

# Managers & Supervisors Legal Safety Responsibilities

Understanding California  
OSHA & IIPP Requirements

# Why Are We Here

- Communicate Safety Responsibilities to Managers & Supervisors and discuss Cal OSHA requirements.
- Review recent incidents and injuries and discuss severity.
- Discuss supervisory engagement in the incident investigation process and need for support for documenting written procedures.

# CCWD Incidents Last 18 Months

21. **Sun Valley Avenue Gas Line Hit 3-15-11**
20. **UTV Accident at Canal 3-4-11**
19. **Tree Trimming Concern at Los Vaqueros 1-19-11**
18. **Pacheco Gas Main Incident 1-6-11**
17. **Los Vaqueros Flagger Incident 12-17-10**
16. **Lexus Incident 8-3-10**
15. **Rectifier Electrical Shock Incident 7-8-10**
14. **Meter Vault Lid Incident 6/3/10**
13. **Parkside Dr Probing Incident 5/14/10**
12. **Middle River (AIP) Barrier Post Incident 4/20/10**
11. **Electric Shock Incident at Kirker Pass PS 4/12/10**
10. **Seminary PS Electrical Incident Investigation**
9. **Golf Club Rd Pump Hose Incident 3/27/10**
8. **Brick Wall Collapse on Leg/Heel 2/11/10**
7. **Concord Maintenance Slip Incident 1/20/10**
6. **Laceration While Using Impact Wrench 1/20/10**
5. **Caustic Day Tank Compressed Air Hazard 2/04/10**
4. **Lessons Learned from Gregory Gardens Excavation 2/01/10**
3. **Employee Inhaled Ozone 12/07/09**
2. **Employee injured while getting out of truck 11/02/09**
1. **Near-miss incident: Mobile crane tipped 10/21/09**

## 3/15/11 Sun Valley Gas Line Incident



- The crew then set up traffic control, began jack hammering, and began excavation with backhoe.
- Hand digging was performed within 2' of gas marks.
- The crew followed the policy of probing 12 inches or more and mechanically digging 6 inches.
- The backhoe bucket hit gas service at 3' deep and 29" away from the PG&E yellow gas service marks.
- The crew leader blocked the street on both ends and notified the affected houses.
- PG&E incorrectly marked the gas line by 29" and mistakenly located the parallel abandoned copper line which was approximately 30" west of the active plastic line.
- District crews attempted to locate the gas service with a metal detector but it did not pick up the copper trace line.
- The locating wand (Cable Locater) also did not work as there was no electrical current to detect in the copper locate wire on the gas



## Incident Review #4

1/6/11. During a new main installation project off Pacheco Blvd, the Heavy Crew struck and ruptured a 2 inch gas main during excavation activities. The gas main was marked, and the crew had probed, located and excavated the gas main about 10 feet away from the rupture point. However, old road pavement had made it impossible to probe further. The crew decided to use a backhoe to scrape away the pavement, but the gas main was located just underneath the pavement at an unexpected and shallower depth. The crew was installing the new main using preliminary designs issued from Engineering with an understanding they were being used for construction.



Chronicle / Eric Luse

**An energy company was convicted Friday of six felony counts and will pay \$15 million in connection with a 2004 gasoline pipeline explosion in Walnut Creek that killed five construction workers and injured four others.**



### **Incident Review #3**

**5/14/10.** At Parkside Drive, the Service Crew was working in an excavation and probing soil for buried utilities. Markings for buried utilities were present including a red-colored marking for PG&E electrical power lines in a sand-filled trench. The crew probed, excavated, and exposed three buried electrical conduits. The exposed electrical lines were within 1" to 2" of the red marking. An orange communication marking was within a few inches of the electrical marking. The crew probed using a steel probe instead of a fiberglass probe as the fiberglass probe was broken. The District's Excavation SOP requires use of a non-conducting probe in such cases. The steel probe struck and penetrated yet another buried electrical conduit. The steel probe also penetrated into the 21 kilovolt power cable within the conduit. Fortunately, the power line grounded presumably through the probe to the ground then faulted before anyone was injured.

