malfunction signal circuit and ground, at the front of the trailer.

AAMA and Midland-Grau petitioned the agency to delete the word "circuit" in the phrase "malfunction signal circuit and ground" in S5.2.3.2, claiming that it could be interpreted as requiring a separate circuit with dedicated power and ground wires.

After reviewing the petitions, NHTSA has decided to amend paragraph S5.2.3.2 to delete the words "and ground" from the phrase "malfunction signal circuit and ground." The agency notes that it did not intend to require a dedicated circuit for the ABS malfunction signal circuit on trailers. The agency agrees with the petitioners that since a "circuit" is defined as an electrical path having both a power source and a ground, the present language could be confusing, and that the language should be changed to avoid being misinterpreted.

TTMA requested that the agency amend S5.1.6.2(a) and S5.2.3.2, which require that the vehicle be equipped with an "electrical circuit that is capable of signaling a malfunction." The petitioner stated that the ABS, not the electrical circuit, should be required to signal a malfunction.

NHTSA agrees that TTMA's requested language is more precise than the wording in the final rule's regulatory text, and amends the regulatory language accordingly.

AAMA, Midland-Grau, and TTMA petitioned the agency to amend S5.1.6.2(c), which currently requires that a truck or truck tractor designed to tow another vehicle have an electrical circuit that is capable of "transmitting" information about a malfunction. The petitioners requested that the word "transmitting" be changed to "receiving."

NHTSA believes that it would be inappropriate to substitute the word "receiving" for "transmitting" since this electrical circuit both transmits and receives information. When towing a trailer, a tractor transmits the malfunction information that it receives from the trailer's ABS to the ABS malfunction indicator lamp in the cab of the tractor or the truck. Even though the agency has decided not to change the word "transmitting" in S5.1.6.2 to "receiving," it has decided to clarify the provision's wording.

In addition to the changes specifically addressed by the petitions, NHTSA has decided to reword all three ABS malfunction circuit and indicator provisions (S5.1.6.2, S5.2.3.2, and S5.2.3.3) to clarify them and make them more consistent in form and wording to each other and to the other parts of the standard.

In particular:

(a) The new <sup>10</sup> S5.1.6.2(a) is written as a general requirement.

(b) The old S5.1.6.2(a) and S5.1.6.2(b) has been combined into one paragraph.

(c) The old S5.1.6.2(c) has been renumbered S5.1.6.2(b) and has been reworded to delete references to trailer failures in a tractor requirement.

(d) The new S5.2.3.2 no longer references a "key switch" or an in-cab ABS malfunction lamp, because those items are not present on trailers.

(e) The new S5.2.3.3 now includes requirements for memory and check of lamp functions.

## C. Tractor Trailer ABS Interface Connector

AAMA petitioned the agency to specify the electrical connector, SAE J2272, Tractor Trailer Interface *Connector*, stating that "the industry will not be able to converge to a single solution in the absence of regulatory direction." AAMA claimed that without regulatory direction, the end users could prevent an industry approach from being implemented, which would result in a proliferation, rather than needed deproliferation, in connector strategies. In its petition for reconsideration, TTMA supported the J2272 connector. However, in a later submission to the docket, that organization withdrew its support of that connector. TTMA now supports a separate connector, but does not favor any one in particular. ATA supports the current seven-pin connector.

NHTSA is aware that the industry is considering several options for powering trailer antilock systems and that it is having a difficult time reaching a consensus. The agency agrees that the SAE J2272 connector is one potentially permissible approach that should be given full consideration by the industry. However, the agency is also aware that the 7-pin configuration of the SAE J2272 connector might not allow the industry to have a one-connector solution in the long term, even if some of its pins are multiplexed. It is NHTSA's belief that the industry understands and can best respond to the future electrical powering needs for trailers, such as antilock braking systems, electronic braking systems, and satellite tracking and communications network. The agency believes that obtaining compatibility provides sufficient incentive for the industry to reach a

consensus to standardize on a connector to comply with the full-time power and in-cab malfunction lamp requirements without the need for an electrical connector equipment requirement mandated by NHTSA. AMA, ATA, TTMA, and brake component manufacturers have been meeting under the auspices of SAE in an effort to reach consensus on the connector issue. These meetings indicate that all parties have placed forward and backward compatibility as an important issue for the industry to resolve and reach consensus. Based on these considerations, the agency has decided to deny the petition from AAMA to specify the SAE J2272 Tractor Trailer Interface Connector (or any other specific connector) as required equipment for tractors and trailers.

IX. Applicability of Amendments and Leadtime

## A. Hydraulic-Braked Vehicles

In the final rule, NHTSA stated that a March 1999 compliance date for installing antilock brake systems on hydraulic-braked single-unit trucks and buses provides sufficient time for vehicle manufacturers and ABS manufacturers to complete the development and testing of these systems. (60 FR 13250-13251) It noted that some Japanese and European manufacturers are currently marketing ABS for medium and heavy hydraulicbraked vehicles and that brake manufacturers expressed confidence that such antilock systems will be available in the United States.

In its petition, ATA expressed concern that NHTSA was requiring hydraulic-braked heavy vehicles to be equipped with antilock brake systems, even though that organization claimed that such systems are not currently commercially available for heavy vehicles sold in the United States. ATA further stated that "different concepts are necessary for hydraulic ABS on medium and heavy vehicles because of dissimilarities" between the braking systems of hydraulic-braked light vehicles and hydraulic-braked medium/ heavy vehicles. Given these concerns, ATA and UPS petitioned the agency to postpone the compliance date for hydraulic-braked vehicles, claiming that no antilock systems are available for these vehicles and such systems, when they are available, would need time to be tested. The petitioners urged the agency to postpone the compliance date for these vehicles until 2 years after the technology is readily available. Further, UPS reiterated its request for a threeyear phase-in scheme of 20 percent/50

<sup>&</sup>lt;sup>10</sup> "New" refers to changes made in today's document; "old" refers to the regulatory text adopted in the March 10, 1995 final rule.