

## SECTION 6: PERSONAL PROTECTIVE EQUIPMENT (PPE)

Regulatory Basis: T8 CCR Sec. 3380 (PPE - General Requirements), T8 CCR Sec. 3382 (Eye and Face Protection), T8 CCR Sec. 3384 (Head Protection), T8 CCR Sec. 3385 (Foot Protection); ANSI Z89.1, ANSI Z87.1, ASTM F1506, ASTM D120, NFPA 70E-2024

### PPE Hazard Assessment

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### Required PPE - All Electrical Field Employees

#### Head Protection (T8 CCR Sec. 3384)

- Class E (Electrical) hard hat required - rated to withstand 20,000 volts (phase to ground)
- Standard: ANSI/ISEA Z89.1, Type I or II, Class E
- No metal attachments near energized equipment
- Inspect before each use; replace after any impact or every 5 years
- Do not store in direct sunlight (degrades fiberglass/plastic shell)

#### Eye and Face Protection (T8 CCR Sec. 3382)

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#### Hearing Protection (T8 CCR Sec. 5096)

- Required when noise levels exceed 85 dBA time-weighted average (Cal/OSHA action level matches federal)
- Applicable tasks: drilling concrete, sawing, operating generators, jackhammer use
- Foam earplugs (NRR 29+) or earmuff style hearing protectors
- Note: Do not use hearing protection when it prevents hearing safety warnings in the work area

#### Hand Protection

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### Foot Protection (T8 CCR Sec. 3385)

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### Arc-Rated (AR) / Flame-Resistant (FR) Clothing

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### High-Visibility / Reflective Vest

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### Respiratory Protection (T8 CCR Sec. 5144)

- N95 disposable respirator required when cutting concrete, working in dusty environments, or mixing chemical compounds
- Full respiratory protection program required if atmosphere-supplied or SCBA equipment is needed (confined space, IDLH atmospheres)
- Refer to Lead Safety Section (14) for lead-specific respiratory protection requirements
- Required respirator use requires medical evaluation, fit testing for tight-fitting respirators, training, and a written respiratory protection program; voluntary N95 filtering-facepiece use requires Appendix D information but does not require medical evaluation or fit testing

### PPE Proper Fit Requirement (T8 CCR Sec. 3380; see also 29 CFR 1926.95(c) - effective January 13, 2025)

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Demo Company LLC

requires:

- Individual fit verification for all PPE at time of issuance and whenever PPE is replaced or employees report fit issues
- Fall arrest harnesses: must be adjusted to fit snugly; loose harnesses can shift the D-ring and cause injury during arrest. Each employee's harness adjustment is verified by a competent person before first use.
- Rubber insulating gloves: must fit the individual hand - gloves that are too large reduce dexterity and grip, increasing risk of contact with energized parts
- Hard hats: suspension adjusted so hat sits securely; no excessive movement when employee bends forward
- Safety eyewear: must fit the face without gaps that would allow debris entry; prescription safety glasses for employees requiring corrective lenses
- Employees must report PPE that does not fit properly; Elena Morales will arrange replacement sizing

## PPE Inspection, Maintenance, and Replacement

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## SECTION 7: ELECTRICAL SAFETY PROGRAM

Regulatory Basis: T8 CCR Subchapter 5 (Electrical Safety Orders), T8 CCR Sec. 2320 et seq., T8 CCR Sec. 2940 (Construction - Electrical), 29 CFR 1926 Subpart K (supplementary guidance); NFPA 70E-2024

### Scope

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### Fundamental Rule: De-Energize Before Working

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Energized electrical work is only permitted when:

1. De-energizing would create a greater hazard (e.g., de-energizing deactivates life-support equipment),  
OR
2. It is infeasible due to equipment design or operational limitations, AND
3. An Energized Work Permit has been authorized (see Section 10)

### Qualified vs. Unqualified Workers

Qualified Electrical Worker (T8 CCR Sec. 2700):

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### Electrical Hazard Recognition

- Electrical shock: current passing through the body - 100mA (0.1 amp) can be lethal
- Arc flash: explosive release of energy - intense heat, pressure wave, molten metal
- Arc blast: concussive pressure wave - hearing damage, blunt trauma
- Electrocutation: death from electrical shock
- Secondary hazards: falls caused by shock reaction, fires from arc flash

## Safe Work Practices

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### Before Starting Any Electrical Work

- Identify all circuits and voltage levels in the work area
- Determine if work can be performed de-energized (default: yes)
- If energized work required: obtain Energized Work Permit before starting
- Brief all workers in the area on hazards and controls
- Ensure required PPE is on-hand and serviceable

### General Electrical Safety Rules

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### Working in Wet or Damp Conditions

- All work on temporary construction power must be GFCI protected (Section 11)
- Use insulated tools and wear rubber insulating gloves
- Dry hands and equipment before operating switches or touching energized parts

### Tool and Equipment Inspection

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### Grounding Requirements (T8 CCR Sec. 2395 / Sec. 8001 et seq.)

