



Field Safety Manual



Printed September 2019
Effective January 01, 2020
Revisions will be posted online.

Field Safety Manual Change Summary

Date of change	Affected section(s)	Description of change
07/06/2020	Definitions, 102, 1000, 1300	Definition of blocking changed. Removed phone number for locate service. Change to rule for covering exposed conductors. Changed voltage for moving energized cables.
06/16/2021	200, 300, 1100, 1400, 2100	Exception for extending clearance added. Added rule about invalidating clearances due to adding or removing devices/connections. Added rescue wristlets. Changed rule for vicious animals. Changed rule about grinding non-ferrous metals. Clarified rule regarding use of worm-clamps on hose ends.
12/14/2021	107	Changed required periodicity of respiratory protection reevaluation.
07/01/2022	600, 1700	Added requirement for retraining industrial truck operators. Added Every Arc-Rated Body Protection Chart, removed legacy charts.
07/28/2022	600	Restored legacy charts for Substation.
09/20/2022	1500	Changed maximum pole hauling length from 50 to 60.
02/13/2023	107.5	Further defined requirements of foot protection.
09/15/2023	1406.9.1	Add exception for utilization of chain saw.
09/15/2023	108.8	Added new section 108.8 – Working from Roofs
09/15/2023	1008.2	Added verification of two methods. Added new sections 1008.2.1 (Exceptions) and 1008.2.2.
11/30/2023	1008.1	Admin Change. Corrected verbiage to add the word “ <u>more</u> methods in place.”
04/02/2024	Definitions	Removed Distribution Lateral Clearance and Planned Radial Clearance. Added Field and Operator Clearance.
04/02/2024	200 Clearances	Remove language referring Distribution Lateral Clearance and Planned Radial Clearance (previously 204.11). Eliminated previous DLC language (previously section 204.9)
10/02/2024	110 Vehicle Operations	Revised/defined usage of wheel chocks.
10/02/2024	2000 Transformer Repair	Removed section 2001.5 of the Field Safety Manual. Reference: 2001.5 All transformer repair equipment and machinery shall be regularly inspected, maintained, and operated in accordance with manufacturers' specifications. Any tool, equipment or machinery found not to be operating properly shall be immediately taken out of service and tagged with a Repair tag until maintenance or repairs can be made. This rule was written and applicable to the former Transformer Repair Department (not field use).
01/27/2025	109.0 Safe Work Practices	Added 109.2.5 - recordkeeping requirements of Pre-Job Briefing Forms.
02/12/2025	109.0 Safe Work Practices	Revised 109.2.5 – recordkeeping requirements of Pre-Job Briefing Forms.
07/25/2025	605.1	Eliminated Legacy East and West Substation FR Matrix(s). Created one Every Substation Matrix.

Safety Manual Suggestion Form

Safety Rule Number: _____ Page Number: _____

Suggested Change or Addition:

Reason for Change:

Name: _____ Contact Number: _____

Date: _____

Suggestions for Safety Manual changes will be processed by the Safety Department.
Please submit completed form to your Safety Coordinator.



General Safety Rules



Table of Contents

Definitions	1
100 General Safety	100-1
100.1 Purpose	100-1
100.2 Scope	100-1
100.3 Safety Responsibilities	100-1
100.4 Housekeeping	100-3
100.5 Accident Reporting	100-3
101 Compressed Gases	101-1
101.1 Gases Used	101-1
101.2 Handling & Storage of Cylinders	101-1
101.3 Gas Cylinder Setup & Removal	101-2
101.4 Argon, Carbon Dioxide	101-3
101.5 Acetylene	101-3
102 Excavation Guidelines	102-1
102.1 General	102-1
102.2 Buried Underground Utilities	102-1
102.3 Pre-Job Planning	102-1
102.4 Protective Systems	102-1
102.5 Hazardous Atmospheres	102-2
102.6 Inspections	102-2
102.7 Emergency Situations	102-3
102.8 Public Safety	102-3
103 Fire Prevention	103-1
103.1 General	103-1
103.2 Smoking or Open Flames	103-1
103.3 Extinguishing Fires	103-1
104 Hand & Power Tools	104-1
104.1 Tool Approval	104-1
104.2 Tool Care	104-1
104.3 Tool Use	104-1
104.4 Portable Electric Tools	104-2
105 Health/Safety/Environmental Controls	105-1
105.1 Health Hazards	105-1
105.2 Chemicals & Hazardous Substances	105-1
105.3 PCBs	105-1
105.4 Silica	105-2
106 Office & Building Safety	106-1
106.1 General	106-1
106.2 Floor Surfaces	106-1
106.3 Chairs	106-1
106.4 Lighting	106-2
106.5 Electric Cords	106-2
106.6 Stairways	106-2
106.7 Filing Cabinets	106-2
106.8 Ergonomics	106-2
106.9 Building Security	106-3



Table of Contents

107 Personal Protective Equipment (PPE)	107-1
107.1 General	107-1
107.2 PPE Use	107-1
107.3 Inspection & Maintenance	107-1
107.4 Selection of PPE	107-1
107.5 Foot Protection	107-1
107.6 Head Protection	107-2
107.7 Eye & Face Protection	107-2
107.8 Hearing Protection	107-2
107.9 Hand Protection	107-2
107.10 Respiratory Protection	107-3
107.11 High Visibility Safety Apparel	107-4
108 Portable Ladders & Scaffolds	108-1
108.1 Extension Ladders	108-1
108.2 Stepladders	108-2
108.3 Step Stools	108-2
108.4 Safety Platform Ladders	108-2
108.5 Scaffolds	108-2
108.6 Mobile Scaffolds/Platforms/Scissor Lift/Man Lifts	108-3
108.7 Fall Protection	108-3
108.8 Working from Roofs	108-4
109 Safe Work Practices	109-1
109.1 General	109-1
109.2 Job Planning (Pre-Job Briefing)	109-1
109.3 Protection the Public	109-1
110 Vehicle Operations	110-1
110.1 General	110-1
110.2 Inspections	110-2
110.3 Parking	110-2
110.4 Backing	110-2
110.5 Stopping on Highway	110-3
111 Welding & Cutting	111-1
111.1 General	111-1

DEFINITIONS

The following terms and definitions apply to the safety rules in this manual.

Accident: Any incident that results in bodily harm to a worker or damage to property.

Accountable: Being answerable for your behavior and for carrying out your responsibilities as well as the behavior and responsibilities of any subordinate assigned to you.

Aerial Lift: Bucket truck or self-propelled man lift.

Authorized Person: A person qualified through training who has authority to secure a Clearance on a circuit or equipment which is to be worked dead or a person to whom system operating authority may be assigned.

Blocking: The disabling of the next desirable automatic reclosing devices between the work location and substation.

Clearance: A condition wherein a specific circuit or equipment is isolated from all normal sources of energy and all clearance limits necessary for such isolation are tagged. It is granted by SOA to an Authorized Person(s). It does not protect Workers' from static charges, induced voltage, accidental contact with other energized equipment, or unknown customer owned generation. This is the preferred method of isolating a section of line or equipment from all normal sources of electrical supply.

Clearance Limit: A point of isolation that prohibits the supply of electrical energy to the work area covered under the Clearance.

Dead: Electric lines and/or equipment that are free from any electrical connection to a source of electrical supply, verified for absence of voltage and grounded.

Emergency: An unusual condition that endangers life, health, and/or property.

Emergency Clearance: A clearance prepared on the job during an emergency by the worker in charge of the work. The worker operates devices and places Clearance Tags as would be required by the System Operating Authority, but without direct orders from the System Operating Authority. The Emergency Clearance is used primarily in clearing apparatus or circuits where immediate communication with a System Operating Authority is impossible or would cause unreasonable delay in restoring service to customers or would cause a safety hazard to the public or to employees.

Enclosed Space: Underground enclosed spaces refer to manholes and vaults that contain operating transmission and distribution equipment, if personnel entering such spaces are qualified employees performing routine work. And if the only potential hazards in the manholes and vaults are electrical.

Equipotential Grounds: Equi-potential grounding is the creation of a grounded area that envelopes the worker by mounting a grounding cluster to the pole or structure, attaching it to the system neutral, static or temporary ground if no neutral or static exists and electrically attaching all conductors to the grounding cluster. This establishes the same potential for the worker and all the conductors and apparatus being worked on.

Excavation: Any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal.

Ferroresonance: When a transformer is energized, but has no load, or very little load on it, the transformer winding has the properties of an inductor. Capacitance can develop between the conductor inside the UG cable

and the concentric neutral or cable shield on the exterior of the insulation. Current can increase substantially as it is only limited by what little resistance is in the circuit and voltage can be considerably higher than the source voltage of the circuit. The most critical circumstance contributing to the occurrence of ferroresonance has to do with how switching is done. Ferro resonance is more prevalent at higher voltages and can occur on OH systems as well as UG.

Field Clearance: may be used to conduct immediate routine maintenance or construction work with up to 2 clearance limits, or emergent work that requires multiple limits be used. This clearance is intended and shall be used when immediate work is to be done. Advance notice is not required to the System Operating Authority. This clearance may be utilized when portions of a circuit, lateral, or equipment, rated 34kV and all voltages associated below 34kv, can be isolated from all sources of energy. The clearance limits necessary for isolation must be tagged and verbal grant and surrender orders given through 3 part communication from the System Operating Authority. This type of clearance requires communication with the SOA prior to commencing work.

Field Employees: Shall consist of those employees who work in an environment that includes any of the following hazards: flames, arcs, electrical contact, falling, slipping, being struck by, having something fall upon, loud noise, improper atmosphere and any other hazards except those in an office setting.

Grounded: Connected to earth or to some conducting body that serves in place of the earth.

