Occupational Safety and Health Standards Board

Autonomous Tractors and Other Autonomous Equipment Used in Agriculture

Stakeholder Meeting

Tuesday, December 1, 2026

Discussion Topics

The Occupational Safety and Health Standards Board (OSHSB) has prepared this document to guide discussion and gather stakeholder input concerning occupational hazards associated with autonomous tractors and other autonomous equipment used in agriculture. The information gathered will assist Board staff in developing an initial framework for potential future rulemaking.

The topics and questions are intended to encourage discussion, gather technical information, identify potential workplace hazards and protective measures, and obtain input from stakeholders. Each topic will be discussed; however, the questions are intended as a guide and are not meant to limit the discussion. Board staff welcomes additional items for discussion, provided they are supported by verifiable data, and within the topic being discussed.

Topic	Discussion Questions
A. Scope & Applicability	1. What types of agricultural equipment (machinery, tractors, implements) should be included in this standard? 2. Should the applicability be limited by weight, speed, intended use, or other characteristics that could impact employee safety?
B. Definitions	1. Are there different categories of autonomous agricultural tractors or equipment that need to be defined? 2. What terms need to be defined to distinguish autonomous equipment from other agricultural equipment?
C. Equipment Design and Safety Standards	1. What existing consensus standards or other equipment standards should be considered (e.g. ISO 11783, 18497, 25119)? 2. What equipment design features and protective systems are needed? 3. How do we differentiate the various types of equipment (i.e., tractors, sprayers, drones, carriers, etc.)? 4. Is there a preferred/”safest”, obstacle protective system, or combination? 5. How/Do we include the levels of autonomy (partially automated, semi-autonomous, and fully autonomous)?

Topic	Discussion Questions
	6. How do we ensure maintenance and software updates meet OEM standards?
D. Safe Operation Standards	1. What hazards do autonomous equipment have that existing Title 8 standards do not protect against? 2. Do the hazards vary by equipment type, operating conditions, and employee exposure? 3. What considerations are there if there are multiple autonomous machines operating in the same area? 4. Should there be specific field/environmental requirements? 5. Should speed limiting be addressed? 6. What requirements should be in place regarding employees working in close proximity to autonomous equipment, e.g. speed limitations, distance requirements, etc.? 7. What kind of field access controls should be in place to keep employees a safe distance from equipment hazards? 8. What cybersecurity measures, if any, should be required to protect equipment from unauthorized access, hacking, or other malicious interference that could compromise its safe operation?
E. Supervision and Monitoring	1. What level and type of remote monitoring is needed for autonomous equipment? 2. Limitations on number of autonomous equipment running at the same time? 3. Where is the remote supervisor? Within what travel/time distance to any piece of equipment they are supervising? 4. Qualifications to be a remote supervisor/monitor? 5. Should there be a defined process to address system errors (e.g., loss of communication or failed positioning system)?
F. Employee Training	1. Should employee training be required for every piece of equipment that operates in any mode of autonomy? 2. What should be the required elements of employee training? 3. How should employees be notified that autonomous equipment is in use at their worksite or during their shift? 4. Should the employee training be based on levels of responsibility (e.g. specialized training for employees and supervisors based on the equipment's operating level of autonomy))?

Topic	Discussion Questions
G. Prohibited or Restricted Activities	1. Should autonomous operations be limited to specific tasks? 2. Does autonomous equipment need to be limited to specific work areas?
H. Documentation, Reporting, and Recordkeeping	1. What information should be available to demonstrate that autonomous equipment can be operated safely? 2. What specific metric constitutes a reportable "near-miss"? (e.g., A machine braking within a specific safety-field threshold, an unmapped human entering the field, or an unexpected loss of communication between a tractor and an autonomous implement?) 3. What incidents, close calls (near misses), equipment malfunctions, or safety system activations should be documented or reported? 4. How long should employers be required to retain raw sensor logs (LiDAR/camera data)? 5. What documentation proves that the machine safely executed its "safe-state" or controlled-stop protocol during a blackout? 6. How do employers establish that a machine was operating within its certified environmental parameters? 7. What digital "Pre" checklist or tests must an operator complete and log before activating autonomy in a field? 8. Follow up to #7, how is this enforced to ensure checks are occurring? 9. What other records should be maintained, and for how long?
I. Other Issues for Consideration	1. Situations where the owner/lessee/operator of autonomous equipment is not the exposing employer while ensuring effective communication. 2. How can regulations address the advancement of technology for autonomous equipment (e.g. new sensors, software, artificial intelligence, operating systems, and safety systems) while ensuring employee safety?

Resources

- Cal/OSHA Memorandum – Request for advisory committee to discuss possible regulation of autonomous vehicles in agriculture (August 30, 2024), https://www.dir.ca.gov/oshsb/documents/CalOSHA-Memo-Request-for-Advisory-Committee-AC-2.pdf
- OSHSB Autonomous Agricultural Tractors Advisory Committee (March – August 2025), https://www.dir.ca.gov/oshsb/advisory-committee-archives.html

- OSHSB Memorandum – Autonomous Agricultural Tractor Preliminary Rulemaking Activities Updates (November 14, 2025), https://www.dir.ca.gov/oshsb/documents/meetingpacketNov2025.pdf (pp. 216 – 223)