State of California, Department of Industrial Relations
Division of Occupational Safety and Health

Memorandum

Date: June 10, 2016

To: Marley Hart, Executive Officer
Occupational Safety and Health Standards Board
2520 Venture Oaks Way, Suite 350
Sacramento, CA 95833

From: Juliann Sum, Chief
Cal/OSHA

Subject: Division Evaluation of Petition 558 from Lew Barbe, Occupational Safety and Health Services, INC.

1.0 INTRODUCTION AND BACKGROUND

On March 8, 2016, the Division of Occupational Safety and Health (Cal/OSHA) received Petition 558 to amend the California Code of Regulations, Title 8, section 3210 (Guardrails at Elevated Locations). Lew Barbe, Director of Engineering for Occupational Safety and Health Services, Inc., filed the petition.

Title 8 section 3210 includes requirements for protecting employees against falls from unenclosed elevated work locations. Subsection 3210 (a) applies to elevated work locations on buildings and building structures, while subsection 3210(b) pertains to elevated work locations that are not buildings or building structures. Both subsections require the use of guardrails to protect employees from falls. Subsection (c) allows for alternate means of protecting employees from falling from both buildings and non-building locations, such as a personal fall protection system, when guardrails are impractical.

Exception 9 in subsection 3210(b), which is the subject of the petition, pertains to elevated work locations on mobile vehicles and equipment. This exemption permits the use of attached handholds or a secure hand grasp on structural members in lieu of guardrails. The exemption also allows no protection whatsoever if guardrails and handholds are impracticable.

The petitioner requests that exception 9 be deleted. The petitioner states that perimeter guarding is feasible and practical on mobile vehicles and equipment. The petitioner included one example of a personal fall protection system that may be used for tanker trucks and other mobile equipment called TRAM (Total Restraint Access Module).

2.0 CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTION 3210

The Title 8 regulation subject to the petition request is the following:

California Code of Regulations
Title 8. Industrial Relations
Subchapter 7. General Industry Safety Orders
Group 1. General Physical Conditions and Structures Orders
Article 2. Standard Specifications

§3210. Guardrails at Elevated Locations.

* * * * *

(b) Other Elevated Locations. The unprotected sides of elevated work locations that are not buildings or building structures where an employee is exposed to a fall of 4 feet or more shall be provided with guardrails. Where overhead clearance prohibits installation of a 42-inch guardrail, a lower rail or rails shall be installed. The railing shall be provided with a toeboard where the platform, runway, or ramp is 6 feet or more above places where employees normally work or pass and the lack of a toeboard could create a hazard from falling tools, material, or equipment.

EXCEPTIONS:

* * * * *

9. On mobile vehicles/equipment, where the design or work processes make guardrails impracticable, the use of sufficient steps and attached handholds or structural members which allow the user to have a secure hand grasp shall be permitted. Work from the decks, permanent/stationary platforms, runways, or walkways of mobile vehicles/equipment shall be excluded from the requirements of subsection (b) where it can be shown that guardrails or handholds are impracticable by the design or work processes.

* * * * *

(c) Where the guardrail requirements of subsections (a) and (b) are impracticable due to machinery requirements or work processes, an alternate means of protecting employees from falling, such as personal fall protection systems, shall be used.

* * * * *

3.0 FEDERAL OSHA REQUIREMENTS

3.1 Federal OSHA Regulations

Title 29, Code of Federal Regulations (CFR) section 1910.23 requires guardrails at elevated locations to protect employees from falls. This regulation does not have an exemption for elevated locations on mobile vehicles/equipment. Title 29 CFR section 1910.132 requires employers to select, and have each affected employee use, personal protective equipment that will protect the employee from identified hazards.

Title 29 Code of Federal Regulations
Subpart D Walking-Working Surfaces
§1910.23 Guarding floor and wall openings and holes

* * * * *

1910.23(c) "Protection of open-sided floors, platforms, and runways."

1910.23(c)(1)

Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing (or the equivalent as specified in paragraph (e)(3) of this section) on all open sides except where there is entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toeboard wherever, beneath the open sides,

1910.23(c)(1)(i)

Persons can pass,

1910.23(c)(1)(ii)

There is moving machinery, or

1910.23(c)(1)(iii)

There is equipment with which falling materials could create a hazard.

1910.23(c)(2)

Every runway shall be guarded by a standard railing (or the equivalent as specified in paragraph (e)(3) of this section) on all open sides 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toeboard shall also be provided on each exposed side.

Runways used exclusively for special purposes (such as oiling, shafting, or filling tank cars) may have the railing on one side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway of not less than 18 inches wide. Where persons entering upon runways become thereby exposed to machinery, electrical equipment, or other danger not a falling hazard, additional guarding than is here specified may be essential for protection.

1910.23(c)(3)

Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards shall be guarded with a standard railing and toe board.

* * * * *

Subpart I Personal Protective Equipment

1910.132 General requirements

* * * * *

1910.132(d)

Hazard assessment and equipment selection.

