

ADOSH ADVOCATE

Improving Workplace Safety and Health



<http://www.ica.state.az.us>

Darin Perkins, Director

Winter 2003

In This Issue

Fall Protection

Patrick Ryan
Page 1

Education and Training

Calendar

Page 2

New Trainer in Tucson

Page 3

Susan Harwood Grant

Page 3

Fatal Mistakes

Ernie Miller
Page 3

Extension Cords

Mark Norton
Page 4

ADOSH ADVOCATE

Published quarterly by the Arizona Division of Occupational Safety and Health for employers and employees of Arizona. The information in this newsletter is provided as a service and should not be considered as the exclusive source of the requirements of the standards. This document is in the public domain & we encourage re-printing.

Contributing Staff: Patrick Ryan, Ernie Miller, Mark Norton

Kenneth P. Gaut: Design and Layout
ken.gaut@osha.gov

Comments and suggestions are welcome

Arizona Division of Occupational Safety and Health
800 West Washington Street
Road
Phoenix, AZ. 85007
2675 East Broadway
Tucson, AZ. 85716

Fall Protection

This is a summary of the requirements for construction, excluding residential (or residential-like) construction, scaffolding and steel erection. Those requirements will be summarized in future issues.

Construction Industry Fall Protection Requirements:

Unprotected sides and edges, 6 feet (1.8 m) or more above a lower level shall be protected by the use of guardrail systems, safety net systems, or personal fall arrest systems.

Employees working at **leading edges 6 feet** (1.8 m) or more above lower levels must be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan meeting the requirements of paragraph (k) of 1926.502.

Each employee on a **walking/working surface 6 feet** (1.8 m) or more above a lower level where leading edges are under construction, but who is **not engaged** in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.

Employees in **hoist areas** shall be protected from falling **6 feet** (1.8 m) or more to lower levels by guardrail sys-

tems or personal fall arrest systems. If guardrail systems, [or chain, gate, or guardrail] or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee shall be protected from fall hazards by a personal fall arrest system.

Holes (including skylights) more than **6 feet** (1.8 m) above lower levels, must be covered, or have a guardrail system, or employees must utilize a personal fall arrest systems.

Employees on a **walking/working surfaces** shall be protected from tripping in or stepping into or through holes (including skylights) by covers.

Formwork and reinforcing steel: Each employee on the face of formwork or reinforcing steel shall be protected from falling **6 feet** (1.8 m) or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems.

Ramps, runways, and other walkways: Each employee on ramps, runways, and other walkways shall be protected from falling **6 feet** (1.8 m) or more to lower levels by guardrail systems.

Each employee at the edge of an **excavation 6 feet** (1.8 m) or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier.

Each employee at the edge of a **well, pit, shaft, and similar excavation 6 feet** (1.8 m) or more in depth shall be



protected from falling by guardrail systems, fences, barricades, or covers.

Each employee less than **6 feet** (1.8 m) above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards.

Each employee **6 feet** (1.8 m) or more above **dangerous equipment** shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

Each employee performing **overhand bricklaying and related work 6 feet** (1.8 m) or more above lower levels, shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or shall work in a controlled access zone.

Each employee reaching more than **10 inches** (25 cm) below the level of the

walking/working surface on which they are working, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

Roofing work on low-slope roofs, with unprotected sides and edges **6 feet** (1.8 m) or more above lower levels: Protection provided by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. On roofs 50-feet (15.25 m) or less in width the use of a safety monitoring system alone [i.e. without the warning line system] is permitted.

Steep roofs with unprotected sides and edges **6 feet** (1.8 m) or more above lower levels: Protection provided by guardrail

systems with toeboards, safety net systems, or personal fall arrest systems.

Precast concrete erection and related operations such as grouting of precast concrete members, **6 feet** (1.8 m) or more above lower levels: Protection provided by guardrail systems, safety net systems, or personal fall arrest systems, unless another provision in paragraph (b) of this section provides for an alternative fall protection measure.

Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan, which meets the requirements of paragraph (k) of 1926.502.

Wall openings where the outside bottom edge of the wall opening is **6 feet** (1.8 m) or more above lower levels and the inside bottom edge of the wall opening is less

ADOSH Education and Training Calendar

Registration for each course begins no earlier than 30 days prior to the date of the course. Location address and time of course will be determined at the time of registration. All ADOSH classes are free of charge and are subject to change or cancellation without notice.