Incident: Any event that results in any harm to a person (s) or property including occurrences that result in power outages to customers or placing the system in jeopardy.

Live: A term used in reference to electric current-carrying equipment that is energized, or de-energized and may become energized.

- **Energized:** Electric lines and/or equipment connected to a source of electrical supply.
- **De-energized:** Electric lines and/or equipment that are free from any electrical connection to a source of electrical supply.

Manhole: A subsurface enclosure that was not designed for and lacks natural flow through ventilation.

Near Miss: An event which did not result in harm to a person(s), property or jeopardy to the electrical system and except for self reporting of the employee(s) involved, the occurrence would go undetected. This includes behavior that puts the employee "at risk". A Near Miss will not result in discipline, unless a safety rule violation has occurred.

NESC: National Electric Safety Code

Non Permit Confined Space: A working space, such as a top entry transformer or circuit breaker, large enough and so configured that an employee can enter and perform work, has limited openings for entry and exit, is not intended for continuous employee occupancy and does not contain or have the potential to contain any atmospheric hazards capable of causing death or serious injury.

Operator Clearance: is used to conduct planned maintenance or construction work, with proper advanced notice is given to the System Operating Authority via the outage request tool/system. This clearance applies when any circuit or equipment is to be isolated from all normal sources of energy; and all clearance limits necessary for such isolation are tagged following switching orders from the System Operating Authority. This type of clearance requires communication to the SOA prior to commencing work.

Permit-Required Confined Space: Contains or has the potential to contain a hazardous atmosphere. Contains a material with the potential to engulf someone who enters the space. Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section. Contains any other recognized serious safety or health hazards.

PCB: Poly Chlorinated Bi-phenols. PCB values less than 50 ppm are considered non-PCB, PCB values from 50 to 500 ppm are considered PCB contaminated while PCB values above 500 ppm are considered PCB.

PPE: Personal Protective Equipment that includes rubber gloves, sleeves, climbing belts, safety straps, fire resistant clothing, gloves, hard hats, safety glasses, footwear, hearing protection and other equipment whose purpose is to protect the worker from hazard.

Pre-job Briefing (Tailgate): A short informal discussion of the work to be accomplished and the safety measures to be incorporated, usually conducted by the foreman / lead person or the worker in charge.

Primary Voltage: Any supply voltage greater than 600 volts.

Protective Cover Up: All line hose, hoods and blankets made of rubber or fiberglass installed to prevent inadvertent contact with energized parts.

Public: Any individual who is not a worker or representative of Evergy.

Qualified Person: One knowledgeable in the construction and operation of the electric power generation, transmission and distribution equipment involved, along with associated hazards.

- An employee must have training required by OSHA 29 CFR 1910.269; paragraph (a) (2) (ii), in order to be considered a Qualified Person.
- Except under OSHA 29 CFR 1910.269 (g) (2) (v), an employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his/her level of training and who is under direct supervision of a qualified person is considered to be a qualified person for the performance of those duties.

Recordable Accident: An OSHA reporting requirement, all incidents requiring medical treatment beyond first aid including Non-lost Time, Restricted Duty and Lost Time incidents.

Responsible: The expectations, duties and behaviors you will be assigned and held accountable (answerable) for.

SDS: Safety Data Sheet, includes the hazards and methods of dealing with the hazards present in the chemical makeup of the material.

Safety Rule: A rule established to help prevent accident and injury. All employees shall comply with safety rules; deviation from safety rules may result in corrective action.

Safe Work Zone: A safe work zone is an area created to prevent electrical contact by a worker using isolation and/or insulation procedures.

- *Isolate* – Electrical lines and/or apparatus that have been removed from all sources of feed and grounds applied.
- *Insulate* – Cover up and/or establish safe working distance.

Secondary Voltage: Any supply voltage up to 600 volts.

Shall / Should: When the word “shall” appears in the wording of a safety rule, the rule is mandatory, not optional. When the word “should” appears in the wording of a safety rule, the rule is recommended, but not mandatory. In the absence of shall or should, the rule is mandatory.

Single Point Grounding: The work method that ties all the phases of a distribution line together with grounding jumpers and connects the phases to the system neutral, the static or driven ground.

Switching: Opening and closing of any load carrying device either by mechanical means in the field or by supervisory control.

System Operating Authority (SOA): The permission given to a worker to direct the operation of system apparatus in an assigned jurisdiction. The person with the authority to direct the operation of the system in an assigned jurisdiction, including approving planned and unplanned switching, including the authority to grant and surrender a clearance on circuits and equipment. SOA includes the following: Transmission System Operators (TSO), Distribution System Operators (DSO), Service Operators, Generation System Operators.

Tags: Tags of Company approved design used to designate a device or piece of equipment should not be operated without System Operating Authority.

- **Clearance Tag:** A white tag of Company approved design that shall be attached to all clearance limits forbidding the operation or change of status of the device until the Clearance has been surrendered and all clearance tags have been removed under orders of the SOA. Used to signify a device or point used to isolate lines or equipment for Clearance purposes.
- **Caution Tag:** A yellow tag of Company approved design that shall be attached to a device indicating the device shall not be operated without System Operating Authority. Often used to signify a known issue with the device.

Temporary Protective Grounds: Grounding conductors installed on deenergized lines and/or apparatus and connected to the system neutral or a driven ground, after testing for voltage, to protect the worker by ensuring the work zone remains at ground potential.

Training: Training may include formal training classes, on-the-job training, safety meeting subjects, tail gate sessions, videos, study of operations and maintenance manuals or any other instruction that results in the employee understanding how to accomplish the assigned work safely.

U L: Underwriter's Laboratory

Vault: An enclosure, above or below ground, which personnel may enter and which is used for the purpose of installing, operating, or maintaining equipment or cable.

Vehicle Accident: Any physical contact of a moving or stationary vehicle under the direct control of a driver with any stationary, moving or flying object, that results in damage to the company vehicle, a general public vehicle, other property or person(s). This pertains to the driving and proper parking of a vehicle. Minor damage that results from reasonable and customary use of the vehicle will not be considered a vehicle accident.

Vehicle Incident: Any physical damage caused by or to a vehicle in its designed use, other than being driven.

100.0 GENERAL SAFETY

100.1 Purpose

- 100.1.1 Safety Rules have been created for the purpose of making the workplace safer for you, your fellow workers and the public and to prevent incidents. Always be alert, identify hazards and work safely on every occasion whether or not a specific rule covers the occasion.
- 100.1.2 This manual describes the importance of maintaining a safe workplace.
- 100.1.3 This manual also details the duties and responsibilities of the Company and each employee with regards to safety.
- 100.1.4 The current Safety Manual will be stored electronically, available for use online.
- 100.1.5 Supervision shall see that all employees integrate these safety rules into their work practices and work methods.

100.2 Scope

- 100.2.1 These Safety Rules apply to all Company employees and visitors.
- 100.2.2 Contractors that do business with the Company must comply with this manual.
 - 100.2.2.1 Contractors may follow their safety rules if their safety rules exceed these.
 - 100.2.2.2 Supervision shall advise the contractor and provide pertinent sections of the Company safety manual.
- 100.2.3 When local, state or federal laws and regulations pertaining to any given condition are more stringent than the Company rule, the more stringent law or regulation shall take precedence.

100.3 Safety Responsibilities

100.3.1 ALL EMPLOYEES

- 100.3.1.1 Safety is a collective responsibility. No one is exempt from the obligation to ensure that safety is paramount for themselves and others.
- 100.3.1.2 Know, understand and follow all safety rules that apply to your duties and assignments.
- 100.3.1.3 You are responsible for the personal safety of those working with you and those entering the job site.
- 100.3.1.4 Intimidation, horseplay, scuffling or similar activities are not permitted.
- 100.3.1.5 Advise your supervisor before commencing work:
 - A. If you are assigned work tasks you do not believe you are trained to perform.

- B. If you are called upon to perform work, you believe can't be completed safely.
- C. If you believe the crew is not sized to do the job safely.
- D. If you do not have the proper tools and/or do not have the proper equipment.

100.3.1.6 Do not bother or distract employees from the task they are performing.

100.3.1.7 Report near miss, first aids and safety concerns on the Safety Universal Reporting Form (SURF).

100.3.1.8 You are responsible for reporting and resolving unsafe conditions and/or safety concerns before the continuation of work.

100.3.1.9 Ensure trucks, tools and equipment are in good safe working order.

100.3.1.10 Communicate incidents to supervision in order that investigations can provide information to prevent such an occurrence from happening again.

100.3.1.11 Participate in incident investigations when called upon to provide information necessary to determine the root cause of the incident.

100.3.1.12 Participate in completing the Pre-Job Briefing.

100.3.1.13 Ensure manufacturer recommended weight limits are not exceeded on designated equipment such as ladders, scaffolds, harnesses, ropes, etc.

100.3.1.14 Consideration shall be given to combined weight of tools, equipment and personal weight.

100.3.1.15 Notify your supervisor if equipment with weight limits cannot be used safely within the designated limits.

100.3.1.16 Employees shall have their employee identification card on their person, available for display when entering customer property.

100.3.2 Supervisor/Manager Responsibilities

100.3.2.1 Supervisors/Managers are responsible and accountable for the safety of the employees reporting to them.

100.3.2.2 Regularly visit work/job sites and attend safety meetings.

100.3.2.3 Ensure that their employees are holding pre-job (tailgate) briefings.

100.3.2.4 Respond to employee safety concerns as quickly as possible and take employee concerns up the chain-of-command when results are not forthcoming.

100.3.2.5 See that safety meetings are planned and schedule employees to attend.

100.3.3 See that required incidents are investigated and reported on the Safety Universal Reporting Form. Share information with all employees to prevent similar future occurrences.