1910.132(d)(1)

The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer shall:

1910.132(d)(1)(i)

Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;

1910.132(d)(1)(ii)

Communicate selection decisions to each affected employee; and,

1910.132(d)(1)(iii)

Select PPE that properly fits each affected employee. Note: Non-mandatory Appendix B contains an example of procedures that would comply with the requirement for a hazard assessment.

1910.132(d)(2)

The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.

* * * * *

3.2 Federal OSHA enforcement policy

29 CFR subpart D subsection 1910.23(c)(1) requires fall protection on floors, platforms, and runways in general industry where the fall height exceeds 4 feet. However, federal OSHA issued an Enforcement Memorandum specifically excluding "*moving stock*" and "*rolling stock*" such as "*rail tank or hopper cars and tank or hopper trucks or trailers*" from 1910 subpart D.[1] The OSHA memorandum states that falls from rolling stock will not be cited under 1910 subpart D and that means to eliminate or materially reduce the hazards will be enforced by the General Duty Clause (section 5a of the Occupational Safety and Health (OSH) Act of 1970)[2] where feasible.

The enforcement memorandum also states that fall protection systems are enforced through 1910.132 Personal Protective Equipment where these systems are feasible. It is federal OSHA policy to enforce the use of personal fall protection under 1910.132 and not 1910.23 for all of general industry.[3] By contrast, in California personal fall protection in general industry is enforced under Title 8 section 3210 (Guardrails at Elevated Locations) and not section 3380 (Personal Protective Equipment, the Title 8 equivalent to 29 CFR 1910.132.)

4.0 CONSENSUS STANDARDS

The American National Standards Institute (ANSI) has published a consensus standard regarding the safety requirements for fall protection from elevated working surfaces similar to the Title 8 and federal OSHA regulations. The ANSI standard exempts self-propelled motorized mobile equipment from the requirements. The exemption covers all vehicles and most, but not all, mobile equipment.

---

[1] Federal OSHA Standard Interpretation Memo, "*Enforcement of Fall Protection on Moving Stock*" October 18, 1996 (corrected February 6, 2009) available at:
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=22278

[2] OSH Act General Duty Clause: https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=OSHACT&p_id=3359

[3] OSHA Enforcement Guidance for Personal Protective Equipment in General Industry available at:
https://www.osha.gov/OshDoc/Directive_pdf/CPL_02-01-050.pdf

Mobile tower cranes, for example, are mobile equipment, but are not self-propelled and are therefore not exempt from this ANSI standard.

ANSI/ASSE A1264.1-2007 Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace, Floor, Wall and Roof Openings; Stairs and Guardrails Systems

* * * * *

SCOPE, PURPOSE, AND APPLI-CATION

1.1 Scope.

This standard sets forth safety requirements in industrial and workplace situations for protecting persons in areas/places where danger exists of persons or objects falling through floor, roof or wall openings, or from platforms, runways, ramps, and fixed stairs, or roof edges in normal, temporary, and emergency conditions.

1.1.1 Excluded from this standard are:

private residences; escalators; moving walks; stairs or ramps serving floating roof tanks; floor openings occupied by elevators, manlifts, dumbwaiters, conveyors, machinery, containers; the loading and unloading areas of truck, railroad, and marine docks; **self-propelled motorized mobile equipment** [emphasis added]; platforms; scaffolds; and construction work areas.

* * * * *

The ANSI/ASSE A1264.1-2007 standard is not incorporated by reference in Title 8 regulations or in federal OSHA regulations.

5.0 RATIONALE FOR PETITION

5.1 Guardrails for mobile vehicles/equipment

The petitioner requests that exception 9 should be removed from subsection 3210(b) because perimeter guarding for mobile vehicles/equipment is feasible and practical.

5.2 Personal fall protection systems for mobile vehicles/equipment

The petitioner also included a brochure and specifications for the Total Restraint Access Module (TRAM) fall protection system. The TRAM system consists of a rail attached to the top of a truck, rail car or mobile equipment and a handhold which slides along the rail. The employee attaches their harness or positioning belt to the handhold which can be moved along the length of the vehicle. The TRAM can be used as either a fall arrest or fall restraint system. The TRAM system has been tested to conform to ANSI Z359.1 Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.

5.2 Oregon OSHA requires fall protection on vehicles and mobile equipment

According to information provided by the petitioner, Oregon OSHA requires fall protection in general industry when working 10 feet above a lower level on vehicles, mobile equipment (excluding personnel lifts) and stacked materials[4].

6.0 INTENT OF THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD (STANDARDS BOARD)

The California Occupational Safety and Health Standards Board (Standards Board), in its Initial Statement of Reasons (ISOR) for the rulemaking to adopt subsections 3210(b) and 3210(c), stated that subsection 3210(c) is intended to apply even when an employer meets exception 9 in subsection 3210(b):[5]

> The proposed exception [9] is necessary to address concerns on mobile vehicles and equipment not designed for guardrails at elevated locations 4 feet and higher which are accessed by employees but where sufficient steps and handholds are provided to mitigate the possibility of slips and or falls. The proposed exception is also necessary to address vehicles/equipment such as truck mounted cranes where employees need to access the decks or permanent/stationary platforms where the design or work process (i.e. swing of the crane's counterweights) prohibit the installation of standard guardrails.
>
> * * * * *
>
> [S]ubsection (c), provides that where guardrails are impracticable due to machinery requirements or work processes, an alternate means of protecting employees from falling, such as nets, shall be used. Language is proposed for subsection (c) to indicate that the option of providing alternate means of protecting employees applies to both subsection (a) for buildings and subsection (b) for other elevated locations. The proposed amendments are necessary for consistency and clarity in the requirements of the regulation.

