procedure for rollaway is unnecessarily stringent and impracticable. Because of the many different combinations of axle ratios, transmission and suspension designs, and tire sizes that have to be accommodated, GM suggests deleting the distance limit altogether. Rather than selecting an "arbitrary" distance, GM stated "park" should be defined as being when the vehicle becomes stationary within five seconds of releasing the parking brake. GM recommended that, if NHTSA insists on using a distance, the distance be increased from 100 mm to at least 400 mm. GM stated that this is necessary to account for extreme situations, such as vehicles with tires greater than 30 inches in diameter, which GM calculates may require up to 40 degrees of rotation to fully engage the parking pawl and eliminate gear lash. Without explaining why, GM also stated that a 10 percent grade was unnecessarily steep and suggested a 2-3 percent grade

A number of lawyers and a consumer safety advocacy group commented that changing the standard as proposed in the NPRM would be detrimental to motor vehicle safety. Many of them offered examples of specific crashes that they believed would be permitted under the relaxed standard. Some of these crashes may be attributable to misshifting.

Mr. Robert Palmer, a Missouri attorney, stated that he handled a "string of cases" in the 1980's in which he said Ford's defective transmission locks allowed the driver to "place the vehicle in what he thought was 'Park' and then the vehicle would move into 'Reverse'." These are misshift situations. He appeared to believe that NHTSA is rescinding the transmission lock requirement altogether, and objected because it is saving "countless" lives.

Mr. Victor Fleming, an Arkansas lawyer, wrote about another misshift accident. He believed that the standard fails to address the issue of "unsuspecting adults" causing rollaway accidents. He also appeared to believe that NHTSA is rescinding the transmission lock requirement.

Mr. Kenneth Obenski, president of a firm that investigates accidents for insurers and litigants, stated that 0.5 percent of the accidents that his firm has investigated involved vehicles parked but inadequately secured by drivers. Some of these accidents may be caused by misshifts.

Mr. John Stilson, a consulting safety and automotive engineer, is engaged as an expert on behalf of a woman injured after her Mazda rolled over her. The accident apparently involved a misshift situation, although it is unclear whether the vehicle was equipped with a transmission lock.

Mr. Ralph Hoar, of Ralph Hoar and Associates, asserted that NHTSA files reveal "numerous recalls by many manufacturers for shift indicator misalignment or problems with the shift mechanism that would mislead the operator into believing that they had selected the intended gear." He concluded that, if vehicle operators are being misled about the transmission position, it follows that the transmission may be between gears. An operator who can remove the key in such a situation would be falsely led to believe that the vehicle is secured. He states that this history of recalls and complaints indicates it is not in the interest of safety to allow misshifts.

Advocates for Highway and Auto Safety's (Advocates) main argument was that the agency has no idea of the magnitude of the safety benefits that it is eliminating in this rulemaking. Advocates stated that NHTSA has not produced any data to support the NPRM's conclusion that the chance of misshifting is small, or that the chance of misshifting coupled with horseplay on the part of children is remote. Advocates quoted the 1990 final rule as asserting that the existing requirement provides "absolute assurance" of transmission lock after key removal. Advocates asserted that "[t]he agency is obligated to determine the extent of the probable exposure, and the degree of risk, to which children will be newly exposed prior to amending the rule

Advocates noted that the 1990 Final Regulatory Evaluation (FRE) acknowledged a "special obligation" to reduce crashes involving children, and expressed the opinion that this may make it worth maintaining the existing rule and requiring the involuntary redesign of some vehicle transmissions.

A related argument of Advocates was that the magnitude of the safety problem is likely much larger than NHTSA's estimates because the number of noncompliant vehicles exceeds NHTSA's figures. Advocates stated that the 1990 FRE predicated its estimate of 50–100 child injuries prevented per year on the assumption that only 4 percent, or 470,000, of the 1987 vehicles were not in compliance. Advocates stated that 40 percent more, or 668,000 vehicles in 1993 permit misshifts. Advocates argued that this increased exposure will be repeated annually and even increased if more manufacturers decide to start producing transmission locks that permit misshifting. Advocates estimated that the NPRM, if adopted,

might result in an additional 50–100 child injuries annually.

Advocates also faulted NHTSA for not providing any information on the number of different kinds of transmissions that would have to be redesigned, or the costs of doing so. It stated that if transmission redesign were enormously burdensome, manufacturers would not have improved from approximately 69 percent compliance in mid-1990 to the 1993 level of well over 90 percent compliance in just two years. Advocates concluded that NHTSA has provided no economic argument to support the NPRM.

Finally, Advocates asserted that NHTSA conducted this rulemaking merely to bring the manufacturers into compliance and to avoid the costs of redesigning defective transmissions. It suggested that NHTSA address noncompliances using existing procedures and not allow misinterpretations of its standards to cause it to "roll back" safety protection. Advocates stated that the current standard is clear, as outlined in NHTSA's interpretation letter to Ford, and that the NPRM represents an improper use of rulemaking authority.

## Agency Analysis of Issues and Adoption of Final Rule

After carefully considering the public comments, NHTSA has decided to temporarily, instead of permanently, reduce the stringency of the transmission locking requirement. Simply replacing the existing requirement with the proposed one is not appropriate. Vehicles manufactured before September 1, 1996 will be subject to a requirement along the lines of the proposal. Vehicles manufactured on or after that date will be subject to the slightly more stringent requirement originally adopted by the agency in May 1990. The rationale for this decision is set forth in greater detail below.

The agency concludes that a change in the locking requirement is necessary because of the consequences of confusion in the industry about the original requirement. The confusion was apparently engendered in part by an event that occurred shortly after the issuance of the May 1990 final rule, i.e., the agency's June 1990 denial of a petition for rulemaking by Mr. W.A. Barr concerning misshifting of transmissions. The industry apparently read these nearly contemporaneous decisions together to indicate that the agency had not intended to address any aspect of the misshift problem in the May 1990 rulemaking on Standard No. 114.