100.4 Housekeeping

100.4.1 Housekeeping in all facilities and vehicles is your responsibility.

100.4.2 Material and equipment shall be neatly and safely stored in all areas, including file and storage rooms.

100.4.3 Materials and equipment shall not be stored in aisles, driveways or at other locations where a hazard would be created.

100.4.4 Work areas, equipment and vehicles shall be kept neat and clean.

100.4.5 Snow, ice, seasonal vegetation and unwanted debris shall be removed from all walk areas as soon as possible.

100.5 Accident Reporting

100.5.1 Reporting Incidents/Accidents, Investigation Reports

100.5.1.1 All personal job-related illness/injuries, whether needing medical attention or not, shall be reported as soon as possible to supervision, medical department and safety coordinator.

100.5.1.2 Supervisor or designee shall contact the medical department prior to seeking proper medical care for the injured employee.

100.5.1.3 The Supervisor or designee shall accompany the employee to the medical provider and follow up with the medical department.

100.5.1.4 Personal Accident Reports shall be entered into the Safety Universal Reporting Form (SURF) as soon as possible but no later than 24 hours.

100.5.1.5 Investigations must be approved by a manager or director, and the Incident/Investigation Report entered into the SURF which includes a brief description of what happened and proposed action to keep a similar incident from happening again.

100.5.1.6 Safety Recommendations shall be entered into the Safety Suggestions Site and include a brief description of what happened and proposed action to keep a similar incident from happening again.

100.5.1.7 All motor vehicle incidents involving the public shall be reported to the proper law enforcement personnel as soon as possible.

100.5.1.8 All motor vehicle accidents shall be reported as soon as possible to supervision. A Motor Vehicle Accident Report shall be entered into the SURF as soon as possible but no later than 24 hours.

- 100.5.1.9 All preventable motor vehicle incidents shall be investigated and entered into the SURF which includes a brief description of what happened and proposed action to keep a similar incident from happening again.

101.0 COMPRESSED GASES

101.1 Gases Used

101.1.1 The following gases are used in various applications. Employees shall be aware of their hazards and how to safely handle them.

101.1.1.1 Oxygen

101.1.1.2 Nitrogen

101.1.1.3 Argon

101.1.1.4 Carbon Dioxide

101.1.1.5 SF 6

101.1.1.6 Compressed air

101.1.1.7 Acetylene

101.1.1.8 Propane

101.2 Handling and Storage of Cylinders

101.2.1 Contents of all compressed gas cylinders shall be stenciled, stamped or labeled on the shoulder of the cylinder.

101.2.2 Cylinders should be used in rotation as received from the supplier.

101.2.2.1 First In / First Out

101.2.3 Cylinders in storage shall be kept away from all sources of heat.

101.2.3.1 SF6 cylinders may be heated with a kerosene heater.

A. Do not use a propane torch to heat SF6 cylinders.

101.2.4 Cylinders in storage should be protected from direct sunlight, snow and ice.

101.2.5 Frozen cylinder valves may be thawed with warm (not boiling) water.

101.2.6 Care shall be exercised when handling all gas cylinders.

101.2.6.1 Lifting cylinders with slings is prohibited.

101.2.6.2 Cylinders shall be attached to a rack or cart when lifted mechanically.

A. Cylinders may be lifted by hand if racks or carts are not available.

101.2.6.3 Valve protection caps shall not be used for lifting cylinders except to raise a cylinder from a horizontal to a vertical position by hand.

A. Ensure valve protection cap is threaded on squarely and tightly.

101.2.7 Cylinders shall not be dropped or jarred.

- 101.2.8 Cylinders shall not be dragged or slid if other means are available, but can be moved for short distances by tilting and rolling on their bottom edge.
- 101.2.8.1 EXCEPTION: Dragging cylinders across substation rock surfaces is permissible when no other means is available.
- 101.2.9 Cylinder valves shall be closed when the cylinder is not in use.
- 101.2.10 Cylinder valve protective caps shall be in place unless regulators are attached to the cylinder.
- 101.2.11 All empty cylinders shall be identified as “Empty” by tagging, marking or other means.
- 101.2.12 Stored cylinders at all facilities shall always be secured in an upright position with use of a chain, strap or other suitable material whether full or empty.
- 101.2.12.1 EXCEPTION: When stored within the original shipping container.
- 101.2.13 Cylinders may be transported in the horizontal position if separated to prevent bumping into each other and secured to prevent movement.
- 101.2.13.1 EXCEPTION: Acetylene bottles shall be kept in the vertical position at all times.
- 101.2.14 Cylinders containing oxygen and flammable gases may be stored inside a building provided the storage area is isolated by a fire-resisting partition.
- 101.2.14.1 The storage area shall be a well-ventilated, dry location away from sources of heat, elevators, stairs or gangways.
- 101.2.14.2 The storage area shall be at least 20 feet from highly combustible materials or surrounded by a noncombustible barrier at least 5 feet high, having a fire-resistance rating of at least one-half hour.
- 101.2.15 Cylinders containing oxygen and flammable gases shall be separated by at least 20 feet when stored outside.
- 101.3 Gas Cylinder Setup and Removal
- 101.3.1 Cylinders shall be kept away from welding or cutting operations where sparks could reach them.
- 101.3.2 The recessed top of cylinders shall not be used as a place for tools.
- 101.3.3 Leaking cylinders shall not be used.
- 101.3.3.1 These cylinders shall be tagged and taken outdoors away from sources of ignition.
- 101.3.3.2 No attempt shall be made to repair a leaking cylinder. Supervision or the worker shall advise the cylinder supplier for replacement.
- 101.3.4 A flame shall never be used to detect cylinder leakage.

- 101.3.5 Never tamper with the safety relief devices on cylinders.
 - 101.3.5.1 A trained worker may remove the safety relief device on SF6 bottles when reclaiming gas.
- 101.3.6 Never apply force to connections that do not fit.
- 101.3.7 Cylinders shall not be allowed to contact energized conductors, ground wires from electrical equipment or welding machines.
- 101.3.8 Valves shall be closed and all pressure released from the regulator before removing regulators from a cylinder.
- 101.3.9 Oil or grease shall not be used for lubricating valves, gauge connections or other parts of a gas system.
- 101.4 Argon, Carbon Dioxide
 - 101.4.1 Personnel exposed to a cryogenic liquid (Argon and Carbon Dioxide) or cold vapor shall be aware of the frostbite hazards to exposed skin and eye tissue, wear personal protective equipment and observe the following:
 - 101.4.1.1 Protective gloves shall be worn when cold liquids and their vapors are handled.
 - 101.4.1.2 Gloves should be loose fitting so they can be removed quickly if liquids spill into them.
 - 101.4.1.3 Trousers should remain outside boots or work shoes.
- 101.5 Acetylene
 - 101.5.1 Acetylene cylinder valves shall not be opened more than one quarter of a turn.
 - 101.5.2 The valves of acetylene cylinders shall be opened slowly and only with the special wrench provided.
 - 101.5.3 Special wrenches shall be left connected to the acetylene cylinder while it is in use.

THIS PAGE
INTENTIONALLY
LEFT BLANK

102.0 EXCAVATION GUIDELINES

102.1 General

102.1.1 Company personnel who will be performing excavation activities on Company property or are under contract to perform these excavation activities shall perform these activities in a safe and prudent manner. This standard is to protect employees from a potential cave-in, other emergency conditions, protect the public from an open excavation and protect buried underground utilities.

102.1.2 This standard applies to all Company and Contracted personnel who will be performing excavation activities on Company property or Company Right-of-Way.

102.2 Buried Underground Utilities

102.2.1 Prior to beginning excavation activities at the desired location, excluding Generation Plant sites, call a preferred locate service to have a locate completed of buried underground utilities for the work site. This call must be completed no less than 72 hours prior to the beginning of work.

102.2.2 If the excavation is to be performed on a Generation Plant site, in addition to making contact with 1-800-DIG-SAFE, plant management must be contacted to arrange for drawings that would indicate the underground utility locations.

102.3 Pre-Job Planning

102.3.1 Requests for locates or possession of plant drawings has been completed.

102.3.2 Soil type(s) have been determined.

102.3.3 Protective systems have been determined i.e. Shielding, Shoring, Sloping or Benching.

102.3.4 Personnel and qualifications have been selected.

102.3.4.1 Competent/Top Person

102.3.4.2 Registered Professional Engineer

102.3.4.3 Equipment operator(s)

102.3.5 Emergency Plan has been documented.

102.3.6 Protect the public from an open excavation.

102.4 Protective Systems

102.4.1 Protective systems shall be used on any excavation of 5 foot or greater.

102.4.1.1 Shielding or shoring will be used in situations in which sloping or benching cannot be completed or the soil will easily cave-in (see Figure 102-1).
Employees are not allowed to ride in trench boxes.