A 28-year-old male municipal utility worker was electrocuted when a backhoe struck a 4,100 volt underground electrical transmission line. A four-man crew was attempting to determine the source of a water leak in front of a private home and had dug a trench to examine the water lines. The victim was standing on the lawn and holding a shut off key that was attached to a water valve when the backhoe severed the electrical transmission cable. The electrical current traveled from the transmission line, through standing water, to a copper pipe, to the metal shut-off key, electrocuting the victim. The backhoe operator was not injured.

**TUOLUMNE, Calif. 8/22/2010 (AP) – PG&E worker who was electrocuted while working to provide service to a Tuolumne home. PG&E spokeswoman Nicole Liebelt said Monday that 57-year-old Gerald Biedinger suffered fatal injuries while operating digging machinery. The Angels Camp man had worked for PG&E for 33 years.**

2008: A contract worker installing electrical cable at a Consolidated Edison power substation in Queens was electrocuted Thursday when he touched a highly charged cable, the authorities said. “A contractor was excavating and installing grounding cable in the substation,” said Alfonso Quiroz, a Con Edison spokesman. “It appears he came into contact with an energized cable.



## **Incident Review #1**

**While spraying herbicide along the fence line at the canal, a driver of a Polaris Ranger decided to descend a wet, grassy slope of over 40 degrees. The driver said “hang on” to the UTV passenger. The UTV almost rolled over and then struck a tree. The driver was ejected and injured his neck. Neither the driver nor the passenger were wearing seat belts.**

# Research from CPWR

- The Bureau of Labor Statistics Census of Fatal Occupational Injuries identified **253** heavy equipment related deaths on construction sites in the Excavation Work industry for the years 1992–2002.
- Heavy equipment operators and construction laborers made up 63% of the heavy equipment- and truck-related deaths.
- **Backhoes and trucks were involved in half the deaths.**
- **Rollovers were the main cause of death of heavy equipment operators.**

**Ensuring adequate rollover protective structures for heavy equipment, requiring fastening of seat belts, adoption of a lock-out/tagout standard, establishing restricted access zones , and requiring spotters for workers who must be near heavy equipment .**



## **Incident Review #2**

12/17/10. During crack sealing activities at the Los Vaqueros Marina Road, passing vehicles nearly struck crew members on two occasions on the same day.

# CalTrans

- Since 1924, 175 California Department of Transportation employees have been killed on the job. One of the biggest hazards is from motorists who do not exercise caution while driving where highway workers are present.

## 1/19/2011 Tree Trimming Incident



- An employee was asked by his supervisor to trim a tree. The employee declined and stated that it was dangerous to trim branches that were touching high voltage power lines. The employee told his supervisor to contact PG&E.
- Several weeks later, the supervisor asked two other employees to trim the very same tree. The employees prepared for the task and visited the job site with the supervisor. When the employees saw that four high voltage power lines were touching the tree, they said that they declined to trim the branches that contacted the power lines and told the supervisor to contact PG&E. The two employees instead trimmed lower branches from another tree hanging that were not contacting the lines.
- The supervisor said that he had not asked any staff to trim the branches touching the power lines
- The supervisor also said that he did not initially notice that the power lines were contacting the tree and that they recently became overgrown. The supervisor contacted the owners of the power lines to trim the tree

