

fuel tank forward of the rear axle, as suggested by Advocates for Highway and Auto Safety (Advocates) in its comment on the ANPRM, because the agency believed such a requirement would be unnecessary and too design restrictive. The agency noted that the fuel tank of the 1996 Ford Mustang, which passed the proposed upgraded test procedure, is located behind the rear axle. The agency stated that this test demonstrated that structural and component designs are more critical factors than fuel tank location in maintaining fuel system integrity.

NHTSA also did not propose to use a heavier barrier (e.g., a 4,000-pound barrier) to simulate impacts by light trucks and sport utility vehicles, again as suggested by Advocates, because in an 80 km/h (50 mph) rear impact offset crash test, a 3,015-pound barrier effectively reproduces the damage profile seen in real world crashes that most often lead to fires. The agency stated that if a heavier barrier were used, the proposed rear impact crash test would no longer reproduce that profile. The agency also noted that it had conducted its research crash tests with a 3,015-pound barrier, and that further research and development would have to be conducted before a heavier barrier could be proposed for use in any test procedure.

#### B. Proposed Side Impact Test Procedure

NHTSA proposed to replace the current lateral (side) impact crash test in Standard No. 301 with the side impact crash test currently specified in Standard No. 214. The Standard No. 214 side impact crash test specifies that a stationary vehicle be struck on either side by a 1,368 kg (3,015 pound) MDB moving at a speed of 54 km/h.<sup>12</sup>

The agency reasoned that test analyses show that the Standard No. 214 side impact crash test exposes a tested vehicle to higher crush energy and crash forces, and to greater changes in velocity, than the existing Standard No. 301 side test. Test data also show the Standard No. 214 test exposes the fuel system components to greater forces.

Moreover, the agency reasoned that replacing the Standard No. 301 side test

with the Standard No. 214 side impact test would reduce certification testing costs for manufacturers because they would only have to conduct one type of side impact test instead of two. The agency also noted that commenters on the ANPRM supported this change, stating that the change would be beneficial from both a safety and a cost perspective.

#### C. Door System Integrity

In the NPRM, the agency also stated that it was considering adding a post-crash door openability test requirement to Standard No. 206.<sup>13</sup> NHTSA noted that NASS data indicate that potential escape from a post-crash vehicle fire was made more difficult for occupants with moderate or more serious burns because, among other reasons, they were sitting next to a door that was jammed shut by crash forces. The agency also noted that real-world crash reports indicate that there were instances in which fire suddenly started several minutes after the vehicle was impacted. Thus, the agency concluded that it is critical that occupants be able to exit the vehicle quickly and easily after a crash that could lead to a fire. The agency requested comment on whether such a requirement was necessary and, if so, what type of requirements would be appropriate, objective, and repeatable.

#### D. Lead Time

NHTSA proposed a lead time of three years for the proposed upgraded rear impact test and one year for the change to the Standard No. 214 side impact test. The agency stated that a three-year lead time appeared to be necessary for the proposed upgraded rear impact test because: (1) All of a manufacturer's makes and models would have to be tested under the upgraded test to determine compliance; and (2) for those vehicles that did not comply, countermeasures would have to be incorporated into designs and then implemented in engineering and manufacturing. The agency stated that only one year of lead time was needed for the new side impact test because few, if any, design changes would be necessary.

NHTSA stated that between the date the final rule was issued and the date it took effect, manufacturers would be allowed the option of certifying vehicles under the existing Standard No. 301 tests or under the new tests. However, manufacturers would have to irrevocably select a test when they certified the vehicle.

<sup>13</sup> Standard No. 206 specifies requirements for door locks and door retention components.

#### E. Costs and Benefits

The agency prepared a Preliminary Regulatory Evaluation (PRE) describing the costs and benefits of the proposed upgraded test procedures.<sup>14</sup> NHTSA estimated that the average cost for vehicles that need to be modified to comply with Standard No. 301's requirements under the proposed test procedures would be \$5 per vehicle. The agency also estimated that 46 percent of the vehicle fleet would have to be so modified.<sup>15</sup> Since approximately 15.2 million vehicles are sold in the United States each year, the agency estimated that the total cost of the proposed rule would be \$35 million each year.

NHTSA estimated that the proposed rule would save from 8 to 21 lives annually, once all vehicles on the road meet Standard No. 301's requirements under the proposed upgraded test procedures.

#### F. Request for Comments on Additional Issues

In the NPRM, the agency also requested comments on several issues. The questions are repeated below.

1. Are there any real-world data, other than the data that the agency has already analyzed for this proposed upgrade, that may better describe the relationship between the risk of occupant injury due to fire and crash severity?

2. Vehicle manufacturers. How many of your vehicle models would need some redesign to comply with the proposed offset rear impact and side impact test procedures? Describe the type and extent of design changes. What costs would be associated with those redesigns? Would you have any significant problems completing necessary redesigns within the three-year lead time? If so, please identify those problems and indicate how much lead time you would need.

3. What impact would the proposed changes have on vehicle safety?

4. Are the proposals sufficient and appropriate for the different sizes and types of vehicles?

5. In the various crash tests that were performed during the research for this rulemaking, the values of head and neck injury criteria measured by the responses of the two front Hybrid III anthropomorphic test devices were

<sup>14</sup> A copy of the PRE was placed in the docket. See Docket No. NHTSA-2000-8248, entry 2.

<sup>15</sup> A NHTSA-sponsored cost study indicated that none of the proposed remedies for the noncompliant vehicles will require major structural redesign that will change the vehicle's structural stiffness (NHTSA Docket No. NHTSA-008248-4, Nov. 16, 2000).

<sup>12</sup> Currently, Standard No. 214 specifies an impact speed of 54 km/h. In the NPRM, the agency proposed to change that specification in Standard No. 214 to  $53 \pm 1$  km/h and adopt it for Standard No. 301. The agency noted that the new specification was very close to the speed ( $52.9 \pm 0.8$  km/h) at which NHTSA's Office of Vehicle Safety Compliance was conducting Standard No. 214 tests. As explained later, we are adopting this proposal. In addition, we are also adopting the proposal to delete several paragraphs of outdated requirements in Standard No. 214 that related solely to vehicles manufactured in the mid-1990s.