- 102.4.1.2 Sloping or benching will be used and will be constructed (see Figure 102-2) unless otherwise determined by a Registered Professional Engineer.
- 102.4.1.3 Any excavation of 20 foot or greater must be overseen by a Registered Professional Engineer.
- 102.4.2 Spoils piles and stored materials shall not be within 2 foot of the excavation edge.
- 102.4.3 Means of egress shall be utilized in all excavations of 4 feet or more in depth and be placed with no more than 25 feet of lateral travel from where employees are working.
- 102.4.4 Walkways shall be provided for employees that must cross a trench that is 4 or more feet in depth. The walkway will be constructed with proper guardrails.
- 102.4.5 Employees shall not work under any suspended load.
- 102.4.6 Employees shall not be permitted to work in trenches that have standing water or have water entering the excavation. A competent person shall inspect the excavation prior to allowing work to resume following large amounts of rain.
- 102.4.7 If the construction of an excavation will disrupt the drainage of run-off water, provisions will be made to direct the drainage away from the excavation and allow for proper drainage.
- 102.4.8 Where the trench is being constructed along an adjacent structure, wall, road, etc. A Registered Professional Engineer will evaluate the stability of the structure and determine corrective actions. Underpinning or other types of reinforcement will be utilized to insure the stability of these structures.
- 102.5 Hazardous Atmospheres
- 102.5.1 Any excavation of 4 foot or greater in depth shall be evaluated for a hazardous atmosphere.
 - 102.5.1.1 Oxygen deficiency or enriched atmospheres (less the 19.5% or greater than 23.5%).
 - 102.5.1.2 Hazardous gas (hydrogen sulfide (H₂S), Legionella, carbon monoxide (CO) or explosive gasses (LEL).
- 102.6 Inspections
- 102.6.1 Daily inspections shall be conducted by a competent person.
- 102.6.2 A competent person shall perform an inspection prior to resuming work following a rainstorm.
- 102.6.3 When work is being performed in a trench 5 foot or deeper a top person shall be positioned to watch of signs of a cave in or other hazard.

102.7 Emergency Situations

102.7.1 During the preplan phase an emergency response plan needs to be developed to determine if 911 services or generation ERT personnel will be utilized for rescue services.

102.8 Public Safety

102.8.1 The excavation perimeter needs to be guarded to prevent the general public from being able to enter/fall into opening.

102.8.2 An excavation along a roadway needs to be marked to identify to vehicles and other public that there is an open trench. This can be completed with the use of lighted barricades or hard barriers.

Figure 102-1

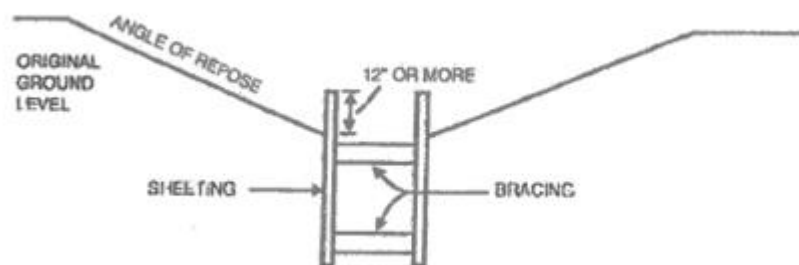


Figure 102 1



THIS PAGE
INTENTIONALLY
LEFT BLANK

103.0 FIRE PREVENTION

103.1 General

- 103.1.1 Flammable liquids shall be kept in and dispensed from UL or company approved containers.
- 103.1.2 Fire resistant areas shall be used for storing and transferring flammable liquids.
- 103.1.3 Do not fill portable gas cans when they are in the bed of a pickup. Decals shall be placed at all Company fueling stations prohibiting filling gas cans in the bed of a vehicle.
- 103.1.4 Do not re-enter a vehicle during the refueling process. Cellular phones, company radios and other electronic devices shall not be operated during refueling.
- 103.1.5 "No Smoking" and "Stop Your Motor" signs shall be posted at Company fueling locations.
- 103.1.6 Combustible materials such as oil-soaked rags, used rags, trash and shavings shall be kept in UL or company approved metal containers with metal lids. The materials may be transported in an enclosed bag until disposal site is reached at end of day.
- 103.1.7 Rubbish and rags shall not be allowed to accumulate.
- 103.1.8 Flammable liquids such as gasoline, acetone, naphtha or lacquer thinner shall not be used for solvents or general cleaning purposes.
- 103.1.9 Temporary structures other than scaffolds shall not be constructed of wood, and shall be designed to minimize the collection of combustible dust.

103.2 Smoking or Open Flames

- 103.2.1 Smoking is prohibited, without exception, in all Company facilities and designated nonsmoking areas and all company vehicles. Smoking areas shall be identified at all service building locations.
- 103.2.2 Smoking or open flames shall not be permitted in areas where quantities of combustible materials are kept or where combustible gases or vapors might be present; for example, oil rooms, hydrogen areas, flammable liquid, battery rooms or similar storage areas.
- 103.2.3 A sign with "Danger - No Smoking or Open Flames" or approved equivalent wording shall be clearly posted at entrances to areas and in areas where flammable liquids or gases are stored.

103.3 Extinguishing Fires

- 103.3.1 The only fires which employees shall attempt to extinguish are those in the incipient stage (beginning stage of fire). The local fire department shall be contacted to respond to all fires.
- 103.3.2 Interior and exterior fires shall be considered incipient stage when Incipient Fire trained personnel function as follows:

- 103.3.2.1 They are able to safely fight the fire in normal work clothing.
- 103.3.2.2 They are not required to crawl or take evasive action to avoid smoke and heat.
- 103.3.2.3 They are not required to wear thermal protective clothing or self-contained breathing apparatus.
- 103.3.2.4 They are able to fight fire effectively with portable extinguishers or 1 ½" handlines flowing up to 125 gpm.
- 103.3.3 Exterior fires shall be considered appropriate for defensive action outside of the hot and warm zones by Incipient Fire trained personnel when the following occurs:
 - 103.3.3.1 The personnel have been trained for that activity.
 - 103.3.3.2 SCBA & thermal protective clothing are not required.
 - 103.3.3.3 Personal evasive action is not required.
 - 103.3.3.4 Personnel are able to perform defensive action effectively, using handlines flowing up to 300 gpm, master streams, or similar devices for the manual application of specialized agents.
- 103.3.4 Under no circumstances will personnel intentionally expose themselves to breathing smoke or toxic fumes from a fire. Under no circumstances will incipient fire trained personnel utilize any type of additional PPE with the intention of performing beyond the incipient fire level. This is not intended to discourage personnel from donning extra PPE to protect themselves from unexpected hazards. At a minimum, personnel are required to utilize standard PPE when fighting fires. Standard PPE consists of a hard hat, safety glasses, approved primary work clothing, approved footwear, and approved gloves.
- 103.3.5 Only Company-approved fire extinguishers shall be used.
- 103.3.6 Following use, fire extinguisher shall be tagged and/or removed from service for recharging before placing back in service.
- 103.3.7 Location:
 - 103.3.7.1 Fire equipment shall be so located that it is readily accessible in the event of a fire.
 - 103.3.7.2 Equipment stations which are not plainly visible shall be identified by prominent signs or markings.
 - 103.3.7.3 Unauthorized removal or relocation of fire equipment is not permitted.

- 103.3.8 Tools, materials, equipment, and other items shall not be stored near firefighting equipment so that access to or visibility of the equipment or markers is obstructed.
- 103.3.9 Inspection and Recharge
 - 103.3.9.1 All fire extinguisher, hoses, and equipment shall be visually inspected each month.
 - 103.3.9.2 Fire extinguishers shall be tagged and the monthly inspection noted on the tag. *All portable fire extinguishers shall have a recorded annual maintenance check.
 - 103.3.9.3 Only approved recharging chemicals shall be used.
 - A. NOTE: Do not mix incompatible recharging chemicals.
- 103.3.10 Pressure Test: Hydrostatic pressure tests shall be performed as required by a qualified service agency:
 - 103.3.10.1 When examination shows damage, corrosion, or mechanical damage.
 - 103.3.10.2 Type ABC fire extinguishers, shall be hydrostatically tested every 12 (twelve) years.

THIS PAGE
INTENTIONALLY
LEFT BLANK

104.0 HAND & POWER TOOLS

104.1 Tool Approval

- 104.1.1 All tools, regardless of ownership, shall be of an approved type and quality approved by management, well maintained and shall not be modified without management approval. Tools are subject to inspection at any time. Management has the authority and responsibility to condemn unserviceable tools, regardless of ownership.
- 104.1.2 Defective tools shall be tagged to prevent their use and shall be removed from the job site for repair or to be destroyed.
- 104.1.3 Hammers with metal handles, screwdrivers with metal continuing through the handles, and metallic measuring tapes shall not be used on or near energized electrical circuits or equipment.

104.2 Tool Care

- 104.2.1 Tools shall not be thrown from place to place or from person to person; tools that must be raised or lowered shall be placed in tool buckets or firmly attached to hand-lines.
- 104.2.2 Tools shall never be left unsecured on elevated places.
- 104.2.3 Impact tools (i.e., chisels, punches, drift pins) that mushroom or crack shall be dressed, repaired, or replaced before further use.

104.3 Tool Use

- 104.3.1 All tools and equipment shall be inspected prior to use.
- 104.3.2 Tools shall be used only for their intended purpose. Employees shall reference all applicable operational safety rules per the owner's manual.
- 104.3.3 Chisels, drills, punches, ground rods, and pipes shall be held with suitable holders or tongs (not the hands) while being struck by another employee. Chisels, drills, punches, and other tools shall be held with suitable holders or tongs (not with hands) while being struck with substantial force where use of such equipment is feasible.
- 104.3.4 Shims shall not be used to make a wrench fit.
- 104.3.5 Tools with sharp edges or points should be stored, handled, and/or guarded appropriately. They should not be carried in pockets.
- 104.3.6 Hand tools such as screwdrivers, skinning knives, wire cutters and other tools shall be insulated as a safeguard against flashes and shorts if working where clearances are close on conductors and equipment energized at 600 volts or less.
- 104.3.7 Tools with loose, cracked, or splintered wooden handles shall be repaired or replaced.
- 104.3.8 Tools shall not be left where they may cause a person to trip or stumble.