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- Equipment grounding conductor must be intact in all flexible cords
- Equipment requiring grounding must be grounded before energizing
- Portable generators: bond frame to grounding electrode or use double-insulated equipment

### Prohibited Practices

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The following are strictly prohibited at Demo Company LLC :

- Bypassing overcurrent protection
  - Energizing circuits without labeling
  - Working on energized equipment without Energized Work Permit
  - Removing LOTO devices placed by other employees
  - Using non-electrical-rated PPE near energized equipment
  - Working on electrical systems while impaired
  - Defeating GFCI protection
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## SECTION 8: LOCKOUT/TAGOUT (LOTO) PROCEDURES

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Regulatory Basis: T8 CCR Sec. 3314 (Electrical Safety Orders - Control of Hazardous Energy), 29 CFR 1926.417 (supplementary reference only - T8 CCR Sec. 3314 governs in California)

California Note: California's lockout/tagout standard is T8 CCR Sec. 3314. All references in this program are to the California standard. Federal citations (29 CFR 1910.147) are included for cross-reference only.

### Purpose

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### Scope

LOTO applies to all work on electrical equipment where unexpected energization could cause injury:

- Replacing circuit breakers, switches, fuses
- Working inside electrical panels, junction boxes, motor control centers
- Installing or terminating wiring in energized equipment
- Servicing or maintaining electrically powered equipment
- Any task requiring removal of guards on electrical equipment

### Employee Classifications

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### Required LOTO Equipment

Demo Company LLC

provides each authorized employee with:

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- Circuit breaker lockout devices (various sizes)
- Plug lockout devices
- Cable lockouts
- Multi-lock hasps

### LOTO Procedure - Step by Step (T8 CCR Sec. 3314)

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#### 1. Prepare for Shutdown

- Identify ALL energy sources (electrical, stored mechanical, hydraulic, pneumatic, gravity, thermal, chemical)
- Identify all authorized and affected employees
- Notify all affected employees that equipment is being locked out

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### 5. Release / Restrain Stored Energy

- Release or restrain all stored/residual energy:
- Electrical: discharge capacitors; open discharge switches
- Gravity: block suspended parts, lower loads to floor
- Springs: release spring tension or block
- Hydraulic/pneumatic: bleed off pressure

### 6. Verify De-Energization - CRITICAL STEP - Do NOT skip

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### 7. Perform the Work

- Equipment is now safely isolated; work may proceed

### Restoring Equipment to Service

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### Group LOTO

When multiple authorized employees work on the same equipment:

- One authorized employee serves as Group LOTO Coordinator
- Coordinator applies primary LOTO device to energy-isolating device
- Each additional authorized employee applies their own personal lock to the hasp
- No work proceeds until ALL employees have applied locks
- Each employee removes only their own lock when their work is complete

## Shift Change

LOTO must remain in place during shift changes - outgoing employee does not remove lock until incoming employee has applied their own lock.

## Contractor LOTO Coordination

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## Annual LOTO Inspection (T8 CCR Sec. 3314)

Elena Morales conducts annual inspection of LOTO procedures:

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## Training

- Authorized employees: full LOTO training before performing LOTO
- Affected employees: training on LOTO purpose and prohibition on removing locks
- Retraining: when procedure changes, when inspection reveals deficiencies, when new equipment is introduced

## SECTION 9: ARC FLASH SAFETY & PPE

Regulatory Basis: T8 CCR Sec. 2320 et seq. (Electrical Safety Orders), T8 CCR Sec. 2940; NFPA 70E-2024 (Standard for Electrical Safety in the Workplace); 29 CFR 1926.95 (supplementary)

### What is Arc Flash?

An arc flash is a sudden release of electrical energy through the air when current jumps between energized conductors or from an energized conductor to ground. Arc flashes produce:

- Temperatures up to 35,000 deg F at the arc
- Pressure wave (arc blast) that can throw workers across a room
- Molten metal and shrapnel ejected from equipment
- Intense UV/IR light causing burns to unprotected eyes
- Intense sound (up to 165 dB) causing hearing damage

Arc flash is one of the leading causes of electrical injuries and fatalities in the electrical trade.

### Arc Flash Risk Assessment

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### Electrical Work Boundaries (NFPA 70E-2024 130.2)

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