passenger dummies exceeded the criteria specified in FMVSS No. 208, *Occupant Crash Protection*. Thus, the survivability of this crash in the absence of a fire is questionable. However, the agency would like to point out that FMVSS No. 208 is for frontal tests and the test dummies used for the tests were not specifically designed to collect impact data for rear impact tests.

The crash test conducted by FHWA was on a Toyota Corolla, which was crashed into a 203-mm (8-inch) diameter stationary pole directed at the fuel tank location, in a side impact orientation at 32.2 kmph (20 mph). There was no fuel system integrity failure. No dummy instrumentation was used in this test.

The agency also conducted other frontal impact tests. These tests primarily consisted of high speed, vehicle-to-vehicle offset crashes. In addition, several side impact tests were conducted using the FMVSS No. 214 test procedure. Since December 1990, a total of 25 crash tests have been conducted. One test, involving a Chevrolet Corsica, resulted in a small fuel leak from the fuel return line (within FMVSS No. 301's limit). This test was conducted in an oblique configuration with a Honda Accord striking the left front corner of the Corsica.

At the request of NHTSA's Office of Defects Investigation (ODI), the Vehicle Research Test Center (VRTC) conducted 24 side-impact crash tests (including one test with no instrumentation to determine appropriate test speed) of the 1973–1987 General Motors full-size pickup trucks and peer pickup trucks of the same vintage. These tests were conducted as a part of a safety defect investigation, EA 92–041. Seven of these tests were FMVSS No. 301 type side impact tests, three were FMVSS No. 214 moving deformable barrier tests, three were vehicle-to-pole side impact tests, and eleven were various vehicle-to-pickup side impact tests. Reports of these tests are included in the public file for EA92–041.

The summary report for this test program notes that the FMVSS No. 301 type tests produced no leaks in a test of a new replacement fuel tank; however, one of the four GM trucks tested with ''as received'' GM tanks leaked an amount in excess of the FMVSS No. 301 requirements in a rusty area. Non-tank components of one Ford and one GM truck did leak during the static rollover test.

In the three GM truck tests using the FMVSS No. 214 barrier, one at 53.1 kmph (33 mph) and two at 72.4 kmph (45 mph), one caused a leak in the seam of the tank which resulted in a damp area, while the other two did not leak.

In the vehicle-to-vehicle tests, the ride height of the striking vehicle was adjusted to simulate heavy braking. At 72.4 kmph (45 mph) with a Taurus striking car, the GM fuel tank significantly leaked at the sending unit, filler nose, and a rusty area and small cut in the tank. Although no leakage was noted from the fuel tank during a similar test of a Ford F–150, significant fuel leakage was noted from the fuel reservoir mounted on the inside of the left rail.

For the 80.5 kmph (50 mph) tests, significant leaks were noted from the GM vehicles (in ''as received'' and new condition), but no leaks were noted during a similar test on an F–150.

In the 96.6 kmph (60 mph) tests, both the GM and Ford F–150 vehicles leaked significant amounts, with the GM truck rupturing and the Ford F–150 trucks being punctured, forming small holes.

One pole test was conducted at 48.3 kmph (30 mph) on a GM pickup truck with significant vehicle damage and significant fuel leakage. In the pole tests, at 32.2 kmph (20 mph) the GM tank leaked significantly, but in a similar test of a Ford F–150, no leakage was observed.

Data Analysis of Real-World Crashes

Accurate data on vehicle fires are scarce, which makes it difficult to define cause/effect relationships under all circumstances. Unlike many other crashes, investigations of crashes involving fire are hampered by the destruction of evidence needed for crash reconstruction and analysis. The origin of fire in vehicle crashes needs to be understood better to help define possible countermeasures and performance requirements.

NHTSA has reviewed real-world crashes involving fuel system integrity at great length. This analysis includes a review of the National Accident Sampling System (NASS) file, a recent analysis by the agency of the Fatal Accident Reporting System (FARS) data, a detailed hard copy study of accident cases involving fire from NASS and

FARS, and an analysis of State accident files.