- 104.3.9 When performing overhead grinding, drilling, sanding, buffing, or other operations involving material removal, workers shall wear personal protective equipment to prevent materials from entering the mouth, nose, eyes and ears.
- 104.3.10 When chips must be removed from a drill press or portable drill, the drill motor must be stopped from rotating before the chips can be removed.
- 104.3.11 When working on or above an open grating, a canvas or other suitable covering shall be used to cover the grating to prevent tools or parts from dropping to a lower level, or the danger area shall be barricaded or guarded.
- 104.3.12 The insulation of hand tools should not be depended upon for protection from electrical shock unless specifically designed and approved for such use.
- 104.3.13 Electric extension cords or cables shall be inspected before each use, and damaged extension cords shall be removed from service. They may be replaced or repaired with approved insulating materials.
- 104.3.14 Electrical extension cords or cables shall not be used without proper ground fault protection. (GFI or GFCI)
- 104.3.15 Electrical extension cords or cables shall be placed and used in a manner so that they do not present a tripping hazard.
- 104.4 Portable Electric Tools
- 104.4.1 Portable power tools and equipment must be maintained in good condition at all times. They may not be altered and are to be used only for their intended purpose.
- 104.4.2 Power tools shall be used only within their design capability and shall be operated according to the manufacturer's instructions.
- 104.4.3 All power tools shall be examined before use to insure general serviceability and the presence of all applicable safety devices. The power cord shall be inspected before use and shall have deficiencies repaired before returning to service.
- 104.4.4 The non-current carrying metal parts of portable electric tools (e.g., drills, saws, and grinders) shall be effectively grounded when connected to a power source unless:
 - 104.4.4.1 The tool is an approved double-insulated type, or
 - 104.4.4.2 The tool is connected to the power supply by an isolating transformer, Ground Fault Circuit Interrupter (GFCI), or other isolated power supply (such as 24 V DC systems).
- 104.4.5 Electrical tools shall not be used where there is a hazard of flammable vapors, gases, or dusts.
- 104.4.6 Caution shall be exercised whenever extension cords or tools are used near energized conductors or equipment.

105.0 HEALTH/SAFETY/ENVIRONMENTAL CONTROLS

105.1 Health Hazards

105.1.1 Identify and understand the potential health hazards you may encounter on the job.

105.1.1.1 Health hazard information may be obtained through supervision or Safety Department.

105.1.2 SDSs shall be obtained and made available by the Industrial Hygiene Specialist for all substances prior to their purchase.

105.1.3 All new SDSs shall be reviewed by supervision and employees prior to use.

105.1.4 Employees shall review the material's SDS for specific requirements or contact the Industrial Hygiene Specialist.

105.1.4.1 SDSs shall be reviewed prior to using or handling chemicals and hazardous materials when the employee is unfamiliar with the hazard and precautions.

105.1.5 Read and understand identifying labels and apply the manufacturer's recommended safety and health precautionary measures when using chemicals and hazardous materials.

105.2 Chemicals and Hazardous Substances

105.2.1 All chemicals shall be stored in containers recommended by the manufacturer and in designated storage locations.

105.2.2 All secondary containers shall be labeled to identify contents including drums, cans, tubes, etc.

105.2.3 Employees handling hazardous materials shall be trained in handling and disposal procedures, safety precautions and personal protective equipment.

105.2.3.1 Hazardous materials are identified in SDS sheets.

105.2.4 Proper neutralizing materials shall be readily available in any area subject to hazardous material spillage.

105.2.5 Eyewash shall be readily available for immediate use.

105.2.6 Exercise good personal hygiene habits when working with solvents or industrial cleaning compounds.

105.2.6.1 Do not smoke, eat, or drink in areas where solvents or industrial cleaning compounds are in use.

105.3 PCBs

105.3.1 When working with PCBs, 500 ppm and above, in enclosed areas, adequate forced ventilation shall be used.

- 105.3.2 Employees shall not be required to enter transformers or breaker tanks where PCBs, 500 ppm and above, are present until the vapors have been removed by forced ventilation.
- 105.3.3 Employees should avoid skin contact with PCBs. Approved gloves shall be worn for protection when the job requires placing hands in PCB liquid or handling parts or equipment contaminated by PCBs.
- 105.3.4 If inadvertent skin contact occurs, the skin shall be washed with waterless hand soap and dried with paper towels, especially before eating, smoking, drinking or touching other parts of the body.
- 105.3.5 If there is a possibility of PCBs making contact with employees' clothing, approved protective clothes (apron or disposable coveralls and shoe covers) shall be worn.
- 105.3.6 Approved eye protection shall be worn any time employees work with or handle PCBs. Minimum eye protection shall consist of safety glasses. If a splashing hazard exists, chemical mono goggles or face shield shall be worn.
- 105.3.7 If there is eye contact with PCBs, the eyes shall be flushed with water for 15 minutes and a physician consulted immediately.
- 105.3.8 Tools and other reusable equipment used to work with PCBs shall be washed with approved solvent and wiped dry upon completion of the job.
- 105.3.9 Before leaving any job involving PCBs, all contaminated disposable items (ordinary work gloves, rags, paper towels, coveralls, used solvents, etc.) shall be disposed of according to established environmental procedures.
- 105.4 Silica
- 105.4.1 Please see [Corporate Safety Rule – CORP-SR-6003: Silica Management](#).

106.0 OFFICE & BUILDING SAFETY

106.1 General

- 106.1.1 Stairways, aisles and walkways shall be kept clean, clear and free of obstructions and debris.
- 106.1.2 Office equipment shall be installed, operated and maintained in a safe manner. Unsafe office furniture shall not be used.
- 106.1.3 Exposed moving parts of power-driven office machines shall be covered with guards.
- 106.1.4 Sharp burrs and sharp edges on metal cabinets, desks, tables, and doors shall be reported to supervision or Facilities for repair.
- 106.1.5 Heavy lifting and furniture moving shall be performed by persons trained and equipped to perform this work.
- 106.1.6 Keep pins, razor blades and other such sharp objects in a special drawer, compartment or container.
- 106.1.7 Ladders or step stools shall be used to reach articles stored at heights.
- 106.1.8 Turn off and/or unplug office machines prior to making adjustments, repairs, or performing maintenance.
 - 106.1.8.1 EXCEPTION: Copiers, printers, and FAX machines may have paper jams removed or toner cartridges replaced.
- 106.1.9 Keep overhead bins in cubicles made of modular furniture fully opened or closed.
- 106.1.10 All paper cutters shall be in the locked position when not in use.

106.2 Floor Surfaces

- 106.2.1 Pick up paper clips, thumb tacks, pencils, papers and other objects immediately.
- 106.2.2 Wipe up spilled liquids immediately.
- 106.2.3 Report all loose tiles or carpeting to supervision or Facilities immediately

106.3 Chairs

- 106.3.1 Periodically inspect your chair for broken springs, welds, and loose screws.
- 106.3.2 Keep all chair legs on the floor.
- 106.3.3 Never use a chair as a ladder.
- 106.3.4 Do not propel a chair across the floor while seated in it.
- 106.3.5 Report all damaged chairs to supervision.
- 106.3.6 Do not lean back in chairs with feet propped or raised above seat level.

106.4 Lighting

106.4.1 Use enough light to complete the job correctly and safely.

106.4.2 Report dirty or non-working lights to supervision or Facilities.

106.5 Electric Cords

106.5.1 Use only UL approved cords.

106.5.2 Power strips with a cord no longer than six (6) feet shall be allowed for permanent use where equipment cannot be plugged directly into a wall/floor receptacle.

106.5.3 Check for loose connections, frayed wiring, broken sockets or other defects before using any electrical device.

106.5.4 Report damaged electric cords immediately to supervision or Facilities.

106.5.5 Damaged electric cords shall not be used until repaired or replaced.

106.5.6 Prevent electric cords on office machines and telephones from becoming tripping hazards.

106.5.7 Size the electric cord to handle the maximum current required by the tool.

106.6 Stairways

106.6.1 Handrails should be used when available on stairways.

106.6.2 Climb or descend one step at a time. Do not run up or down stairs.

106.6.3 Report damaged stairs or housekeeping problems to supervision or Facilities.

106.7 Filing Cabinets

106.7.1 Open only one drawer at a time. Fill drawers from the bottom up to prevent tipping.

106.7.2 Drawers in desks, cabinets and files shall be closed unless working in them.

106.7.3 Filing cabinets shall not be used as a step stool or ladder.

106.7.4 Use handles to open and close file drawers or cabinets.

106.7.5 Do not stack heavy items on the tops of file cabinets.

106.8 Ergonomics

106.8.1 Arrange workstations and/or work areas to accommodate the full range of required movements.

106.8.2 Ensure that all machine controls are easily accessible prior to operation.

106.8.3 Arrange work spaces and areas to avoid the need for storing objects overhead and for overreaching.

106.8.4 Office tools and equipment should be selected for ergonomic features.

106.8.5 Plan work activities to reduce or eliminate repeated manual lifting where possible.

106.8.6 Report ergonomic concerns to your supervisor.

106.9 Building Security

106.9.1 All visitors shall report to a company employee or designated contact upon arrival.

106.9.2 When confronted by a stranger in Company facilities, ask their business, who they are meeting with and report the information given to your supervisor or building security. Call 911 if an emergency exists.

106.9.3 Do not admit strangers unless you confirm their destination with the individual they are to meet.

THIS PAGE
INTENTIONALLY
LEFT BLANK

107.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

107.1 General

107.1.1 Loose clothing or jewelry shall not be worn near rotating equipment or energized parts.

107.1.1.1 Clothing shall not be worn if they are torn or have holes. If damaged at work, precautions shall be taken to reduce employee exposure to injuries for the completion of the shift.

107.1.1.2 Hair that may become entangled in rotating equipment must be contained.

107.1.2 Clothing saturated or impregnated with chemicals and/or petroleum products shall be changed as soon as possible and not worn until properly cleaned or replaced.

