Safety Topic

Safety News State Compensation Insurance Fund Issue Four, 2008

Electrical Safety

Electricity is an essential source of energy for most construction operations. However, fewer sources have a greater potential to cause harm than electricity. Working safely with electricity is possible, if you understand and follow certain basic rules.

By its nature, electricity will take the path of least resistance to the ground. If your body happens to be in that path, even a small amount of electric current can have fatal effects. The risk of shock or electrocution is greatest around metal objects and in damp conditions. Therefore, make sure all electric equipment, switch enclosures, and conduit systems are properly grounded and that all external or damp operations are wired for wet conditions. When working in damp areas, wear personal protective equipment such as rubber gloves and boots; use rubber mats, insulated tools, and rubber sheets to protect you from exposed metal.

Keep electrical systems in good operating condition. Damage and injuries can occur when equipment is defective. So, inspect electrical equipment, outlets, plugs, and cords before each use. Remove, tag, and have repaired any faulty equipment. Make sure outlets and cords are of adequate size and length to prevent electric overload. If cords must cross a traffic area, protect them with planks or other means.

Make sure you and other workers follow lockout and blockout procedures. Treat every electric wire as if it were a live one. Stop using a tool or appliance, if a slight shock or tingling is felt. Turn off the power if the smell of hot or burning substance is detected or if smoke, sparks or flickering lights are noticed.

Contact with overhead power supply lines is a frequent electrically-related killer. Equipment commonly involved in such contact includes portable elevators, pipes, and hoisting machinery. When using high clearance devices continually be aware of the dangers and take sensible precautions to avoid contact with overhead lines. If an overhead line breaks, keep away from the wire and everything it touches, and then call the power company to shut off the electricity. Only qualified electricians should repair electrical equipment or work on energized lines. ❑

TOPIC REVIEW

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Safety Recommendations

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Safety News

News about Occupational Safety and Health in Construction

STATE COMPENSATION INSURANCE FUND
Loss Control Services
P.O. BOX 420807
SAN FRANCISCO, CA 94142-0807

Please forward to the person responsible for your safety program

Employer Education Series

State Fund continues to promote community educational outreach by increasing the quantity and frequency of employer seminars. These seminars are produced and sponsored by State Fund and are open to State Fund policyholders. The seminar topics cover all aspects of worker's compensation and are offered statewide.

As part of State Fund's Employer Education Series, the local State Fund Loss Control departments offer safety seminars dedicated to loss prevention. They feature safety training targeted to specific industries and safety topics of interest to California employers. Various programs in the series are developed in conjunction with State Fund insured Group Programs and external affiliates and partners. Some of these partners are occupational safety and health providers such as Cal/OSHA Consultation Service, the Department of Health Services, and the University of California.

The goal of State Fund's Employer Education Series is to present valuable information from recognized safety and health experts to enable employers to reduce the frequency and severity of workplace injuries, facilitate regulatory compliance, and increase business profits.

The program venues provide the opportunity for attendees to have their workplace safety questions immediately and personally answered by industry experts. The typically half-day seminars are usually held at regional State Fund offices. To learn what programs are scheduled in your area, visit www.scif.com and click on Seminars. ❑

Reporting Work-Related Injuries

State Fund's Claims Reporting Center (1-888-222-3211) is available 24 hours a day, 7 days a week for policyholders to report injuries as soon as they occur. Agents will do the necessary paperwork to get the claim started and refer the injured to the designated physician or provider.

Within 8 hours of any serious illness or injury (requiring hospitalization over 24 hours, other than for medical observation or where there is permanent employee disfiguration) or death occurring in the workplace or in connection with employment, employers must report the incident to the Division of Occupational Safety and Health. ❑

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News About Occupational Safety and Health in Construction

Safety News

ISSUE FOUR, 2008

STATE COMPENSATION INSURANCE FUND

In This Issue

STATE COMPENSATION INSURANCE FUND

Raise Crane Safety Awareness

Accidents involving cranes, booms or buckets rarely happen, but when they do they're serious, often fatal. To prevent mobile crane accidents, employers must ensure that only persons who are trained, authorized, and qualified to operate cranes and hoisting apparatus be permitted to run them and only after a qualified person has visually inspected the crane's operating mechanism, rigging, and ground condition prior to a work shift.