The NASS review referenced in the December 14, 1992, Request for Comments notice, ''Fires and Burns in Towed Light Passenger Vehicles'' (Docket No. 92–66–N01–001), noted that most fires occurred in crashes with a delta-v of less than 32.2 kmph (20 mph). This figure is from all fires, regardless of injury level.

When the same NASS files were analyzed for occupant burn injuries at AIS 2 or greater, the sample size was very small, even after the 1991 data were added. The delta-v for frontal impacts resulting in fire was estimated to be from 33.8 to 106.2 kmph (21 to 66 mph), with a 66 kmph (41 mph) median, based on 14 cases. The delta-v for side impacts was estimated to be from 16.1 to 66 kmph (10 to 41 mph), with a 43.4 kmph (27 mph) median, based on seven cases. The delta-v for rear impacts was to be estimated from 12.9 to 96.5 kmph (8 to 60 mph), with a 41.8 kmph (26 mph) median, based on 11 cases.

The following are estimates of the delta-v's. For vehicle- to-vehicle crashes, a 32.2 to 64.4 kmph (20 to 40 mph) delta-v range could result from impact speeds in the 64.4 to 128.8 kmph (40 to 80 mph) range for equal mass vehicles. Similarly, the same delta-v range could be the result of other high impact speeds for crashes involving unequal mass vehicles.

The FARS study analyzed real-world crash data related to vehicle fires to establish which barrier design most closely replicates the damage seen in real-world fatal crashes involving fire. Preliminary results of the agency's FARS study indicate that the combined 1979–1992 data from FARS for light vehicles of model years 1978 and later include 9,440 vehicles with a post-crash fire, of which 2,840 were crashes where fire was classified as the most harmful event. Of the latter vehicles, approximately half were involved in single-vehicle crashes, and half were in multi-vehicle crashes.

For frontal and side fatal crashes involving a fire, approximately 60 percent involved multiple vehicles, while for rear-impact crashes involving in a fire, approximately 90 percent of the crashes involved multiple vehicles. Narrow objects, including trees and poles, account for approximately 40 percent of the objects struck in single vehicle crashes resulting in a fire.

The agency recently completed a detailed hard copy study of a sample of accident cases involving fire from NASS and FARS. The detailed case study report has been entered into the docket of this notice. The title of the report is: ''Fuel System Integrity Upgrade—NASS & FARS Case Study,'' a NHTSA sponsored research study, by GESAC, Inc., DOT Contract No. DTNH–22–92–D-07064, March 1994.

The GESAC study selected 150 NASS cases for detailed analysis, which were selected from recent years and involved fire with any occupant injury of AIS 2 or greater. One of the objectives of the analysis was to suggest a laboratory simulation for accidents that led to vehicle fires. The suggested crash simulations include impact mode, speed, barrier, location, and orientation.

The report presents information on a possible barrier test that most accurately ''simulates'' crashes that resulted in ''moderate'', ''severe'', and ''very severe'' fires. A ''moderate'' fire is defined as fire damage to between 25% and 50% of the vehicle surface, a ''severe'' fire has fire damage to between 50% and 75% of the vehicle surface, and a ''very severe'' fire has fire damage to more than 75% of the vehicle surface.

For this analysis, only the cases for which a simulation was defined were included. Simulations were not defined, for example, for cases where the fire originated outside the vehicle or where the crash conditions were too complicated—these events included multiple impacts, undercarriage impacts, or rollover events, etc. Based on these criteria, there were 64 vehicles selected for simulations.

For vehicles receiving frontal damage, the report indicates that a pole would be the most common simulation barrier type. For rear damage, a moving deformable barrier with a partial overlap (a partial width of the vehicle involved in the crash) was cited most often as a simulation procedure. For side impacts, a pole impact was the most common simulation procedure. The GESAC report also presents information on impact speed for these simulations.