# Cal-OSHA Issues Citations Against PG&E For Benicia Electrocution

- BENICIA, Calif. 9/17/2010 -- The California Division of Occupational Health and Safety issued citations totaling more than **\$176,000** Thursday against PG&E in connection with the electrocution of a lineman in Benicia in March.
- Maximilliano Martinez, 26, of Windsor, was killed while installing transformers in an underground vault containing 12,000-volt power lines around 10 a.m. on March 17.
- Martinez worked for PG&E just less than five years out of the Calistoga yard in Napa County, PG&E said.
- The largest "willful accident-related" citation of \$70,000 alleges PG&E "did not require and ensure that the work location was safely accessible by protecting employees from coming into contact with energized electrical parts before directing employees to enter the vault" Cal-OSHA said in a news release.
- There were three "serious accident-related" citations of \$22,500 each.
- A \$425 regulatory citation alleges PG&E did not post a conspicuous sign, "Warning-High Voltage-Keep Out".
- Four "serious" citations of \$9,560 each allege PG&E did not provide or require an observer during installation of the conductors inside the energized vault, and didn't ascertain whether any part of the electrical circuit was located where an employee could come in contact with it.
- The citations also alleged the utility did not provide and ensure suitable rubber gloves, barricades or other means of isolation from exposure to energized electrical equipment, and did not provide or require that all exposed energized cables or equipment were covered with suitable protective equipment or were barricaded while employees were working in the electrical vault.

# California Safety Milestones

- **1973** - California Occupational Safety and Health Act
  - Stipulates that every employer has a legal obligation to provide and maintain a safe and healthful workplace for employees.
- **1991** - Injury and Illness Prevention (IIP),
  - IIPP is required for every California employer.
- **1999** – AB 1127
  - Increased Penalties and allowed criminal prosecution of managers
- **2011** – AB 2774
  - Increases OSHA's ability to cite serious and willful safety violations

# California's AB 1127

- On October 6, 1999, Governor Gray Davis signed AB 1127 into law.
- Effective January 1, 2000, AB 1127 amends Cal/OSHA (the California Occupational Safety and Health Act) to **add the most massive civil and criminal penalties ever found under an occupational safety and health law.**

# What AB 1127 Says

- Large Increase in criminal penalties under Cal/OSHA.
- Individual **managers** and **supervisors** may now be fined up to **\$250,000** and be **imprisoned for up to four years**.
- **Criminal fines range up to a maximum of \$3.5 million** in fines for corporations and limited liability companies.
- **Cal OSHA civil penalties can now be assessed against government entities.**

# Interpretation of Willfully...

- Defines the term "**willfully**" to simply mean a willingness to commit or not commit an act. The term "**willfully**" for Cal/OSHA purposes will not require any intent to violate law or to injure someone.

# AB 2774: New Rules Regarding Workplace Safety Citations

- Effective Jan. 1, 2011: amends labor code section 6432 to define serious physical harm and establishes a rebuttable presumption as to when an employer commits a serious violation of these provisions.
- **“Rebuttable Presumptions” effectively reverse the presumption of innocence in some cases!**
- The law, which went into effect on the first of year, authorizes Cal/OSHA, to define how serious violations of safety in the workplace are cited.

# How AB 2774 Affects Managers

- New factors used to accurately issue serious citations include:
  - any training given to employees and supervisors,
  - existing workplace safety procedures,
  - supervision of employees exposed to the hazard,
  - any contributing information the employer wishes to provide to explain why the employer believes that no serious violation exists.

# What an IIPP Requires

- In California every employer is required by law (Labor Code Section) to provide a safe and healthful workplace for his/her employees.
- Title 8 of the California Code of Regulations (CCR), requires every employer to have an **effective Injury and Illness Prevention Program** in writing that must be in accord with T8 CCR Section 3203 of the General Industry Safety Orders.
- Additional requirements in T8 CCR Safety Order Sections address specific industries

# Hazard Prevention and Control

- Engineering Controls
- Safe Work Practices
- Administrative Controls
- Personal Protective Equipment (PPE)
- Systems to Track Hazard Correction
- Preventive Maintenance Systems
- Emergency Preparation
- Medical Programs

# Engineering Controls

- The first and best strategy is to control the hazard at its source.
- The basic concept behind engineering controls is that, to the extent feasible, the work environment and the job itself should be designed to eliminate hazards or reduce exposure to hazards.

