Distribution Services
Safety Training Programs

Presented by
Catherine Simonsen
Supervisor, Safety Operations
Distribution Services
EH&S Regulations
(US only)
Injury & Illness Prevention Program (IIPP)

- SB 198 established the requirements for the IIPP. The purpose was to establish an accident prevention program.
- Parallels the Hazard Communication Standard.
- Mandates safe practices, employee training, inspections to identify and correct unsafe conditions, and the creation of a safety committee.
- There is no comparable Federal standard.
Injury & Illness Prevention Program (IIPP)

- Encourage Proper Behavior
- Identify who is responsible
- At-Risk Behaviors
- Leadership
- Communication Training
- Accidents & Investigation
- Documentation
-Unsafe Conditions (inspections)
- Investigation Process to fix issues
- Hazard Recognition
- Recordkeeping
IIPP The Umbrella Program
(other regulations & training)

Hazard Communication
Hearing Conservation
Lockout Tagout
Confined Space
Trenching & Shoring
Vehicle Safety
Crane Operations
Forklift Safety
Fall Protection
Substation Entry

Ergonomics
Incident Investigations
Heat Illness Prevention
Respirators
Personal Protective Equipment (PPE)
Emergency Action Plans
Bloodborne Pathogens
Electrical Arc Protection
Safety Observations
Dog Bite Prevention
ENN (Employee News Network)

Hoping for a wet new year
(Dec 31, 2009) The calendar year finished on a hopeful note for the wettest year, with precipitation totals for December right in line with the historical average near SMUD’s hydroelectric system in the El Dorado National Forest. See story and another photo here.

In the beginning...
(Dec 31, 2009) SMUD replaced PG&E as Sacramento’s provider of electric service on Dec 31, 1948. Employees can get a glimpse into the earliest years of SMUD operations with newly posted issues of the old HiLines from 1947, 1948, 1949, 1950 and 1951. (Find the archive here.)

More Recent Stories...
• What’s in the bill?
• SMUD to buy more renewable gas
• Winner picked in Inclusion Theme competition
• Hilmar named to new economic development position

Current SMUD Statistics
Load: 1369 MW
Temp: 49°

Featured Links
• SMUD Ethics & Compliance Hotline
• Help video: Intranet basics
• Smart Meter | Smart Grid
• Online Events Registration
• Employee Recognition
• District Applications
• Help Desk
• SMUD.org

Industry News
Sector Snap: Analyst adjusts utilities view (AP)
Dominion decides to keep W.Va. gas operation (AP)
Investment Officer Sees Underweight Rating On Utilities: Energy Usage Needs To Return To Pre Financial Collapse Levels (Wall Street Transcript)
Dynegy Announces Funding of Significant Debt Reduction Initiative (Business Wire)

Public Power Daily
The U.S. Environmental Protection Agency’s proposal to regulate greenhouse gases under the Clean Air Act is an imperfect, but responsible way to proceed,” APRA told the agency in comments filed Dec. 23. APRA would prefer that greenhouse gases be regulated under new legislation, but the association recognizes that Congress is unlikely to enact a climate change law in 2010, leaving EPA to proceed under its existing statutory authority.

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Duty to Have Fall Protection

- Fall protection is required for employees whenever there is an exposure of a fall six (6) feet or more from:
  - Walking/working surfaces
  - Unprotected sides and edges
  - Wall openings
  - Form-work
  - Reinforced steel
  - Excavations
Fall Protection – Complex regulatory scheme

Fall protection requirements are often a function of the task and craft.

- **Article 2, Section 1504: Definitions**
- **Article 7, Section 1548: Bins, Bunkers & Hoppers**
- **Article 12, Section 1600: Pile Driving**
- **Article 14, Section, 1605.19: Landings & Runways**
- **Article 16, Section 1621: Railings & Toeboards**
- **Article 24, Section 1669, 1670,1671: Safety Belts & Nets**
- **Article 28, 1712 & 1716: Erection & Construction**
- **Article 30, 1730: Roofing Operations**
Fall Protection

To prevent employees from falling to the next lower level. Systems include:

- Personal Fall Arrest
- Guardrails
- Safety Nets
- Warning Lines
Fall Protection

Active
(you’re wearing something)

Fall Arrest
Fall Restraint
Positioning

Passive

Guardrails
Safety Nets
Monitors
Positioning Device

A body belt or body harness system rigged to allow an employee to be supported on an elevated surface, such as a wall, and work with both hands free while leaning.
Exemptions