For frontal impacts, the delta-v ranged from 23 kmph to 105 kmph (14 to 65 mph) with a 55 kmph (34 mph) medium delta-v. For rear impacts, the delta-v ranged from 11 kmph to 73 kmph (7 to 45 mph) with a 42 kmph (26 mph) medium delta-v. Overlap, which is defined as the percentage of the frontal or rear width engaged in a crash, ranged from 40% to 100% for frontal crashes, with an average level of 72% overlap. For rear crashes, the overlap ranged from 30% to 95% with an average level of 71%. This real-world crash is similar to the Ford Mustang test, discussed in the previous section, that resulted in a ruptured fuel tank.

Based on these analyses, NHTSA tentatively concludes that in developing any new performance requirements, it should consider alternatives to the FMVSS No. 301 barriers in addition to possible changes in impact speeds. Possible alternatives to be considered are changes to simulate single vehicle crashes, pole tests, and offset tests.

NHTSA also needs to consider the likelihood of an occupant surviving the crash forces in high severity crashes that are associated with many fire fatalities. To address this issue, the agency may have to develop new test dummies that are capable of collecting meaningful data at higher impact speeds and in rear impacts.

To further define crash conditions that lead to fires, NHTSA anticipates conducting additional analysis of the FARS and NASS files, the GESAC study, and experimental crash testing. Additional full-scale crashes are being considered to help identify possible upgraded performance requirements.

Response to the Request for Comments Notice

Impact Speeds

FMVSS No. 301 specifies that the frontal and rear crash tests be conducted at 30 mph (48.3 kmph) and the lateral crash test be conducted at 20 mph (32.2 kmph). The December 1992 notice asked about appropriate test speeds.

In response to that notice, Advocates and CAS supported testing with increased impact speed. Specifically, Advocates stated that impact testing for all crash modes should be conducted at least at 56.3 kmph (35 mph). It also stated that the current side impact 32.2 kmph (20 mph) test speed of existing FMVSS No. 301 is especially inappropriate in light of the agency's current consideration of dynamic lateral test regimens for light trucks. CAS stated that based on crash protection technology in new vehicles, the standard should be amended to provide for no fuel leakage in a 72.4 kmph (45 mph) frontal fixed barrier crash, a 72.4 kmph side moving barrier, and a 72.4 kmph fixed rear barrier.

In contrast, Mazda, Mitsubishi, Volkswagen (VW), Toyota, GM, Chrysler, Mercedes-Benz, BMW, Ford Motor Company and the American Automobile Manufacturers Association (AAMA) questioned the need for testing at higher impact speeds or stated that more data are needed before considering such an increase. For instance, Toyota stated that the data and analyses on injuries and deaths from vehicle fires are insufficient to support a compliance test requirement for higher impact speeds. Similarly, Mercedes stated that increased impact speed as part of a compliance test does not appear to have great potential for increasing real-world fire safety. AAMA stated that the difference in impact speeds for side versus front and rear tests is representative and reasonable.

Impact Barrier, Location, and Orientation

FMVSS No. 301 requires either fixed or moving rigid impact barriers for the crash tests as described previously in this notice. In the December 1992 notice, NHTSA posed several questions about the appropriate barrier, including whether the current impact barriers should be replaced by the moving contoured rigid barrier for testing large school buses.

National Truck Equipment Association (NTEA), Mazda, Advocates, VW, Toyota, AAMA, BMW, and Ford said no; and no commenter favored this approach. NTEA objected to extending the existing contoured barrier to other vehicles because of economic considerations. Mazda stated that the FMVSS No. 214 barrier represents real-world crashes better than the contoured barrier.

In the December 1992 notice, NHTSA also asked whether the current barriers are representative of typical real-world crash situations.