107.1.3 All apparel must be in good repair.

107.1.3.1 Frays and holes are not acceptable.

107.2 PPE Use

107.2.1 All employees exposed to hazards shall wear proper protective equipment.

107.3 Inspection and Maintenance

107.3.1 Employees are responsible for the inspection and maintenance of all personal protective equipment.

107.3.2 Protective equipment shall be inspected before use. Defective equipment shall not be used and shall be repaired or replaced immediately.

107.3.3 Do not store protective equipment when it is wet or dirty.

107.4 Selection of PPE

107.4.1 Standard work practices will specify the minimum PPE to be used for jobs. When in doubt, employees should consult their supervisors. Management also may designate specific areas where use of certain safety equipment is mandatory.

107.5 Foot Protection

107.5.1 For any activities where workers may be exposed to impact, falling objects, or puncture hazards, appropriate protective safety toed footwear shall be worn that meets or exceeds ASTM 2413 and shall be marked accordingly.

107.5.2 Boots shall be made of leather or approved cut resistant material with a minimum of a 6-inch top to provide support and protection for the ankle area. Employees who are required to climb ladders, poles, towers or structures shall have footwear with a defined heel.

107.5.3 When working in wet/muddy conditions, safety-toed (meets ASTM 2413 requirements) rubber boots (muck boots) may be worn instead.

- 107.5.4 Classifications who do not fall under the above requirements must wear shoes of sturdy construction. Office personnel shall wear footwear appropriate to protect from hazards within the work environment that they are exposed to.
- 107.5.4.1 If employees are required to work outside of the office environment, special attention shall be given to specific hazards, such as terrain, weather conditions and job tasks. Footwear that provides adequate protection, stability and traction for the conditions shall be worn.
- 107.5.5 When weather conditions and work environment warrants, extra protection, such as ice cleats, should be worn to provide additional traction.
- 107.6 Head Protection
- 107.6.1 Employees shall wear company approved ANSI Z89.1 hard hats at all times while on the work site. Hard hats shall be inspected, cleaned and replaced according to the manufacturer's instructions.
- 107.6.2 The exterior of hard hats shall not be altered or defaced by stamping, scratching, cutting, or painting. Holes shall not be drilled into hardhats.
- 107.6.3 Only Company issued decals and one union affiliated decal, shall be permitted on the hard hat.
- 107.6.3.1 Stickers shall not interfere with inspection of the hard hat.
- 107.6.4 The hard hat may be fitted with a Velcro strip to accommodate the hard hat light.
- 107.7 Eye and Face Protection
- 107.7.1 Employees and visitors shall wear ANSI Z87.1 approved safety glasses, goggles, or face shields at all times where there is a possibility of eye injury, when handling tools or materials and in designated locations. All safety glasses must have side shields or adequate peripheral protection.
- 107.7.2 A higher level of eye protection (goggles, face shields, etc.) may be required wherever there is an increased danger of eye injury.
- 107.7.3 Face shields shall be used with safety glasses when performing grinding operations.
- 107.8 Hearing Protection
- 107.8.1 Company approved hearing protection shall be worn in designated areas, or whenever noise is offensive, such as jackhammers or other similar air-operated tools.
- 107.8.2 All employees wearing hearing protection shall be trained in its use.
- 107.9 Hand Protection
- 107.9.1 Company approved gloves suitable for the work shall be worn by all workers handling materials or engaged in work where the possibility of hand injuries may exist.

- 107.9.2 For tasks requiring the use of cutting tools or handling of materials with sharp edges, cut-resistant gloves shall be used for protection.
- 107.9.3 Open blade knives should only be used as a last resort and shall not be used as a substitute for a wire/cable stripping tool or unless no tool is designed and available for the type of application being performed.
- 107.9.3.1 When it is determined that a knife is the proper tool for the job, the material being cut will be secured in a safe manner and the knife will be used in the safest possible manner.
- 107.10 **Respiratory Protection**
- 107.10.1 When performing certain tasks, wearing respiratory protection may be required. These conditions include:
- 107.10.1.1 Working around SF6 byproducts.
- 107.10.1.2 Spray painting.
- 107.10.1.3 Working with lead (lead cable, lead based paint, etc.).
- 107.10.1.4 Working with asbestos containing materials.
- 107.10.1.5 Welding or Cutting with the following:
- 107.10.1.6 Stainless steel alloys (hexavalent chromium exposure)
- 107.10.1.7 Galvanized steel alloys (metal fume fever)
- 107.10.1.8 Enclosed spaces (inadequate ventilation)
- 107.10.1.9 The Industrial Hygiene Department should be contacted if questions arise or for guidance on the need for respiratory protection and possible exposure monitoring to insure employees are not over exposed to hazardous materials, fumes or vapors.
- 107.10.2 Selection of respiratory protection shall be based the Respirator Selection Guide.

Mandatory Respirator Selection Guide	
Hazard Examples	Respirator Types
Asbestos, Lead Dust Welding or Cutting	HEPA – Purple or Magenta
SF6 Byproducts	Organic Vapor / Acid Gas - Yellow And HEPA – Purple or Magenta
Solvent Based Spray Painting	Organic Vapor – Black

	and HEPA – Purple or Magenta
--	---------------------------------

- 107.10.3 Employees who must use respirators shall be trained.
- 107.10.4 Employees shall be clean-shaven where the respirator seal contacts the face.
- 107.10.5 Employees who must use respiratory protection shall be;
 - 107.10.5.1 Medically evaluated every 2 years,
 - 107.10.5.2 Fit tested annually,
 - 107.10.5.3 Trained for proper respirator use annually.
- 107.10.6 Respirators shall be cleaned, maintained and stored in a sanitary manner.
- 107.10.7 Employees who choose to use paper masks will receive training regarding their proper use.
- 107.11 High Visibility Safety Apparel
- 107.11.1 Company issued high-visibility safety apparel shall be worn anytime work is being performed where traffic is present, including all Evergy properties; within 15' of the edge of any public roadway, and the area between the fences of a State DOT controlled roadway or right of way.
 - 107.11.1.1 High Visibility reflective gaiters are required for nighttime activities within 15' of the edge of any public roadway, and the area between the fences of a State DOT controlled roadway or right of way.

Portable Ladders & Scaffolds

108.1 Extension Ladders

- 108.1.1 Employees shall be trained prior to the use of ladders.
- 108.1.2 All ladders shall be labeled by the manufacturer indicating maximum load capacity. Maximum load capacity shall not be exceeded.
- 108.1.3 All ladders shall be inspected before each use. Do not use ladders having broken, loose, or cracked rungs, side rails or braces.
- 108.1.4 Defective ladders shall be tagged and removed from service, then repaired or discarded.
- 108.1.5 Face the ladder and use at least one hand to grasp the ladder while ascending or descending.
- 108.1.6 Boxes, crates, chairs, etc. shall not be used in place of a ladder.
- 108.1.7 One employee at a time shall work from a ladder.
- 108.1.8 Doors shall be locked or otherwise guarded if a ladder is placed where the opening of the door could swing into the ladder.
- 108.1.9 Ladders shall not be painted except for approved stenciling identification purposes.
- 108.1.10 Ladders shall be treated only with a transparent, nonconductive material.
- 108.1.11 Ladder side rails shall be tied off and shall extend at least 36 inches above the landing area when personnel will be transferring from the ladder to an elevated position.
 - 108.1.11.1 The ladder shall be held by a competent person if it cannot be tied off.
 - 108.1.11.2 EXCEPTION: There is no need to tie off a ladder in a manhole if the ladder extends 36 inches above the manhole ring level.
- 108.1.12 Straight and extension ladders shall have nonskid safety feet or other means to prevent slipping. Ladder rungs and soles of footwear should be as free as possible of substances such as oil, grease and mud which could cause slipping.
- 108.1.13 Ladders shall be placed to eliminate any movement at top or bottom, or tied, blocked or otherwise secured.
- 108.1.14 Ladders shall be placed so the distance from the foot of the ladder to the base of the wall or other support is approximately one-fourth of the working length of the ladder to form a 75-degree angle.
- 108.1.15 Place the ladder on a solid base.

108.1.16 Ladders shall not be used as scaffold platforms.

108.1.17 Do not work from the top three rungs of a ladder.

108.1.18 Never over extend your reach on a ladder, move the ladder to reach your object.

108.2 Stepladders

108.2.1 All stepladders shall be labeled by the manufacturer indicating maximum load capacity. Maximum load capacity shall not be exceeded.

108.2.2 Fiberglass stepladders shall be used and shall be inspected before each use.

108.2.3 Do not use ladders having broken, loose, or cracked rungs, side rails or braces.

108.2.4 Defective ladders shall be tagged and removed from service, then repaired or discarded

108.2.5 Do not use the top two steps of a stepladder.

108.2.6 Tie, block, secure or hold the ladder in place to prevent movement when an employee is working at a point 10 feet or higher above the ground or floor.

108.2.7 Stepladder legs shall be spread full and locked open when the ladder is in use.

108.2.8 Do not store materials, tools, etc. on steps.

108.3 Step Stools

108.3.1 Office step stools may be constructed of metal, provided contact with electrical devices is avoided.

108.4 Safety Platform Ladders

108.4.1 All platform ladders shall be labeled by the manufacturer indicating maximum load capacity. Maximum load capacity shall not be exceeded.

108.4.2 Inspect platform ladders before each use.

108.4.3 Do not use platform ladders having broken, loose, or cracked rungs, side rails or braces.

108.4.4 Defective platform ladders shall be tagged and removed from service, then repaired or discarded.

108.4.5 Platform ladder legs shall be firmly locked in place to prevent movement when in use.

108.5 Scaffolds

108.5.1 Scaffold shall be erected, moved, dismantled and altered only by trained employees.

108.5.2 Scaffolds and their components shall be capable of supporting at least four times the maximum intended load.

108.5.3 Unstable objects such as barrels, boxes, loose brick or concrete blocks shall not be used to support scaffolds or planks.