- Erection/dismantling or working from scaffolds
- Steel erection work
- Working from some tunneling equipment
- Working from some cranes and derricks
- Work from ladders
Personal Fall Arrest System

Consists of an anchorage point, harness and a connector between the two (lanyard)

- Anchoring point must be able to hold 5000#
- D-rings & snaphooks: ANSI strength criteria, and double locking
- Must be installed by a qualified person
- The system does not allow a free fall more than 6 feet
**Fall arrest lanyards**

- Are to be inspected prior to use.
- Are only to be used for employee safeguarding; independent and free of interference; and not as a positioning devices.
- ANSI tagged with decelerating device
- Shall not allow free fall greater than 6 feet.
Fall arrest lanyards cont.

- Cannot be tied or clipped together to make a longer lanyard.
- Cannot be tied in a knot to make shorter
- Removed from service after being shock-loaded (evaluated by manufacturer or tagged out).
# FALL PROTECTION GUIDE

A method must be chosen for each exposure

**Legend:**
- **P** = Preferred
- **A** = Alternative
- **M** = Mandatory

(One option above must be selected)

(No alternatives by Regulation or Policy)

<table>
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<tr>
<th>FALL EXPOSURE</th>
<th>SYSTEM TYPE</th>
<th>EQUIPMENT TYPE</th>
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<td>POSITION</td>
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<td>Tree Climbing</td>
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<td>Fixed Ladders &gt;20'</td>
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<tr>
<td>Pole Climbing⁶</td>
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¹ Aerial Lift Devices (examples: JLG, scissor lifts, ETC.)
² Fall protection is required if a mid rail or top rail is removed.
³ Older installations without cages require fall protection when working from a fixed ladder.
⁴ If crossing over excavations is necessary and the trench is over 30 inches wide and 6 feet deep or greater, guardrails are required.
⁵ High angle slope work is controlled through rope access practices rather than fall protection practices.
⁶ For fall protection requirements specific to pole climbing refer to DS Safety Manual 5-13 Fall protection section 6.1.2 General
⁷ A dedicated monitor should not be used in lieu of other fall protection equipment unless there is no other practical approach and contact has been made with EH&S
**Fall Restraint**
Full body harness with short safety strap

**Fall Arrest**
Full body harness with 6ft. lanyard and deceleration

**Fall Restraint**
Belt with short safety strap

**Not Approved for Fall Arrest**
Belt with 6ft. lanyard and deceleration

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**TOTAL FALL DISTANCE**
(from Anchor Point)
6ft. lanyard 14.5 ft min. clearance

**D Ring**
**Anchor Point**

**Free Fall**

**6 ft. Lanyard (max)**

**3.5 ft. Deceleration**

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Never use in a Lift.

JLG Bucket Truck

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Not Drawn to Scale
Examples of Pole Top Rescue Training

- Pole and Aerial Device Rescue (Rope Blocks)
- Pole and Aerial Device Rescue (Dump)
- Pole and Aerial Device Rescue (Pole Top)
- Pole and Aerial Device Rescue (Screw driver)
- Pole and Aerial Device Rescue Procedure (Pole Top-BT)
The Pole Top Cross Arm Method involves multiple steps to ensure the safety of the workers. The rescuer first makes an assessment to determine if there are any hazards that could compromise their safety. The rescuer then checks for hazards that might compromise the safety of the rescuer. This method is crucial for ensuring the safety of workers during electrical work on high-voltage lines.
Lockout / Tagout - LOTO (The Control of Hazardous Energy)

Types:
- Electrical
- Chemical
- Hydraulic
- Pneumatic
- Thermal
- Mechanical

Requires Annual Training & Procedure Reviews
Safety Operations Mission

Safety Operations provides safety consultation, services, and resources to District functions to assist management in fulfilling injury and illness Prevention Program requirements to provide a safe work environment and to comply with regulatory and District safety standard requirements. Staff within Safety Operations is assigned to provide direct support to individual Business Units and departments.

Safety Operations functions include risk identification and reduction strategies to assist management. Staff provides incident investigation support, behavior-based safety program (SCORCH) coordination, regulatory reviews, training, safety meeting content, job hazard analyses, and reviews of work procedures, tools, equipment, and materials. As a team, staff provides continued development of Districtwide safety standards, and maintains records on accidents and safety performance. These functions support the framework of the District’s Hazard Reduction, Accountability, Behaviors, Indicators, Training (HABITs) program.