While GM and BMW stated ''yes,'' Advocates, Ford, and Volvo said ''no.'' GM stated that the FMVSS No. 301 moving barrier side impact test is an appropriate surrogate for real-world side impact circumstances because it properly measures the fuel system performance *regardless* of component location. Advocates stated that the current perpendicular barrier crash test conditions for frontal and rear impact tests should be replaced by offset and angle impacts. Advocates also suggested that the current side impact test should be replaced by a pole impact test, claiming that such a test is more representative of real-world situations.

The December 1992 notice also asked whether all vehicles with GVWR of 10,000 pounds (4,536 kg) or less should be subjected to the impact test requirements for large school buses. Advocates, VW, Toyota, AAMA, Mercedes, BMW, and Ford all opposed this approach, while no commenter favored it. These commenters stated that the contoured barrier does not simulate vehicles in use now.

Another question was whether the FMVSS No. 214 dynamic side impact test should be incorporated into FMVSS No. 301, thereby replacing FMVSS No. 301's current lateral requirements. Of the twelve commenters responding to the question 11 answered ''yes'' (Mazda, Advocates, Mitsubishi, VW, GM, Chrysler, AAMA, Mercedes, BMW, Ford, and Volvo). Only Toyota said ''no.'' In general, the commenters stated that the FMVSS No. 214 side impact test conditions are more representative of real-world accidents than the current FMVSS No. 301 side impact test requirements. GM and AAMA also suggested allowing the FMVSS No. 214 test as an optional test to the FMVSS No. 301 side impact test. In contrast, Toyota stated that available accident data do not demonstrate the need to replace the FMVSS No. 301 test with the FMVSS No. 214 test.

B. Origin of Fires

The origin of fire in vehicle crashes needs to be understood better to help define possible countermeasures and performance requirements.

The agency's NASS collects information on the origin of fires in towed light vehicles. NASS classifies fires as either minor or major. Fires were classified as major if they involved the whole passenger compartment or several different compartments such as the engine compartment, trunk compartment, undercarriage, etc. Approximately 65 percent of crash-induced light vehicle ''major'' fires began in the engine compartment, 28 percent began in the fuel tank or another part of the fuel system, which includes the fuel supply lines, vent lines, and tank filler neck, and seven percent others.

A recently published British article also concluded that the engine compartment was the most common source of fires. This was attributed to the varied electrical and mechanical systems. The article stated that: ''Investigators found that a disproportionately high number of crash/collision fires start in cars built after 1985—especially where the vehicles are fitted with a fuel-injection system. The investigations also showed that fuel line integrity was more at risk from heat and fire than from impact damage.'' (Ref: ''CACFOA Urges Action by Car Manufacturers on Fire Risks,'' *Fire Prevention,* October 1992.)

C. Vehicle Age and Fires

Both the FMVSS No. 301 evaluation report referenced in the December 14, 1992, Request for Comments notice and more recent analysis of real-world crash results indicate that older vehicles involved in crashes represent a disproportionate number of cases in which there was a fire compared to newer crash vehicles. The agency's FARS analysis showed that vehicle age has a statistically significant relationship to fire in fatal crashes. The agency is conducting an extensive statistical analysis of fire occurrence in fatal and other crashes, as a function of the factors that may influence the likelihood of post-collision vehicle fires. Fire occurrence in FARS was examined in fatal crashes with any occurrence of a fire and in those crashes for which the fire was the ''Most Harmful Event.'' Preliminary results indicate that as vehicles (especially passenger cars) age, the likelihood of a fatal fire increases. The preliminary findings also indicate that while trucks involved in fatal crashes have a somewhat higher rate of fire occurrence than cars, there is not an increase in the likelihood of fire as light trucks age.

Preliminary findings indicate that for cars, light trucks, and vans as a group and with all other factors held constant, a vehicle that is ten years older than another is on average, 29.3 percent more likely to be involved in a fatal fire. Most of this increase is found in cars. Although there is an indication that as light trucks and vans age the probability of a fire increases in fatal crashes, the estimated increase is less than the increase for cars only. However, the number of cases in the current data base is insufficient to produce statistically significant results using vehicle age as a variable.

