



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
HARRISBURG, PENNSYLVANIA 17120

OFFICE OF
SECRETARY OF TRANSPORTATION

August 19, 2019

The Honorable Raymond P. Martinez
Administrator
Federal Motor Carrier Safety Administration
1200 New Jersey Avenue S.E.
Washington, DC 20590

RE: Docket Number FMCSA-2018-0037

Dear Administrator Martinez:

The Pennsylvania Department of Transportation (PennDOT) welcomes the opportunity to provide comments on the Federal Motor Carrier Safety Administration's Advance Notice of Proposed Rulemaking on the Safe Integration of Automated Driving Systems-Equipped Commercial Motor Vehicles.

Enclosed you will find PennDOT's responses to the questions posted in Docket Number FMCSA-2018-0037.

If you have any questions regarding this submission, please feel free to contact Mark Kopko, Special Advisor for Transformational Technology at 717.783.1903 or markopko@pa.gov.

Sincerely,

A handwritten signature in blue ink, reading "Leslie S. Richards".

Leslie S. Richards, Secretary
Pennsylvania Department of Transportation

Enclosure

1. Do the FMCSRs Require a Human Driver?

1.1 Should FMCSA establish a rule that would prohibit an ADS-equipped CMV from operating outside its designated ODD?

Yes.

1.3 Should FMCSA consider amending or augmenting the definition of "driver" and/or "operator" provided in 49 C.F.R. § 390.5 or define a term such as "ADS driver" to reduce the potential for misinterpretation of the requirements?

PennDOT believes "ADS driver" should be defined within the regulations to reduce the potential for misinterpretation of requirements. It is evident there will be differences when the "driver" or "operator" is an ADS or a human.

2. Commercial Driver's License (CDU Endorsements)

2.1. Should a CDL endorsement be required of individuals operating an ADS-equipped CMV?

PennDOT believes that at this time there does not need to be a separate ADS endorsement for CDL drivers. If the vehicle would require a human to take control of the vehicle at any time, the human driver must possess the correct class, endorsements, and restrictions that exist today for the vehicle the human driver is expected to operate.

2.4. Should a driver be required to have specialized training for ADS-equipped CMVs?

PennDOT believes that a driver should have specialized training for ADS-equipped CMVs; however, since the technology could vary among manufacturers, PennDOT believes the carrier is responsible to ensure its driver employees are properly trained how to use and/or interact with the ADS on the vehicle being operated.

2.5. In an operational model that has an individual remotely monitoring multiple CMVs, should the Agency impose limitations on the number of vehicles a remote driver monitors?

Yes.

2.6. Should a dedicated or stand-by remote operator be subject to existing driver qualifications?

PennDOT believes that if a remote operator has the ability to take control of an ADS-equipped vehicle, the remote operator should be subject to driver qualifications; however, the qualifications may vary. For example, the remote operator should be licensed and know the rules of the road; however, the remote operator may not need to have certain endorsements or restrictions. For example, if a remote operator does not have the capability to control airbrakes, restrictions pertaining to airbrakes may not be necessary.

3. Drivers' Hours of Service (HOS) Rules

3.1. Should HOS rule changes be considered if ADS technology performs all the driving tasks while a human is off-duty or in the sleeper berth, or physically remote from the CMV?

Yes.

3.2. Should the HOS requirements apply to both onboard and remote operators?

Yes; however, they may vary.

4. Medical Qualifications for Human Operators

4.1. Should some of the physical qualification rules be eliminated or made less stringent for humans remotely monitoring or potentially controlling ADS-equipped CMVs?

Yes.

4.2. If so, which of the requirements should be less restrictive for human operators who would take control of an ADS-equipped CMV remotely?

PennDOT believes that if a remote operator has the ability to take control of an ADS-equipped vehicle, the remote operator should be subject to driver qualifications; however, the qualifications may vary. For example, qualifications for a remote operator vs. actual driver may be the same in reference to medical conditions that may result in periods of unconsciousness. An individual with a loss of limb may qualify as a remote operator but not an actual driver, if the remote operating technology does not require use of that limb. Qualifications will vary, depending on the technology used for remote operation.

4.3. Should the Agency consider less restrictive rules for humans who have the benefit of ADS technology to assist them in controlling the vehicle (e.g., technologies that would enable individuals with limb impairments to operate at a level comparable to individuals without such impairments)?

Yes, provided that the medical issue does not prevent the human driver from performing the driving function if the ADS reverts control to a human operator. It would depend on the capabilities of the ADS and the amount of reliance it has for a human driver to take control.

6. Safe Driving

6.1. Should FMCSA consider revising its rules to ensure that 1) any human exercising control of an ADS-equipped vehicle must continue to comply with all the rules under Part 392? 2) a CMV under the control of a Level 4 or Level 5 ADS must satisfy the operational rules?

Yes; however, federal requirements should be reviewed to see if modifications are needed for accommodating both ADS technology and human drivers.

6.2. For example, should FMCSA require that the ADS be capable of identifying highway-rail grade crossings and stopping the CMV prior to crossing railroad tracks to avoid collisions with trains, or going onto a highway-rail grade crossing without having enough space to travel completely through the crossing without stopping?

Depending on the ODD, a vehicle that is designed to travel in automated mode over railroad crossings must be able to determine if there is a potential hazard, i.e. a train is coming. The ADS-equipped vehicle in this case should not be required to stop at all crossings as a blanket rule, unless stopping is required for the ADS to safely determine there are no hazards. If the ADS-equipped vehicle is capable of identifying the hazard while in motion and approaching a railroad crossing, then it would

not need to stop if there is no hazard, but it would need to stop if there is a hazard until it is safe to proceed.

6.3. For scenarios in which the control of the ADS-equipped CMV alternates, or may alternate, between a human and the technology, should FMCSA require that both the human operator and ADS comply with the applicable operational rules?

Yes, however, the rules may vary for what is required when the ADS is in control versus when a human driver is in control.

7. Inspection, Repair, and Maintenance

7.3. Should the inspection period be more or less frequent than annual for an ADS-equipped CMV?

PennDOT believes an annual inspection period may be sufficient for an ADS-equipped CMV. However, see response to 7.4.

7.4. Should inspections be mileage-based or time-based (e.g., 1,000 miles, 3 months or 1,000 hours of operation)?

An ADS-equipped CMV may have the capability to operate for longer periods of time, which could add wear and tear to the vehicle. An annual inspection may continue to be sufficient. However, careful consideration should also be given to how many miles an ADS-equipped CMV can operate within a given year compared to the average CMV. Longer operational periods may require needed repair or maintenance, based on a mileage threshold, before or even after an annual inspection.

8. Roadside Inspections

B.4. Should the Agency require motor carriers to utilize ADS-equipped CMVs that have a malfunction indicator?

Yes.

B.5. Should the Agency require that motor carriers deploying ADS-equipped CMVs ensure the vehicle can pull over in response to Federal and State officials or move out of the way of first-responders?

Yes.
