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PROPOSED PETITION DECISION OF THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD (PETITION FILE NO. 543)

INTRODUCTION

The Occupational Safety and Health Standards Board (Board) received a petition on October 6, 2014, from Jose M. Carrillo representing Carrillo Safety Systems (Petitioner). The Petitioner requests the Board to amend Title 8, California Code of Regulations, Section 1670(b)(17) of the Construction Safety Orders, concerning the use of guardrails for fall arrest anchorage.

Labor Code section 142.2 permits interested persons to propose new or revised regulations concerning occupational safety and health and requires the Board to consider such proposals, and render a decision no later than six months following receipt. Further, as required by Labor Code section 147, any proposed occupational safety or health standard received by the Board from a source other than the Division of Occupational Safety and Health (Division) must be referred to the Division for evaluation, and the Division has 60 days after receipt to submit an evaluation regarding the proposal.

SUMMARY

The Petitioner observed that the 2004 rulemaking for Section 1670(b)(17)[1] noted that federal OSHA 29 CFR 1926.502, Subpart M, Appendix C, II(h)(ii), contained a statement that federal OSHA recognizes that in some cases there will be a need to devise an anchor point from existing structures. Examples given included "guardrails or railings if they have been designed for use as an anchor point."

The 2004 rulemaking proposal would have included requirements that (1) the guardrails be designed and approved by a California licensed engineer, (2) the anchor points designed to provide anchorage would be clearly identified and inspected by a qualified person before and after each use to assure they are in good condition to safely support the intended loads and (3) employees who use personal fall arrest systems (PFAS) attached to guardrails would be required to be under the direct supervision of a qualified person who would ensure that only guardrails that have been designed, inspected and identified to provide anchorage in accordance with the requirements of Section 1670 are used.

[1] Initial Statement of Reasons – CSO 1670(b)(10) and (b)(17), Use of Guardrails as Anchorage for Personal Fall Arrest Systems, heard Nov. 18, 2004.

The Petitioner opines that employee safety would be enhanced if Section 1670(b)(17) was amended to permit the use of engineered systems such as his Safety Anchor Post System (SAPS) which would afford multiple convenient anchorage points for tie-off and also provide nearby anchor points for rescue operations if needed.

DIVISION'S EVALUATION

The Division noted that various subsections of Section 1670 were amended in 2000, including subsection (b)(17) which was changed to prohibit the use of guardrails as an anchorage for personal fall arrest systems. The rationale for this change was because standard guardrails are not designed for the impact loading that would result from a person's fall.

The Division opined that while a specific guardrail (such as SAPS) may be designed to be used as an anchorage, its effectiveness would be dependent on the guardrail being installed and used correctly. Even the strength of the designed anchorage system is dependent on the acquired (cured) strength of the concrete it is embedded in. There are multiple locations on a guardrail that could be used for an anchor point, such as the top or mid-rail or the posts, and an employee might incorrectly assume that the entire railing is safe for tying-off. Furthermore, more than one employee may tie off to a single guardrail at the same time thus imposing potential impact forces in excess of the designed limit.

The Division's evaluation noted that a 2004 rulemaking proposal would have modified Section 1670(b)(17) to permit the use of guardrails for PFAS anchorage under certain circumstances, including an engineered design; however the consensus of stakeholders was that such an exemption would create employee confusion as to which guardrails are designed as anchor points and which are not. Most existing guardrails are not designed to meet the anchorage requirement, and allowing certain guardrails to serve as anchor points will create confusion. Employees have to make quick decisions on where to tie-off and they likely would not have engineering information available to know which guardrails can be used for PFAS anchorage. Allowing some (but not all) guardrails to be used for anchorage will also complicate training (it is simpler to train employees not to tie-off to any guardrail).

Finally, the SAPS tie-off point is located 10-inches above grade; however, to reduce free-fall, the tie-off point should be above the height of the D-ring on the employee's harness.

For these reasons the Division does not believe that the proposed amendment provides equivalent safety in comparison to existing regulations and recommends that the petition be denied.

STAFF'S EVALUATION

The effect of this petition would be substantially the same as the 2004 rulemaking proposal which was withdrawn due to consensus among stakeholders that it would not provide equivalent or superior safety to that currently prescribed in Section 1670(b)(17).

In theory, an anchorage system like the SAPS would seem to enhance safety by providing ready access to anchorage points. However, in practice, there would be a number of adverse consequences.

Most employers have trained their employees NOT to tie-off to guardrails. Standard guardrails must be capable of withstanding without failure, a force of at least 200 pounds applied to the top rail within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge. In contrast, a fall arrest anchorage must be capable of supporting at least 5,000 pounds per employee attached. Obviously a standard guardrail is not a suitable tie-off for PFAS and many employers are concerned that allowing some guardrail systems for anchorage and not others will create confusion which could result in employees tying-off to guardrails which are not capable of resisting the required impact forces.

It is not realistic to assume that employees will be continuously supervised while using engineered fall arrest systems. Allowing an exception for engineered systems such as SAPS could lead to the misconception among many that any guardrail or seemingly secure structural appurtenance is safe for tie-off. Also, the strength of the fall arrest system is dependent on the cured strength of the concrete where the embed is placed.

The Petitioner opines that color identification of the SAPS system would clarify safe points of anchorage for fall protection. However, the safety markings which would identify systems such as SAPS can be obliterated or weathered to become unrecognizable under normal storage and use on a construction site.

Even if the SAPS were permitted, it is still essential that employees only tie-off to the approved anchorage connection point on the SAPS, which is approximately 10” above the slab. Some workers could easily assume the entire guardrail system is approved for anchorage and tie-off to the mid- or top rail which would then multiply the fall arrest force to much greater than the designed force.

Workers might also assume that an anchorage can be used for more than one worker. If more than one employee is tied-off to the same point and both fell, or if emergency responders leaned over the rail while attempting to rescue a fallen worker, the system could be loaded beyond the limits of its design.

All these points were raised the last time engineered PFAS anchorage was proposed, and the present proposal does not satisfactorily address those concerns which remain valid today.

The Petitioner also referred to 1926 Subpart M Appendix C II(h)(ii) which appears to allow the use of guardrails for PFAS anchorage. The Appendix reads in relevant part that <u>in some cases</u> “the Agency recognizes that there will be a need to devise an anchor point from <u>existing</u> structures. Examples of what might be appropriate anchor points are steel members or I-beams if an acceptable strap is available for the connection… guardrails or railings if they have been designed for use as an anchor point.” Board staff notes, however, that 1926 Subpart M Appendix

C is identified as Non-Mandatory Guidelines for Complying with 1926.502(d) [underlines added for emphasis].

This OSHA guideline is non-mandatory and does not provide safety equal or superior to existing California requirements.

Board staff agrees with the Division that the proposed amendment to Section 1670(b)(17) which would permit engineered guardrail/safety anchor posts to be used for PFAS anchorage should be denied.

CONCLUSION AND ORDER

The Board has considered the Petition and the recommendations of the Division and Board staff. For reasons stated in the preceding discussion, the petition is hereby DENIED.