The combined data for cars, light trucks, and vans do not suggest any relationship between vehicle age and likelihood of involvement in a fatal crash where the most harmful event is fire. Nevertheless, post-crash fires should be avoided to the extent practicable. The possible effect of vehicle aging, therefore may need to be addressed in an upgrade of FMVSS No. 301.

To address the problems associated with older vehicles, requirements may need to address such factors as corrosion, stress cracking, fatigue, and mechanical damage. Various aging tests are available, such as the Salt Spray (Fog) Test (ASTM B117), Humidity Test, Laboratory Cyclic Testing and Electrochemical Testing to simulate corrosive environments. However, if the problem of aging in relation to fuel system leakage and fires were attributed to cracking of fuel hoses, etc. then there are other options. Standards with performance requirements for aging of fuel lines and tanks may be one approach to mitigating this problem.

A question related to this subject was posed in the December 1992 notice. Eight commenters did not support setting up an aging test standard within FMVSS No. 301 (Mazda, Mitsubishi, Toyota, GM, AAMA, Mercedes, BMW, and Ford). Advocates and Volvo supported a component test procedure for aging. VW opposed aging tests on a total vehicle basis but not for components.

Mitsubishi indicated that the design of various replacement parts, their materials and conditions of use and exposure will all vary, and it is not practical to set up a standard specifying time or mileage limits for each part. BMW stated that age-related degradation can occur not only in fuel system components, but also in other parts, components, and structures and could be a significant factor related to degradation, along with differences in vehicle use, operational and environmental conditions and maintenance.

Mazda, VW, and Volvo recommended periodic inspection or replacement of certain fuel system components. Mazda recommended it be performed by the vehicle owner and VW suggested upgraded periodic inspections for vehicle condition be performed under local or state government programs. Mazda also stated that, in the long term, durability testing of critical fuel system components may be advisable.

Advocates strongly supported simulation of fuel system component deterioration and overall system performance loss due to aging effects. Advocates suggested utilizing test standards to detect the deleterious effects of aging and/or exposure to operating or environmental conditions that degrade fuel system integrity.

The agency requests specific comments on the wisdom and practicability of adopting existing test procedures or developing new component test procedures related to aging effects. Individual fuel system components could be evaluated using accelerated aging or corrosion treatment tests.

Phased Rulemaking Approach

Based on the above discussions and preliminary analyses, the agency is considering research and rulemaking activities to amend FMVSS No. 301 to address the following areas:

1. The definition of performance criteria for fuel system components directed at mitigating the cause and spread of vehicle fires.

2. The modification of the existing FMVSS No. 301 crash test procedures and performance criteria to better simulate the events that lead to serious injury and fatalities in fires.

3. The definition of the role of environmental and aging factors such as corrosion and vibration as it affects fuel system integrity, and, if appropriate, the specification of performance criteria related to this area.

The agency is considering whether to initiate rulemaking using a phased approach. The basis of this approach lies in the varying complexity of addressing the different issues listed above. The initial phase would focus on requirements for component performance, the second phase would address system performance, and the third phase would deal with issues related to environmental and aging effects.

Phase 1: Component Level Performance

A. Objectives of Component Approach

The first phase would focus on the specification of performance criteria, at a component level, to attempt to ensure that the flow of fuel from the fuel tank or fuel lines will stop in a crash. It would also focus on minimizing the possibility of an electrical spark of sufficient intensity to act as an ignition source. These specifications would primarily affect fires that originate in the engine compartment. However, they would also help to shut off the fuel flow for all crash modes, including a rollover crash.

Shutting off the fuel flow quickly during or immediately after a crash will eliminate a major fire and fuel source and therefore should both reduce fire incidents and limit the spread of fire, if one were to start. It also appears that many new vehicles incorporate different techniques for addressing this problem. An electric current shut-off device would minimize the possibility of a spark. The performance associated with the fuel shut-off and the electric current shut-off devices can be incorporated into the present crash tests in FMVSS No. 301 or other compliance tests such as those conducted as part of FMVSS No. 214.