Employer should develop and implement standard operating procedures for cranes including written plans for critical lifts. Crane operators should be trained on the crane they'll use and in principles of set-up, rigging, hoisting, extending the boom, swinging a load, pinching and crushing points, swing radius warning barriers, and power line safety etc. Additionally, riggers and ground workers should be trained in the hazards of working around mobile cranes.

Before crane activities begin, a qualified person should inspect the work site to assure it complies with safety requirements and pertinent regulations. The crane operator should use the manufacturer's load chart to know or calculate the load's weight. The load should always be kept under control and never be increased above the crane's rating. Crane operators should follow the manufacturer's procedures for proper load rigging, outrigger deployment, and stabilization and for assembly, disassembly and maintenance procedures. For multiple lifts from one location, the condition of the ground and blocking materials should be regularly checked to ensure the crane stability. Cranes must not be operated with wheels or tracks off the ground unless weighted properly on outriggers. The load should be safely landed and properly blocked before it's unhooked or unslung.

Operators should check for overhead power lines, excavation edges or other obstacles and comply with regulations for safe working distances. The crane's swing radius should be barricaded to keep unauthorized persons from entering areas of pinch points. Hoisting or moving suspended loads over workers and others within the crane's swing radius should be avoided. All traveling cranes should have proper clearance between the crane and any stationary structures or material and no one should ever be allowed to ride on a load that is being lifted. The operator should respond to signals only from the appointed signal person, but must obey a stop signal at any time. When workers are properly trained and follow standard operating procedures, crane-related accidents and injuries can be prevented. ❑

The Expert's Corner

Everything In Its Place

One of the first things to be sacrificed to increased production is good housekeeping – clear aisleways, orderly workstations, and efficient disposal of waste. While it is not uncommon to see these priorities fall by the wayside as a business grows, it is important that they be re-implemented for safety, efficiency, and productivity.

Unclutter the Aisleways

Keeping aisleways clear and clean reduces the risk of injury due to slips, trips, falls, and overexertion. Production waste – such as grease, fibers, sawdust, and other particulates – contributes to the occurrence of slip and fall injuries. Reduced friction between the employee's shoes and walking surface also increases the physical demand of material handling tasks. A regular schedule for cleaning up production waste should be established and monitored.

Larger obstructions – such as boxes and tools – contribute to the occurrence of trip and fall injuries. Such obstructions can cause an employee to take a longer route to place a load. This increases the duration of the push, pull, or carry exertion, reducing efficiency and productivity and increasing the risk of physical injury. Obstructions closer to the beginning or end of the task may cause the employee to complete it by using an awkward posture – bending forward or twisting at the waist. Handling

a load in these awkward postures increases the risk of low back injury. Make sure that adequate space is provided for storage of inventory and tools and have a supervisor periodically check for obstructed aisleways.

Keep Workstations Clear

Individual workstations should be kept clear and clean to reduce the risk of injury due to extended reaches and other awkward postures. Extended reaches create additional loads on the shoulder and low back. Shadow boards contain outlines of designated tools to show where they should be stored and can be used to maintain efficient placement of tools and equipment within desired reaching zones. Frequently used items should be within 16" and other items within 27".

Reduce Demands of Waste Disposal

Solid garbage cans can create a suction force between the bag and the can. Lifting a bag out of a solid can often causes the worker to handle the load with hands above shoulder height. An open frame receptacle can be used to hold the bag, eliminating the suction force and allowing the bag to be slid out of the side rather than lifted overhead.

Ryan Horton is an Ergonomics Consultant with State Fund. ❑

Trenching And Excavation Safety

Trenching and excavation are among the most hazardous activities in construction work. However, with daily site inspections, good planning, hazard education, and safety training, most unfortunate incidents can be anticipated and prevented.