- 108.5.4 All scaffolds higher than 4 feet above the ground or floor shall have guardrails, mid rails and toe boards installed on all open sides and ends
- 108.5.5 Guardrails shall not be less than 2 x 4 nominal and shall be 42 inches high (+/- 3 inches) with a mid-rail installed half way between the top rail and the surface.
- 108.5.6 Toe boards shall be a minimum of 4 inches in height.
- 108.5.7 Supports shall be at intervals not to exceed 8 feet.
- 108.5.8 All scaffold planking, or platforms shall be overlapped a minimum of 12 inches end to end or secured from movement.
- 108.5.9 Scaffold planks shall extend over the end support by not less than 6 inches (unless cleated) no more than 12 inches.
- 108.5.10 An access ladder with safe access shall be provided.
- 108.5.11 Do not work on scaffolds during storms or high winds.
- 108.5.12 Tools, materials and debris shall not be allowed to accumulate on scaffolds.
- 108.5.13 Scaffolds shall not be moved without first removing all tools, materials and equipment from the deck.
- 108.5.14 A competent person shall inspect a scaffold prior to use each shift and shall document the inspection on the scaffold tag.
- 108.6 Mobile Scaffolds/Platforms/Scissor Lift/Man Lifts
- 108.6.1 Only trained employees shall operate mobile scaffolds/platforms.
- 108.6.2 It is permissible to ride on mobile scaffolds/platforms only if they have been designed for that purpose by the manufacturer.
- 108.6.3 Controls shall be tested each day before use to determine they are in safe working condition.
- 108.6.4 Employees shall always stand firmly on the floor of the basket/cage and shall not sit or climb on the edge or use planks, ladders or other devices for a work position.
- 108.6.5 Belting off to an adjacent pole, structure, or equipment while working from mobile scaffolds/platforms shall not be permitted.
- 108.7 Fall Protection
- 108.7.1 All fall protection equipment shall be inspected before each use for wear, damage and other deterioration, and defective components.
- 108.7.2 All fall protection equipment shall be inspected annually by a competent person. The inspections shall be documented.

- 108.7.3 Each employee on a walking/working surface with an unprotected side or edge which is 4 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest system.
- 108.7.4 Personal fall arrest systems, covers, or guardrail systems shall be erected around holes that are more than 4 feet above lower levels.
- 108.7.5 Anytime aerial bucket equipment, powered manlifts (JLGs), or forklift attached manbaskets are used, a personal fall arrest system shall be used and secured to the attachment point on the boom, manlift, or manbasket.

108.8 Working from Roofs

108.8.1 Commercial roofs:

- 108.8.1.1 Working on a commercial roof on foot shall not be done.
- 108.8.1.2 If there is no other method for work than from a commercial roof on foot, the supervisor will be consulted before work commences. The supervisor and crew should then consider the following items and put one or more methods in place:
- A. Redesign the work if possible, to avoid working on a commercial roof on foot.
 - B. Ensure a second person is present during the work to act as a spotter.
 - C. Contact the customer to learn about the condition and age of the roof.
 - D. Inspect the roof from the inside/under side for skylights, holes, etc.
 - E. Note all findings of roof instability on the customer account for future reference.

108.8.2 Residential roofs:

- 108.8.2.1 Working on a residential roof on foot shall be avoided if possible.

109.0 SAFE WORK PRACTICES

109.1 General

109.1.1 Cell phone use is prohibited in situations that may risk harm to the employee or others.

109.1.2 No audio device shall be used when working in the field. (Including, but not limited to, Bluetooth devices.)

109.1.3 Jumping over fences and gates is prohibited.

109.2 Job Planning

109.2.1 A pre-job briefing (Tailgate) shall be conducted to plan the work before the start of every job. Those working alone must complete one at the beginning of their shift unless conditions/job change.

109.2.1.1 Listed below are pre-job briefing requirements:

- A. Identify all hazards associated with the work at hand,
- B. Determine the work procedures involved,
- C. Determine special precautions to be taken,
- D. Identify energy source controls,
- E. Determine PPE required,
- F. Identify specific equipment.

109.2.2 Additional job briefings shall be held any time changes occur in the work plan.

109.2.3 Additional job briefings shall be held any time any additional workers are added. Report to the worker in charge if you arrive at the job site after the pre-job briefing.

109.2.4 Each worker shall be involved in pre-job briefings.

109.2.5 Pre-Job Briefing Forms (sometimes referred to as “tailgates, daily job briefing forms or PJB’s) shall be saved by the work group or supervisor for 14 days.

109.3 Protecting the Public

109.3.1 Keep the public away from locations where Company work activity presents hazards.

109.3.2 Use barriers, cones, lights, warning and work signs, "Do Not Enter" tape, or “Caution” tape on jobs and in locations where hazards to pedestrians and vehicles exist.

109.3.3 Equipment, materials or other obstructions shall not be left within 15 feet of fire hydrants nor directly in front of entrances to either private or public property.

109.3.4 Storage of materials, parking of equipment and vehicles when not in use will not be permitted on highway right of way if any alternative is available. If materials must be

stored or vehicles and equipment parked on the right of way, it shall be permitted only to the farthest edge of the right of way.

- 109.3.5 Job sites shall be barricaded and/or shields placed around the work area when chiseling, chipping or welding is performed in locations where other employees or the public may be exposed.
- 109.3.6 All jobs shall be left in such condition that they are not a hazard to any worker or the public. No job is complete until all material, scrap and debris has been removed.
- 109.3.7 All holes shall be protected with a cover that can support potential loading, secured in place, and marked with the words "HOLE COVER".

110.0 VEHICLE OPERATIONS

110.1 General

- 110.1.1 Employees shall possess a valid driver's license, a CDL for vehicles or combinations of vehicles and trailers weighing greater than 26,000 pounds, to operate a motor vehicle for the company.
- 110.1.2 Follow all applicable state, local, federal and Company motor vehicle regulations while operating a vehicle for the Company.
 - 110.1.2.1 Seat belts shall be worn by the driver and all passengers whenever the vehicle is moving, if the vehicle is so equipped.
 - A. Exception: When working alone, seat belts shall not be required when positioning to hook up a trailer.
 - 110.1.2.2 A helmet shall be worn when driving or riding a motorcycle on company time.
- 110.1.3 The manufacturer's operating and maintenance instruction manuals shall be followed.
- 110.1.4 Ignition systems shall be turned off and no smoking permitted while refueling any vehicle.
- 110.1.5 A 360° safety zone shall be established before the vehicle is moved to identify potential hazards on all sides of the vehicle and in the intended travel path.
- 110.1.6 Do not operate or allow the engine to idle in any garage/covered parking except when driving in or out unless the exhaust gas is vented directly to outside atmosphere or doors and windows are open.
- 110.1.7 Consider traffic, road, weather and other pertinent conditions when determining a safe operating speed while operating a vehicle.
- 110.1.8 Do not permit anyone to ride on the running boards, fenders or any part of the vehicle except the seats.
- 110.1.9 Do not ride on trailers or other equipment being transported.
- 110.1.10 Do not jump on or off vehicles in motion.
- 110.1.11 Check proper clearance of the vehicle before driving under any structures or next to energized equipment. All DOT vehicles shall have a height of vehicle sticker posted within view of the driver.
- 110.1.12 Use extreme care when using a hands-free cellular phone or the Company radio and do not write down communicated information or enter information on in-truck-terminals while driving. Use the passenger if available. Refer to Corporate Policy.
- 110.1.13 No fleet motor vehicle shall be driven through any drive-thru service window, such as at banks, fast food restaurants or convenience stores. This includes any covered drive up

ordering stations; with or without awnings or covers, and regardless of any posted clearance.

110.1.13.1 For the purposes of this directive, “fleet motor vehicle” means working vehicles, including bucket trucks, substation and communication vehicles, and other service vehicles. It does not apply to SUV’s, three quarter ton pickup trucks and smaller, or sedans.

110.1.13.2 This does not include any toll booths on interstate highways or turnpikes.

110.2 Inspections

110.2.1 Vehicles and trailers shall be inspected at the beginning of each shift and all abnormal conditions detected shall be reported on the DVIR form, given to supervision or garage mechanics and corrected.

110.2.1.1 The following checks shall be made:

A. All mounted equipment shall be determined to be secured to the vehicle.

B. All materials and tools shall be properly secured for transportation.

110.3 Parking

110.3.1 The engine shall be turned off, the transmission in park or the lowest gear, and keys removed when a vehicle is left unattended except in secured Company buildings.

110.3.1.1 Automatic transmissions without parking gear shall be left in neutral with the parking brake set.

110.3.1.2 Vehicles with manual transmissions shall set the parking brake.

110.3.1.3 All vehicles parked on an incline shall set the parking brake.

110.3.2 All vehicles that are equipped with wheel chocks are required to place wheel chocks on the rear wheels of the vehicle under the following conditions:

110.3.2.1 When the vehicle is parked and there is a risk of the truck moving due to incline or slippery conditions.

110.3.2.2 When working, including when the vehicle is set on level ground, the employee shall ensure the outriggers are in the down position, the parking brake is engaged, and wheel chocks are set before operating the lift/boom.

110.3.2.3 Trailer wheels shall be chocked when the trailer is unhooked from a vehicle. This applies to all trailers including those equipped with air brakes.