As discussed below, the agency is also seeking comment about component test requirements for fuel tanks, fuel pumps, the vehicle's electrical system, and engine fire extinguishes.

The agency requests information on the performance, cost, and practicability aspects of various systems in shutting off the fuel flow and the electric power. The agency also requests comments on ways to develop a practicable test procedure and to define specific criteria with sufficient objectivity that test variability is reduced to a minimum. In the event that other, more appropriate, component tests would satisfy the objectives of the Phase 1 effort, interested parties are requested to provide this information to the agency.

B. Components Now in Use

The agency believes that technology already exists for detecting and identifying conditions when the fuel flow should be shut off. Most new vehicles sold in the United States are already equipped with devices that shut off the fuel pump in any collision that causes the engine to stop.

In some vehicles, sensors detect the consequence of severe engine damage (rotation stops for camshaft, crankshaft or alternator) and immediately shut off the fuel pump. Often, signals from more than one sensor are used to determine if the engine has stopped running and the decision for fuel pump shut-off is left up to the vehicle's onboard computer (such as the Engine Control Unit or Electronic Control Module). Manufacturers also use a ''central'' for collecting and routing crash signals through a central collision detection bus.

Other vehicles are equipped with an inertia switch. Inertia switches can be used to shut off the fuel flow as well as the electric current. Inertia switches operate on sudden impact to open the electrical circuit to the fuel pump or the battery during the crash. An inertia switch can be designed to operate at various levels of impact intensity and direction, and thus could be effective in all crash modes.

The agency requests information on the different components used in vehicles for shutting off the fuel flow or electric current.

C. Component Test Procedures

Fuel system components must operate in a real-world environment surrounded by extreme conditions imposed by modern engine technology. The materials and parts used to assemble fuel system components are already subject to manufacturers' specifications, often derived from or directly related to other engineering standards such as the publications of the American Society for Testing and Materials (ASTM). Some of the test requirements are generic to many of the ASTM standards, for example: vibration, shock, endurance testing, temperature cycling, temperature extremes, compatibility with other materials, etc.

Comments are requested regarding the extent and scope of component test requirements that should be developed as part of the FMVSS No. 301.

The agency has identified the following fuel system and vehicle components as potential candidates for this approach:

a. Fuel tank, including filler pipe
b. Fuel pump(s)

c. Vehicle's electrical system
d. Engine fire retardant/extinguisher

The agency has not included fuel lines in this proposed list because the potential to shut down the entire fuel delivery system when the fuel pump shuts down already exists. Comments are requested about this decision.

a. *Fuel tank, including filler pipe.* During a vehicle crash, the fuel tank may receive crash forces great enough to move or dislodge the tank from its mountings and/or to rupture the tank. If the tank moves significantly, the filler pipe, which is attached to the vehicle body to provide access during refueling, may rupture or break away. If the filler pipe ruptures, fuel could spill. Fuel spillage can be expected under some crash conditions even if the fuel pump is shut off.

One concept would include a check valve located in the filler pipe that is normally closed to prevent fuel flow but that would open automatically during refueling. For example, inserting of the pump filler nozzle could cause the closed check valve to open to permit fuel flow; withdrawing the nozzle would cause the valve to close.

Another concept would use a check valve similar in function to the valves used on heavy truck crossover fuel lines. Applied to the filler neck, this concept would require a large valve, normally open, that would close automatically upon detachment of the filler neck due to a crash.