Although, trenching or excavation accidents can result from a number of different factors, cave-ins present the greatest risk. Common causes for cave-ins include inadequate shoring, misjudgment of soil condition, defective shoring materials, failure to evaluate changing weather conditions, heavy loads in the area, lack of training or technical knowledge, or incorrect orders.

To guard workers from cave-ins or collapse of nearby soil structures and shield them from material that can fall or roll into an excavation or trench, protective systems such as shoring, sheeting, shielding, sloping and benching should be installed. Factors that influence the kind and amount of shoring include:

- **Depth of trench** – Protective measures must be taken for trenches between 5 and 20 feet deep. If there's a possibility of soil movement, even in shallower trenches, it must be shored. A registered professional engineer must design the protective system for excavations over 20 feet deep.
- **Soil classification** – The more liquid the soil, the more it must be protected from cave-ins.
- **Change in weather conditions** – Trenches

Continued on next page

Electric Equipment And Workspaces

Electrical current is found in power lines, transformers, breaker boxes, and power outlets and switches. Exposure to electric current can cause shock, injury and electrocution. Proper guarding and clearance around electrical equipment can prevent accidental worker exposure to electrical currents.

To avoid the risk of accidental shock, live electrical components operating at 50 volts or more must be guarded with covers or other permanent barriers to prevent accidental contact by workers and their tools. Equipment can also be locked behind an enclosure, in a room, or at an elevated height. These areas should have restricted access and warnings against unauthorized entry. Permanent markings on electrical equipment with the voltage, current or wattage provide power output information for workers.

Electrical boxes and equipment are best stored in areas free from moisture, chemicals, and excessive temperatures. Electric cabinets with ventilation holes need to remain clear to allow air circulation. Electric parts that ordinarily spark or arc require covers and isolation from combustion sources. Equipment should be securely mounted to the surface that it rests on.

There should be adequate working space to allow workers to safely maneuver around electrical equipment. Electrical equipment with a voltage of 0-150 requires 36 inches of clearance. A voltage of 151-600, where there are energized parts on one side, also needs 36 inches of clearance. Equipment with a voltage of 151-600 and exposed energized parts on one side and grounded parts on the other side requires 42 inches clearance; equipment with exposed energized parts on both sides of the workspace must have 48 inches clearance.

The clearance workspace around electrical equipment is not intended for storage. The area should be kept clear to allow safe movement and to prevent a fire hazard. Electric equipment workspaces require adequate lighting for safe work; light operating switches should not be near live electrical feeds. Enclosures need at least one entrance and enough headroom to work safely.

With adequate clearance and guarding around electrical equipment, workers can avoid accidental exposure to electric shock. ❑

Continued from previous page

safely sloped or shored in dry weather can become deathtraps when wet. Even hard-packed soil can become unstable after a rain.

- **Heavy loads in the area** – Nearby structures such as buildings, curbs, trees, utility poles, and construction equipment can put added stress on trenches and excavations. So, heavy equipment should never be operated or parked next to a trench.
- **Vibration** – Trenches near a roadway or where other operations can create vibration should have shoring or sloping designed for those conditions.

The California Occupational Safety and Health Administration (Cal/OSHA) requires a competent person to daily inspect the trench or excavation for possible cave-ins, failures of protective systems and equipment, hazardous atmospheres, or other hazardous conditions and to ensure that workers can quickly get in and out of the trench if a dangerous condition is noted and stop all work until the problem is corrected. An inspection must again be made after a rainstorm or any change in conditions that could weaken the trench.

For work at night or in the dark of morning, enough illumination should be provided so that movement of workers and equipment can be easily seen. For more on trenches and excavations, visit www.osha.gov/SLTC/trenchingexcavation/index. ❑

Warm Up To The Job

Working in cold conditions can result in cold stress or hypothermia, which negatively affects worker health and safety. Construction workers can develop cold stress when working outdoors on a cold day; in an unheated building; in cold water, rain, or snow; or while handling cold objects or materials.