Useful Forms
- Request for Safety Glasses (See District SH&E Policy 5-11)
- Safety Recommendations (See District SH&E Policy 3-04)
- Vaccination Declaration (Bloodborne Pathogens)
- Hot Work Permit
- Confined Space Entry
- Field Inspection
- Vehicle Inspection
- Fall Protection Guide

Health & Safety Standards
- 3.01 Injury and Illness Prevention Program (IPP)
- 3.02 Safety Meetings
- 5.02 Vehicle Safety
- 6.01 Incident Reporting and Investigation
- To view all Health & Safety Standards click here

Links
- DS Safety
- CS Safety
- Training Management System (TMS)
- American Society of Safety Engineers
- American Industrial Hygiene Association
- Call OSHA
- Call OSHA Publications
- National Safety Council
- MSDS Instructions

Safety Operations Contacts
- Catherine Simonsen
  - Supervisor
  - Contact name
  - Responsibility
- Bret Goodnight
  - UARP/Energy Supply
  - Contact name
  - Responsibility
- Steven Hood
  - HABITs SD 6
  - Metrics/Training Program Development
  - Contact name
  - Responsibility
- Meredith Hudson
  - Sr. Office Specialist
  - Contact name
  - Responsibility
- Larry Pierce
  - DISDriver Safety Program
  - Contact name
  - Responsibility
- Kevin Welter
  - Workforce & Workplace/General Safety/Office Safety
  - Contact name
  - Responsibility
- Carl Whitley
  - SCORCH Coordinator
  - Contact name
  - Responsibility

Health and Wellness
- Integrated Disability Management
- Workers Compensation
- Family and Medical Leave Act (FMLA)
- Short and Long Term Disability
- Ergonomics

Wellness Program
- Fitness Center
- Membership and Services

Safety Operations
- Safety Videos Checklist Process
- SCORCH
- SCORCH Pictures
Personal Protective Equipment (PPE)

Regulations:

- Title 8, California Code of Regulations
  Sections:
    - 3380-3390
      - (General Industry Safety Orders)
Hazard Examples

- Chemicals
- Electrical
- Flying Particles
- Harmful Dust - Inhalation Hazards
- Heat/Cold
- Impact - Falling Objects
- Motion
- Noise
- Sharp Objects
Before Using PPE

- Engineering Controls
  - Example: Dust Collection System in Carpenter Shop
- Administrative Controls
  - Example: Task Rotation (Time)
- Work Practices
  - Example: Minimize Number of Employees Completing Specialized Tasks
PPE Examples

- FR Clothing
- Gloves
- Goggles
- Safety Glasses
- Hard Hats
- Respirators
- Shoes
Everyone’s Responsibility

- **Communication:**
- Identify & Control Health Hazards through various controls, if possible
  - Engineering
  - Administrative
  - Work Practice
- Identify & Provide Appropriate PPE
- Train Employee’s in the Use & Care of PPE
- Replace worn or damaged PPE
- Review, Update, & Evaluate effectiveness of PPE Program
End User’s Responsibility

- **Communication:**
  - Advise of Previously Unrecognized Hazards
  - Participate in Training Sessions on PPE

- Wear PPE Properly
- Care for & maintain PPE
- Go to Tool Room of need to repair or replace PPE - immediately
PPE Selection:

ANSI -
- American National Standards Institute

- Eye and Face Protection - Z87.1-2003
- Foot Protection - F2412-2005
- Head Protection - Z89.1-2003

- Hand Protection- No ANSI Standard
  - OSHA recommends obtain appropriate type for tasks being performed
Requirements:

- Protective equipment shall be distinctly marked so as to facilitate the identification of the manufacturer.

- Employer shall assure the employee is instructed and uses protective equipment in accordance with the manufacturer’s instructions.
• Employer shall assure that all PPE, whether employer-provided or employee-provided, complies with the applicable Title 8 standards for the equipment.

• The employer shall assure this equipment is maintained in a safe, sanitary condition.
● Protectors shall be of such design, fit and durability as to provide adequate protection against the hazards for which they are designed.