Comments are requested on how filler check valves should be evaluated during safety compliance tests. For example:

1. Should the filler valve pass a simple go no-go test or should the valve be subjected to many cycles of operation?
2. What test condition would be appropriate for filler check valves: dynamic pendulum or other impact tests?
3. What are the critical engineering parameters that would characterize the proper operation of a filler pipe check valve?
4. Are there alternative ways to control spillage from broken filler pipes?

b. *Fuel pump(s).* Today's passenger cars, light trucks, and vans use electrically operated fuel delivery pumps almost exclusively. Some electric fuel pumps shut down if certain engine operating parameters, such as crankshaft rotation, indicate that the engine has stopped. The agency is interested in how manufacturers use engine sensing to control fuel pump operation and under what conditions the fuel pump is shut off. Specifically:

1. Is current sensing time response adequate to prevent fuel spillage? If not, what would improve response time?
2. How does cessation of engine rotation typically relate to the frontal crash pulse; i.e., after engine disintegration begins, how long does it take for the rotating parts to stop?
3. During this time interval, how much fuel spillage could occur, assuming that the crash has damaged the fuel lines, making fuel spillage imminent?
4. How would sensing engine rotation provide benefit to vehicles involved in a rear impact? rollover? side impact? in any crash where engine damage may be slight?
5. With regard to vehicle rollover, would a separate rollover switch prevent fuel spillage? Could this function be practicably combined in a single switch that would respond to all crash modes?
6. Does fuel pump shut-off prevent gravity-induced fuel flow through the pump?
7. Should a single fuel pump cutoff switch be used to replace the functions currently performed by sensing engine rotational parameters?
8. What advantages/disadvantages would such an installation incur? Some manufacturers currently use inertia switches to interrupt the flow of electricity to the fuel pump when a crash is sensed, thereby causing the fuel pump to shut down.

1. Could an inertial switch be substituted for the systems that sense engine shut down to disable fuel pumping?
2. Under what conditions would such a substitution be impracticable or too costly?
3. What sensitivity of operation should an effective inertia switch have?
4. Can inertia switches be manufactured with sufficient durability and reliability to function for long periods of time unattended in a relatively harsh automotive environment?
5. Are there any other features of an inertia switch that would be detrimental to occupant safety; e.g., what measures must an occupant take to restart the vehicle after an inertia switch has stopped fuel flow?

The agency is also interested if manufacturers or others have any alternative techniques for accomplishing fuel shut-off during a crash.

c. *Vehicle's electrical system.* Other means exist to cause the fuel pump to shut down in a crash. For example, a battery shut-off device could remove all electrical power from the vehicle at the onset of a crash. However, battery shut-off may have unintended consequences if electrically operated door locks or windows are rendered inoperative during a crash. Comments are requested regarding the relative costs and practicability of battery shut-off devices.

d. *Engine fire retardant/extinguisher.* After ignition takes place, vehicle fires could be controlled or extinguished if the proper equipment were available and functioning. Examples of equipment that could help control or extinguish a fire include an onboard fire extinguisher mounted in the engine compartment and fire retardant blankets. A fire extinguisher using carbon dioxide or other gaseous mixtures could be operated by means of existing vehicle sensors (such as the inertia switch) or by other signals. Fire retardant blankets attached underneath the vehicle's hood could drop down onto the engine to smother a fire in the event of a crash. Comments are requested on the costs and practicability of these concepts.

Phase 2: System Level Performance

The second phase would focus on the process of defining upgraded crash test performance for frontal, side, and rear impacts. The present crash tests specified in FMVSS No. 301 require a frontal fixed barrier impact at 30 mph (48.3 kmph), a moving barrier impact of 20 mph (32.2 kmph) into the side of a stationary vehicle, and a moving barrier impact of 30 mph (48.3 kmph) into the rear of a stationary vehicle.

From the information discussed in this notice, it appears that the present tests in FMVSS No. 301 may not be representative of the severity of the crash conditions associated with fatal and severe injury-causing fires. However, it is difficult at this time to define specific upgrades to these crash conditions without further tests. Some potential tests that appear promising for upgrading FMVSS No. 301 test procedures are the offset/oblique tests in the frontal mode, the FMVSS No. 214 offset barrier in the rear test mode and a pole impact or FMVSS No. 214 barrier for the side impact.