Date	Course	Location	Trainer	Phone
January 8	Excavation Safety Awareness	Tucson	Glynn Condit	520-320-4229
January 14	Electrical Hazard Awareness	Tucson	Glynn Condit	520-320-4229
January 14	Forklift Train-the-Trainer	Avondale	Joe Gates	602-542-1641
January 17	Lockout Tagout	Tucson	Glynn Condit	520-320-4229
January 22	Asbestos Awareness	Yuma	Fernando Mendieta	602-542-1640
January 23	Welding and Cutting	Tucson	Glynn Condit	520-320-4229
January 23	Personal Protective Equipment	Prescott	Joe Gates	602-542-1641
January 29	Forklift Train-the-Trainer	Tucson	Glynn Condit	520-320-4229
January 30	OSHA Recordkeeping	Phoenix	Joe Gates	602-542-1641
February 4	Welding and Cutting	Payson	Joe Gates	602-542-1641
February 4	Scaffold Safety	Tucson	Glynn Condit	520-320-4229
February 5	OSHA in the Medical Office	Phoenix	Fernando Mendieta	602-542-1640
February 7	OSHA Recordkeeping	Tucson	Glynn Condit	520-320-4229
February 12	Machine Guarding	Tucson	Glynn Condit	520-320-4229
February 18	Fall Protection	Tucson	Glynn Condit	520-320-4229
February 20	Respiratory Protection	Avondale	Fernando Mendieta	602-542-1640
February 20	Walking/Working Surfaces	Prescott	Joe Gates	602-542-1641
February 21	Back Injury Prevention	Tucson	Glynn Condit	520-320-4229
February 25	Electrical, Lockout Tagout	Tucson	Glynn Condit	520-320-4229
February 25	Excavation Safety Awareness	Payson	Joe Gates	602-542-1641
February 26	Back Injury Prevention	Yuma	Fernando Mendieta	602-542-1640
March 4	Welding and Cutting	Prescott Valley	Joe Gates	602-542-1641
March 4	Laser Hazard Awareness	Tucson	Glynn Condit	520-320-4229
March 11	Safety Management	Tucson	Glynn Condit	520-320-4229
March 12	Confined Space Entry	Phoenix	Fernando Mendieta	602-542-1640
March 14	Scaffold Safety	Tucson	Glynn Condit	520-320-4229
March 19	Hand and Power Tools	Tucson	Glynn Condit	520-320-4229
March 20	Hazard Communication	Camp Verde	Fernando Mendieta	602-542-1640
March 25	Electrical Safety	Tucson	Glynn Condit	520-320-4229
March 25	Excavation Safety Awareness	Phoenix	Joe Gates	602-542-1641
March 27	Scaffold Safety	Yuma	Joe Gates	602-542-1641
March 27	Concrete & Masonry Safety	Yuma	Joe Gates	602-542-1641
March 28	Excavation Safety Awareness	Tucson	Glynn Condit	520-320-4229

Trainers may also be contacted by e-mail at joe.gates@osha.gov, fernando.mendieta@osha.gov, sue.oliva@osha.gov, glynn.condit@osha.gov

than 39 inches (1.0 m) above the walking/working surface, protection provided by the use of a guardrail system, a safety net system, or a personal fall arrest system.

Walking/working surfaces not otherwise addressed: Walking/working surfaces **6 feet** (1.8 m) or more above lower levels shall have protection provided by a guardrail system, safety net system, or personal fall arrest system.

Patrick Ryan

Don't Forget

The Voluntary Protection Program (V.P.P.) Seminar is scheduled for January 28, 2003 in Phoenix and again in June 2003 in Flagstaff. Topics discussed will include the requirements to become a member, as well as the benefits for employers and employees. For more information please call Chuck Konitzer @ 602-542-1718 or Mark Norton @ 520-320-4222. The best are VPP members!

New Trainer In Tucson

Glynn Condit has assumed the training responsibilities for Tucson and southern Arizona. Due to Mr. Condit's knowledge in many areas, as well as his previous training experience, ADOSH is offering training courses on topics not previously offered in the Tucson area. Please refer to the training calendar for the schedule of classes for the coming quarter.

Susan Harwood Grant

Congratulations to Gateway Community College and the Southwest Safety Training Alliance for obtaining a Susan Harwood Grant from Federal OSHA. The college and the Alliance plan to work together to create the materials necessary to present the 16-hour standardized safety and health training in Spanish. Grant funds will be used to translate materials and create an instructor's guide, overheads, and Powerpoint presentations.