Once the body loses its ability to maintain a normal temperature, the body temperature lowers, and symptoms such as violent shivering, dehydration, numbness, frostbite, or immersion foot (trench foot), slow or slurred speech, confusion, hallucinations, a weak and irregular pulse, or unconsciousness can occur. Manual dexterity also decreases with cold and can result in unsafe work practices.

Employers can protect workers from cold stress by providing training, controlling temperature and wind when possible by using heaters and windbreaks, rotating workers in cold jobs, scheduling work at warmest times, encouraging self-pacing and extra breaks if necessary, establishing a buddy system, and keeping first aid supplies and equipment available. Workers can prevent cold stress by dressing with warm, layered, proper insulated and well-ventilated clothing; seeking warm locations during breaks; and replacing lost fluids with warm, sweet, non-caffeine-containing drinks.

Certain people are more susceptible to cold stress – people who are not physically fit, have a chronic illness, drink alcohol or take drugs (including prescription drugs), are wet or damp from work or weather, are fatigued, are exposed to vibration from tools, don't wear the right clothing, or are not used to working in cold conditions. By taking the necessary precautions, employers and workers together can minimize the potential for cold stress. ❑

Temas de Seguridad

Safety News State Compensation Insurance Fund Número cuatro de 2008

Seguridad eléctrica

La electricidad es una fuente esencial de energía para la mayoría de las operaciones de construcción. Sin embargo, pocas fuentes tienen un mayor potencial para causar daño que la electricidad. Es posible trabajar de forma segura con la electricidad, si se entienden y se cumplen ciertas reglas básicas de seguridad.

Por su propia naturaleza, la electricidad sigue la ruta de menor resistencia a tierra. Si resulta que su cuerpo es parte de esa ruta, aún una cantidad pequeña de electricidad puede tener resultados mortales. El riesgo de choque o electrocución es máximo alrededor de objetos metálicos y en condiciones húmedas. Por lo tanto, es importante asegurar que todos los equipos eléctricos, cajas de interruptores y sistemas de tuberías eléctricas estén debidamente conectados a tierra y que todas las operaciones a la intemperie o cercanas a la humedad cuenten con cableado apto para condiciones húmedas. Al trabajar en áreas húmedas, use los equipos de protección personal, tales como guantes y botas de hule, tapetes de hule, herramientas ais ladas y láminas de hule para protegerse contra el metal expuesto.

Mantenga los sistemas eléctricos en buenas condiciones de funcionamiento. Los equipos defectuosos conducen a daños y lesiones. Por lo tanto, se deben inspeccionar todos los equipos eléctricos, tomas de corriente, enchufes y cordones antes de cada uso. Saque de servicio, rotule y haga reparar cualquier equipo defectuoso. Asegúrese de que las tomas de corriente y los cordones eléctricos sean de tamaño y longitud apropiados para prevenir sobrecargas eléctricas. Si es necesario que un cordón atraviese un área con tráfico, se debe proteger con tablones o por otros medios.

Asegúrese de que usted y los demás trabajadores cumplan con los procedimientos de bloqueo y etiquetado. Trate cada alambre eléctrico como si estuviera vivo. Deje de usar una herramienta o dispositivo eléctrico si siente un choque ligero o sensación de cosquilleo. Desconecte el suministro eléctrico si huele una sustancia caliente o quemándose, o si ve humo, chispas o luces parpadeantes.

El contacto con tendidos eléctricos aéreos es una causa frecuente de muerte por electrocución. Los equipos comúnmente involucrados en ese tipo de contacto son los elevadores portátiles, tuberías metálicas y equipos para izar materiales. Cuando se usan equipos altos, siempre se debe estar alerta a los peligros que involucra su altura y tomar precauciones sensatas para evitar el contacto con tendidos eléctricos aéreos. Si se rompe un cable eléctrico aéreo, manténgase alejado del mismo y de todo objeto que el cable toque; y después llame a la empresa eléctrica para que desconecte la electricidad. Sólo electricistas capacitados deben reparar equipos eléctricos o trabajar en tendidos eléctricos energizados. ❑

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Recomendaciones de seguridad

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