As identified in the GESAC study, a key objective for such tests may be to limit the engagement to a narrower area than engaged with current barriers. The specific crash conditions that cause fuel system loss of integrity must be defined, along with an understanding of which crashes would be survivable if fire was avoided. Accident data analyses and crash testing are being considered to further explore these issues, which is expected to be the second phase of rulemaking, which may be conducted concurrently with the first phase.

The agency requests comments on the performance aspects and practicability of this approach.

Phase 3: Environmental and Aging Effects

The third phase would explore the issue of environmental and aging effects on vehicle condition and the possible relationship to fire occurrence. The agency's preliminary analyses of FARS and State accident files indicate that the likelihood of fire increases with the age of the vehicle. The analysis also attempted to determine the possible differences, if any, in the occurrence of fire in fatal crashes in states that typically experience more inclement weather (i.e., snow and ice) and as a result, use more salt and other corrosive substances on public roadways, when compared to other states.

Passenger cars registered in the ''salt belt'' states and involved in fatal crashes were found to have an approximately 25 percent greater rate of fire occurrence in fatal crashes, compared with passenger cars in fatal crashes in the ''sun belt'' states. (It should be noted that when the fire itself was deemed to be the most harmful event in the vehicle, the ''salt belt'' states had a lower rate compared to the ''sun belt'' states.) It is not clear at this time whether this possible relationship between vehicle aging, weather and use of salt and similar substances and fire occurrence may be due to environmental characteristics, to changes in vehicle design, to differences in operator characteristics, or a combination of these factors. If this disparity can be attributed to environmental factors, it may be possible to add environmental tests, such as corrosion, to FMVSS No. 301.

Further work is needed to associate vehicle fires with environmental and aging factors and to define possible performance tests. Because of this, the agency is considering addressing this problem in a third phase of rulemaking.

The agency requests comments on this phased approach. This approach may be implemented either sequentially or concurrently, depending on the timing of the research.

Rulemaking Analyses

NHTSA has considered the impact of this rulemaking action under Executive Order 12866 and the Department of Transportation's regulatory policies and procedures. The agency has determined that this notice is significant under Department's policies and procedures. The agency notes that the increase in vehicle production costs and corresponding increases in consumer costs that would result from upgrading the requirements of FMVSS No. 301 would depend on the stringency and nature of the new requirements and the extent to which present and planned new production vehicles would already meet them, i.e., the type and extent of vehicle changes that would be necessary. Since the agency is still in the research and analysis phase of the rulemaking, including assessing new vehicle hardware and fuel system crash integrity, it cannot provide a cost estimate at this time. Nevertheless, a more comprehensive discussion of this notice's cost impacts is discussed in the Preliminary Regulatory Evaluation, which has been placed in the public docket.

Submission of Comments

Interested persons are invited to submit comments on the proposal. It is requested but not required that 10 copies be submitted. All comments must not exceed 15 pages in length (49 CFR 553.21). Necessary attachments may be appended to these submissions without regard to the 15-page limit. This limitation is intended to encourage commenters to detail their primary arguments in a concise fashion.

If a commenter wishes to submit certain information under a claim of confidentiality, three copies of the complete submission, including purportedly confidential business information, should be submitted to the Chief Counsel, NHTSA, at the street address given above, and seven copies from which the purportedly confidential information has been deleted should be submitted to the Docket Section. A request for confidentiality should be accompanied by a cover letter setting forth the information specified in the agency's confidential business information regulation 49 CFR Part 512.

All comments received before the close of business on the comment closing date indicated above will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Comments received too late for consideration in regard to the ANPRM will be considered as suggestions for further rulemaking action. Since NHTSA will continue to file relevant information as it becomes available in the docket after the closing date, it is recommended that interested persons continue to examine the docket for new material.

Those persons desiring to be notified upon receipt of their comments in the rules docket should enclose a self-addressed, stamped postcard in the envelope with their comments. Upon receiving the comments, the docket supervisor will return the postcard by mail.

Issued on April 6, 1995.

Barry Felrice,

Associate Administrator for Safety Performance Standard.

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