# Safe Work Practices

- Safe work practices include your company's general workplace rules and other operation-specific rules.
- For example, even when a hazard is enclosed, exposure can occur when maintenance is necessary. **Through established safe work practices, employee exposure to hazards can be further reduced.**

# Administrative Controls

- While safe work practices can be considered forms of administrative controls, OSHA uses the term administrative controls to mean other measures aimed at reducing employee exposure to hazards.
- These measures include additional relief workers, exercise breaks and rotation of workers.
- These types of controls are normally used in conjunction with other controls that more directly prevent or control exposure to the hazard.

# Personal Protective Equipment (PPE)

- When exposure to hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices and other forms of administrative controls cannot provide sufficient additional protection, a supplementary method of control is the use of protective clothing or equipment.
- This is collectively called Personal Protective Equipment, or PPE.

# Job Hazard Analysis

- True hazard analysis techniques can be quite complex and include:
  - WHAT-IF Checklist,
  - Hazard and Operability Study,
  - Failure Mode and Effect Analysis,
  - and Fault Tree Analysis.
- The most commonly used technique by Managers & Supervisors to evaluate hazards is called the Job Hazard Analysis (JHA).

# Safety and Health Inspections

- Routine site safety and health inspections are designed to catch new and existing hazards on a routine basis.
- Procedures should be established that provide a daily inspection of the work area.
- Typical inspection processes use a checklist that include:
  - Known past incidents/injuries/problems.
  - Applicable Standards
  - Input from everyone involved.
  - Company safety practices or rules.
  - Ensure they cover every part of the worksite.
  - Requirement to be completed at regular intervals.
  - Identified hazards should be tracked to correction.

# Incident Investigation

- Incident investigations are designed to uncover hazards that were ignored, overlooked or that slipped by previous audits & controls, causing an unplanned event
- They are useful when the process is positive and focuses on finding the root cause, **not someone to blame!**
- All incidents and near misses should be investigated. WHY?
- 6 key questions should be answered:
  - **who,**
  - **what,**
  - **when,**
  - **where,**
  - **why,**
  - **and how**
- **Implementing corrective actions that will prevent recurrence is the key!**

# Trend Analysis

- Managers and Supervisors should know the details and trends of all injuries and incidents that occur under their management
- Injury and Illness Records Analysis:
  - Look for similar injuries and illnesses. These generally indicate a lack of hazard controls.
  - Look for where the injury or illness occurred, what type of work was being done, time of day, and type of equipment.
  - Review how long since they were trained and if training covers the information necessary to perform work safely.

# Common Serious Hazards

- **Vehicles (trucks, tractors, all terrain vehicles): collisions, rollovers, pedestrians, chemicals**
- **Work zone traffic**
- **Electrical – overhead line contact**
- **Electrical from District equipment: electrocution, arc blast**
- **Excavating around underground utilities: electric, gas, liquid fuel**
- **Drowning: falls into canals, siphons, pump intakes, from boats**
- **Confined spaces: water engulfment**
- **Hazardous atmospheres in confined or enclosed spaces: oxygen deficiency, hydrogen sulfide, carbon monoxide; toxic gases: chlorine, ammonia, ozone**
- **Corrosive chemical contact – burns, eyes, inhalation**
- **Compressed gases (acetylene, other gases); fire, explosions, inhalation**
- **Fire from flammable substances, wild fire**
- **Mechanical hazards: chainsaw, wood chippers, grinders, powered saws, rotating parts, other machinery**
- **Material handling using cranes, forklifts – tip over, structural failure from lifting over capacity**
- **Falls from height (ladder, scaffold, aerial lift)**
- **Falling objects from top of tank, vault or excavation**
- **Heat Stress**
- **Snakes, insects, dogs, wildlife**
- **Soft Tissue Injuries- strains, heavy lifting, ergonomics**
- **Workplace violence: handlers of cash, responding to alarms or trespassers at remote sites**