• They shall be reasonably comfortable and shall not unduly encumber the employee’s movements necessary to perform his work.
FR Clothing (NFPA 70E)

- Significantly reduces burn injuries (2nd degree)
  - Increase chance of survival if caught in flash fire or electric arc
- Provides Wearer escape time
- Replacement is dependent on use
  - 9-18 months, some up to 5 yrs
  - Beyond repair-holes which compromise protection; contaminated; thread-bare
§3382 Eye and Face Protection

- Employees working in location where there is a risk of receiving eye injuries such as punctures, abrasions, contusions, or burns as a result of contact with flying particles, hazardous substances, projections or injurious light rays which are inherent in the work or environment, shall be safeguarded by means of face or eye protection.
  - Suitable screens or shields isolating hazardous exposures may be considered adequate safeguarding for nearby employees.
Where eye protection is required and the employee requires vision correction, such eye protection shall be provided as follows:

- Safety spectacles with suitable corrected lenses,
- Safety goggles designed to fit over spectacles
- Protective goggles with corrective lenses mounted behind the protective lenses.
Wearing of contact lens is prohibited in working environments having harmful exposure to materials or light flashes, except when special precautionary procedures, which are medically approved, have been established for the protection of the exposed employee.
Eye & Face Protect. Z87.1-2003

- Examples
  - Glasses, Goggles, Face Shields, Welding-Helmets, Full Face-Piece Respirators
  - Prescription Eye Safety Protection is available

- Performance Testing
  - High Impact
  - Low Impact

- Replace when:
  - Cracked Broken frames or lenses
  - Scratches which minimize visibility
§3383 Body Protection

Body protection may be required for employees whose work exposes parts of their body, not otherwise protected as required by other orders in this article, to hazardous or flying substances or objects.

Clothing appropriate for the work being done shall be worn. Loose sleeves, tails, ties, lapels, cuffs, or other loose clothing which can be entangled in moving machinery shall not be worn.

Clothing saturated or impregnated with flammable liquids, corrosive substances, irritants, or oxidizing agents shall be removed and shall not be worn until properly cleaned.
§ 3384 Hand Protection

- Hand protection shall be required for employees whose work involves unusual and excessive exposure of hands to cuts, burns, harmful physical or chemical agents or radioactive materials which are encountered and capable of causing injury or impairments.

- NOTE: Wrist watches, rings, or other jewelry should not be worn while working with or around machinery with moving parts in which such objects may be caught, or around electrically energized equipment.
Hand Protection

- No ANSI Standard specifically for hand protection
- OSHA recommends obtaining gloves for tasks being performed
§3381 Head Protection

- Employees working in locations where there is a risk of receiving head injuries from flying or falling objects and/or electric shock and burns shall wear approved head protection.

- When head protection is required, the employer shall ensure that approved protective helmets are selected and used in accordance with their demonstrated resistance to impact and electrical hazards.
Head Protection Z89.1- 2003

- After October 30, 2004, shall comply with American National Standards Institute (ANSI) Z89.1-2003 Industrial Head Protection

- **Class A** - impact & penetration resistance along with limited voltage protection (up to 2,200 volts).

- **Class B** - Highest level of protection against electrical hazards, with protection up to 20,000 volts. Also protect from impact & penetration hazards by flying/falling objects.

- **Class C, E, or G** - No risk of contact w/electrical conductors; Protection only to reduce injury from flying/falling objects.
Head Protection, Continued

- What to look for:
  - Perforation, cracking, or deformity of the brim or shell
  - Indication of exposure of the brim or shell to heat, chemicals or ultraviolet light and other radiation (in addition to a loss of surface gloss, such signs include chalking or flaking)

- *Always replace a hard hat if it sustains an impact, even if damage is not noticeable*
Each approved protective helmet shall bear the original marking required by the ANSI standard under which it was approved.

At a minimum, the marking shall identify the manufacturer, ANSI designated standard number and date, and ANSI designated class of helmet.

Where there is a risk of injury from hair entanglements in moving parts of machinery, combustibles or toxic contaminants, employees shall confine their hair to eliminate the hazard.
§ 3385 Foot Protection

Footwear which is defective or inappropriate to the extent that its ordinary use creates the possibility of foot injuries shall not be worn.
Foot Protection, Continued

- Shoes May Become Compromised if:
  - They become wet
  - The soles become worn through
  - Metal particles become embedded in the sole or heel
  - Workers touch conductive or grounded items
Donning Equipment

- Inspect before each use
- Maintain in operable condition
  - Adhere to Manufacturer’s Instructions
  - No Modifications
  - Clean
- Ensure Proper Fit
  - Stay In Place
  - Wear Properly
- Replace as Needed

**KNOW IT’S LIMITATIONS!**