Fatal Mistakes

In an excavation that had stretched about two miles along a roadway, a nest of various sized conduits was being installed to carry future electrical, data and voice transmission cables to several new construction projects. The excavation was up to 8' deep, and was just wide enough to clear a 24" wide backhoe bucket. The excavation was vertical on both sides. The soil was sandy, alternating with patches of caliche, and contained scattered round rocks and cobbles.

The crew foreman had elected not to order shoring, shields or other protective devices of any kind. He also had forgotten his trench safety training, and had not done his own analysis of the stability of the soil. The field superintendent had also failed to perform this evaluative analysis. No engineer had been consulted to advise about excavation stability.

At the intersection of a proposed new road intersecting the trench line at ninety degrees, two of the conduit lines were to branch off on the line of the new road. The remaining four conduits were to proceed along the original direction. In a hurry to complete the work, the foreman misread the plans, running four conduits to the new line and two along the original line of travel. As a precaution against possible damage, the conduit lines were buried in concrete slurry at all direction changes and

branches. This mistake was encased in hardened slurry when discovered.

The foreman, realizing he had made the error, operated the backhoe and with repeated blows from the bucket mouth, broke up the slurry encasement and the conduit buried in it. He then removed the broken pieces from the excavation with the backhoe. At a point where repairs could be made, new conduit and elbows laid, and the branch re-buried in slurry, he stopped his operation and prepared to go to the pipe yard a few miles away to obtain new pipe and fittings for the replacement. He explained to his three-man crew that the bottom of the trench would have to be re-leveled, the broken pipes cut off square and a new rack installed to support the conduit. He told them he was going to get new materials, and would return shortly.

The crew jumped to the job. Two men went down into the vertical sided trench. One cut off the broken pipes with a saw. The other used a shovel to level the bottom and spread soft dirt on the floor of the trench for a clean, level surface. The third man stayed on the top of the trench, shoveling soft dirt down to the man on the bottom. The man on the top saw a crack start to develop in the dirt at his feet and yelled to his fellow workers. Before he could finish his warning, the side of the trench caved in, hitting one man in the back and lower leg, knocking him out of the way, and burying the second man.

The foreman returned within seconds of the accident and found the man on top trying to make a cell-phone call for emergency help and the man in the trench who had been knocked away frantically trying to dig out the other man. The emergency call was made. The foreman and the man on the surface jumped into the excavation and all three dug as fast as possible to uncover the buried man.

When emergency rescue crews arrived, they removed the three employees from the very hazardous, partially collapsed excavation, explaining that there was no possibility of a rescue since quite a bit of time had passed since the collapse. Eight hours later, emergency crews safely retrieved the body of the buried worker.

The vibration of the back-hoe breaking up the slurry, the exposure of the excavation side walls to the constant desert heat, the exposure of the excavation to constant passing vehicle vibration, and the poor supportive quality of the native soils all contributed to this tragedy. This entire excavation project was an accident waiting to happen. Unfortunately, the accident occurred and an employee died.

Dangerous excavations are all too common throughout the state. Practice trench safety and live!

Earnie Miller

Electrical Extension Cords

ADOSH recently received several questions regarding the practice of plugging one extension cord into another and whether this practice constitutes a violation of ADOSH standards. This issue surfaced as a result of manufacturers placing tags on cords that state, *"Do not plug one extension cord into another."* The individual asking the question wanted to know if this practice would be a violation of 29 CFR 1926.405(g)(2)(iii), which states that "flexible cords shall

be used only in continuous lengths without splice or tap."

It is ADOSH's position that the act of plugging one extension cord into another does amount to a tap and therefore, does not constitute a violation of the above standard. To tap into an electrical extension cord would be to cut into the cord, anywhere along its length, and splice, or wire another cord into it.

If an employer were to connect two or more extension cords together when

those cords contained a tag and statement prohibiting such use, the more likely violation would be that of failing to follow the manufacturer's instructions for use (1926.403(b)(2)). However, even in this situation, the mere act of connecting the cords would not, in and of itself, represent a violation. ADOSH would still have to show the existence of a hazard, such as an overloaded length of cord, or use beyond its rated capability.

Mark Norton

Occupational Fatalities Investigated by ADOSH July 1, 2002 through September 30, 2002

An employee wearing heat-protective clothing during a spin casting operation died as a result of hyperthermia.

An employee was struck and killed by a dump truck that was backing up.

An employee was struck and killed by a truck at a gravel operation.

An agricultural employee driving a front-end loader was killed when the loader rolled off of an embankment.

An employee was killed when he fell approximately 10 feet from a storage shelf.

An employee was crushed by a falling load of hay.

ADOSH
800 West Washington
Phoenix, AZ. 85007