7.0 INTERPRETATION BY THE OCCUPATIONAL SAFETY AND HEALTH APPEALS BOARD (APPEALS BOARD)

Despite the Standards Board's intent that subsection 3210(c) apply to subsection 3210(b), the Appeals Board has issued opinions stating that subsection 3210(c) is not applicable to employees working at unprotected elevated locations on vehicles because exception 9 in subsection 3210(b) takes precedence over subsection 3210(c).

In *A.L. Gilbert Company, Cal-OHSA App. 08-1646-1647,* Denial of Petition for Reconsideration *(September 30, 2010),* Cal/OSHA cited the employer for a violation of subsection 3210(c) for failing to provide fall protection to an employee injured from a fall while working on top of a vehicle where guardrails were not practical. The Appeals Board found that handholds were provided and the employer was in compliance with subsection 3210(b) exception 9. More importantly, the Appeals Board also held that subsection 3210(c) does not apply to vehicles where guardrails are

---

[4] Oregon OSHA Program Directive A-197 available at http://www.cbs.state.or.us/osha/pdf/pds/pd-197.pdf

[5] The ISOR is available at https://www.dir.ca.gov/oshsb/GUARD2.HTML

impractical regardless of handrails being provided. The Appeals Board reasoned that the more specific subsection 3210(b) exception 9 takes precedent over the less specific (although more protective) subsection 3210(c).

In *Estenson Logistics, LLC., Cal-OHSA App. 05-1755, Decision After Reconsideration (December 29, 2011)*, the Appeals Board upheld a violation of subsection 3210(c) for failure to provide fall protection. An employee was working on top of material loaded on a vehicle when the employee fell and suffered serious injuries. The Appeals Board held that subsection 3210(b) exception 9 did not apply because the employee was not working on the vehicle itself, but rather on top of material loaded on the vehicle. The Appeals Board stated that if the employee had been working directly on the vehicle, subsection 3210(c) would have been superseded by subsection 3210 exception 9.

8.0 ANALYSIS

8.1 Appeals Board's interpretation is inconsistent with Standards Board's intent

The Standards Board intention, when establishing subsection 3210(c), was to require personnel fall arrest, personnel fall restraint or other alternative fall protection where guardrails are not feasible. However, the Appeals Board has held that subsection 3210(c) does not to apply to vehicles or mobile equipment where guardrails are not feasible. As a result, where guardrails are not feasible, the use of fall arrest, fall restraint, or alternative methods of fall protection on mobile vehicles and equipment cannot be enforced, even when those types of fall protection are feasible.

8.2 Title 8 is currently less effective than federal OSHA requirements

Federal OSHA requires fall hazards to be eliminated or materially reduced, where feasible, on "rolling stock" under the General Duty Clause as discussed in part 3.2 of this evaluation. Federal OSHA also requires personal fall protection for workers on mobile vehicles/equipment where feasible pursuant to 29 CFR 1910.132 Personal Protective Equipment.

As interpreted by the Appeals Board, Title 8 does not require personal fall protection or other means to protect workers from falls from vehicles/mobile equipment, even if feasible. Title 8 requires guardrails or handholds, and where those options are not practical, no fall protection whatsoever is required.

8.3 Alternate means are available to protect employees from falling from mobile vehicles/equipment

The TRAM system and other similar products are available to protect employees from falling from mobile equipment. Where installation of anchor points on vehicles or mobile equipment is not feasible, such as on airplanes, portable anchor points are available. A portable anchor point consists of a free-standing and mobile telescoping mast with a rotating boom to attach fall arrest equipment. Fall restraint or arrest systems may also use structural members on mobile equipment, such as cranes, as anchor points to provide fall protection.

In addition, many vehicles have been modified by employers so that drivers do not work at heights of more than four feet. For example, some fuel and bulk liquid tankers have tank fittings arranged so that loading and unloading can be carried out from ground level. Other tankers which had valves located at the top of the truck have been modified with extension tools so that valves can be

activated from ground level. Such modifications provide alternatives to employers where it is not feasible to provide guardrails on top of vehicles.

9.0 CONCLUSION

If the petition is granted and exception 9 to subsection 3209(b) is deleted, when employees are exposed to falls greater than 4 feet in height, guardrails on mobile vehicles/equipment would be required where practical, Where guardrails are not practical, their use would not be required, but subsection (c) would require fall arrest, fall restraint, or other means to protect employees from falls in lieu of guardrails. Several methods of fall protection on mobile equipment/vehicles are available, as discussed in part 8.3 of this evaluation.

Alternative fall protection methods should be required to protect employees where guardrails are not feasible. It is recommended that the petitioner's request to amend Title 8 section 3210 to remove exception 9 from subsection (b) be approved.