110.3.3 Trucks or trailers stopped on any public roadway shall be protected by warning lights, reflectors, and cones.

110.3.4 Vehicles shall not be parked on bridges, over culverts, curbs or in intersections if possible.

110.4 Backing

- 110.4.1 Employees must “Plan their Park” to avoid backing situations whenever possible.
- 110.4.2 When backing in necessary, it shall be performed upon arrival to avoid the necessity of backing later.
- 110.4.3 Vehicle backing shall only take place when the driver has identified and mitigated the potential hazards.
- 110.4.4 A second individual shall be used when available to provide guidance when backing.
- 110.4.5 During all vehicle backing operations, the vehicle operator shall:
 - 110.4.5.1 Keep a constant lookout during the entire time,
 - 110.4.5.2 Carefully check any blind areas,
 - 110.4.5.3 Back slowly until well clear of obstructions,
 - 110.4.5.4 Watch both sides,
 - A. Do not depend entirely on mirrors, back up cameras or sensors.

110.5 Stopping on Highway

- 110.5.1 Do not stop or drive slowly on a roadway unless it is absolutely necessary.
- 110.5.2 Use emergency flashers when moving your vehicle slowly or when stopped on the roadway.
- 110.5.3 Cones, barricades, men working signs, warning signs or warning lights shall be placed to provide adequate advance warning to traffic when stopped on the roadway.

THIS PAGE
INTENTIONALLY
LEFT BLANK

111.0 WELDING & CUTTING

111.1 General

- 111.1.1 Construction and maintenance activities shall only be performed by authorized employees.
- 111.1.2 Suitable fire extinguishing equipment shall be immediately available at all locations where welding and cutting equipment is used.
- 111.1.3 Matches or lighters shall not be carried by welders or their helpers when engaged in welding or cutting activities.
- 111.1.4 A fire watch shall be maintained whenever welding or cutting is performed in locations where combustible materials present a fire hazard. A fire check shall be made of the area after completion of welding or cutting.
- 111.1.5 Where combustible materials are present, the floor shall be swept clean for a radius of 35 feet before welding operations begin. Combustible flooring shall be kept wet or protected by fire resistant shields. Where floors have been wet down, personnel operating arc-welding or cutting equipment shall be protected from possible shock.
- 111.1.6 In dusty or gaseous spaces where there is the potential for an explosion, welding or cutting equipment shall not be used until the space is adequately ventilated.
- 111.1.7 Adequate ventilation or approved respiratory equipment shall be used while welding in confined spaces or while brazing, cutting or welding zinc, cadmium, brass, bronze, stainless steel, galvanized, or lead-coated material.
- 111.1.8 Do not weld or cut on any tank, empty container or piece of equipment until the object is free from flammable materials.
- 111.1.9 Containers of flammable materials shall be cleaned and filled with water or inert gas before welding or cutting operations begin.
- 111.1.10 Precautions shall be taken to prevent sparks or hot metal from falling onto people, equipment or flammable material below when welding or cutting in elevated positions or where floor openings or gratings cannot be closed.

THIS PAGE
INTENTIONALLY
LEFT BLANK



Field Safety Rules



Table of Contents

WORKSITE SAFETY

200 Clearances	200
201 Responsibility	200
202 System Operating Authority (SOA)	201
203 Tags	201
204 Clearance Procedure	201
205 Obtaining a Clearance	205
206 Transferring a Clearance	206
207 Surrendering a Clearance	206
208 Re-Issuing a Clearance	207
209 Special Cases	207
210 Switching Precautions	208
211 Documentation & Recordkeeping	209
300 Confined & Enclosed Spaces	300
301 General	300
302 Enclosed Space	301
303 Confined Space	301
304 Entering Large Transformers & Vessels	301
305 Opening & Guarding Manholes & Vaults	302
306 Entering Manholes & Vaults	302
400 Grounding	400
401 General	400
402 Protective Grounds	401
500 Minimum Approach Distance	500
501 Primary Area	500
600 Personal Protective Equipment (PPE)	600
601 General	600
602 Rubber Gloves & Sleeves	600
603 Climbing Belts, Safety Straps, Harness's & Lanyards	602
604 Climbers	602
605 Clothing	603
606 Life Jackets	603
700 Rescue Operations	700
701 General	700
702 Pole/Structure Rescue	700
703 Aerial Basket Rescue	700
704 Vault/Manhole Rescue	700
800 Traffic Control	800
801 Traffic Control at Work Sites	800



Table of Contents

WORKING ON ENERGIZED PARTS

900 Working Positions & Precautions	900
901 General.....	900
1000 Energized Conductor & Apparatus	1000
1001 General.....	1000
1002 Work Around Energized Apparatus	1001
1003 Working on Downed Lines & Equipment.....	1002
1004 Service Installation.....	1002
1005 Hot Work Gloving.....	1002
1006 Current & Potential Transformers	1003
1007 Capacitors	1004
1008 Regulators	1004
1009 Lightning Arrestors.....	1004
1010 Ferroresonance	1005
1011 High Voltage Maintenance (25kV and above)	1006
1012 Ground Banks for Substation Transformers	1006
1013 Substation Reactor Banks	1007
1100 Metering.....	1100
1101 General.....	1100
1102 Hazardous Animals.....	1100
1103 Safe Work Practices	1100
1200 Substation Work	1200
1201 General.....	1200
1202 Barriers.....	1200
1203 Working on Top of Substation Transformers.....	1201
1204 Circuit Breaker Maintenance & Repair	1201
1205 Testing Procedures.....	1202
1206 Batteries – UPS & Lead Acid.....	1202
1207 Unit Subs	1203
1208 Substation Ground Grid	1203
1209 Wolf Creek	1203
1210 Working at Energy Centers	1203
1300 Underground Lines & Equipment.....	1300
1301 Working on Energized Cables	1300
1302 Pulling Cables	1300
1303 Moving Energized Cables	1300
1304 Heating Metals & Compounds.....	1301
1305 Network Protectors.....	1301
1306 Grounding URD Cables.....	1302



Table of Contents

TOOLS, MATERIAL, & EQUIPMENT

1400 Hand & Power Tools.....	1400
1401 Hydraulic Tools.....	1400
1402 Compressed Air	1400
1403 Powder Actuated Tools.....	1401
1404 Grinding Wheels & Wire Brush Wheels	1401
1405 Special Work Practices for Wire Brushing Wheels.....	1402
1406 Chain Saws	1402
1407 Live Line Tools	1403
1500 Material Handling/Equipment.....	1500
1501 Hauling & Distributing Poles & Other Materials	1500
1502 Setting & Pulling Poles	1501
1503 Storing & Piling Material	1501
1504 Rigging.....	1502
1505 Slings & Ropes.....	1502
1506 Wire Rope Slings	1503
1507 Synthetic Fiber Ropes & Slings.....	1504
1508 Chain Slings	1504
1509 Hand Lines.....	1504
1510 Pole Tongs.....	1504
1600 Mounted Equipment.....	1600
1601 General.....	1600
1602 Inspection.....	1600
1603 Cranes, Derricks & Other Lifting Devices	1600
1604 Aerial Devices Including Self Propelled Man Lifts.....	1601
1700 Power Equipment Operation.....	1700
1701 Forklifts	1700
1702 Back Hoe/Trenchers/Boring Machines	1701
1703 Roll Over Protection.....	1701
1800 Testing of Protective Cover Up, Aerial Devices & Specific Equipment	1800
1801 General.....	1800



Table of Contents

OTHER

1900 Communications	1900
1901 Fiber Optics	1900
1902 Radio Frequency Transmission	1900
1903 Communications Towers	1901
1904 Site Auxiliary Power & Throw Over Units	1901
1905 Propane Tanks.....	1901
2000 Transformer Repair	2000
2001 General.....	2000
2100 Transportation	2100
2101 Equipment Maintenance	2100
2102 Hydraulics.....	2101
2103 Hydraulic Lifts & Jacks.....	2101
2104 Tag Out of Trucks & Mounted Equipment.....	2102
2105 Paint & Fiberglass.....	2102
2106 Parts Washer	2103
2107 Tires.....	2103
2108 Automotive Batteries.....	2104
2109 Generators & Inverters	2104



Worksite Safety

200.0 CLEARANCES

201.0 Responsibility

201.1 It is the responsibility of every affected person, of all operating divisions of Evergy, to familiarize themselves with and understand the Clearance Procedure and to fully comply with the various provisions outlined herein.

201.2 Authorized Person's Responsibility

201.2.1 After an Authorized Person has been granted a Clearance, he/she will perform or verify the testing and grounding as follows:

201.2.2 Tagged Clearance Limits shall be verified for his/her protection.

201.2.3 Test, and if found De-energized, apply grounds within the Clearance Limits.

201.2.4 Location of grounds shall be communicated to the SOA.

201.3 The Authorized Person shall maintain a means of communication (company radio, cell phone, etc.) with the SOA when a Clearance is in effect.

201.4 When work is to be performed on Dead equipment, which is adjacent to Live equipment, the location where it is safe to work shall be protected. Proper instructions shall be given to all Workers' as to the extent of the protection and hazards present.

201.5 At the beginning of each job and shift thereafter, the Authorized Person shall explain the current conditions of the Clearance to affected Workers'.

201.6 Workers' Responsibility

201.6.1 A worker shall not start work on circuits or equipment under a Clearance until he/she has been advised of and thoroughly understands the scope of the work and the protection limits.

201.6.2 When de-energizing lines or equipment for the protection of employees, it is the responsibility of the worker to ensure ALL switches and disconnects are tagged, and locked if possible.

201.6.3 Workers' using the Emergency Clearance are solely responsible for:

- A. The safety of all Workers' covered by the clearance.
- B. Ensuring all Workers' covered by the emergency clearance are in the clear and notified before grounds are removed.
- C. The correctness of all switching while establishing the clearance area.
- D. Application of Clearance Tags and installing grounds.
- E. Reporting switching to the normal SOA as soon as conditions permit.

201.6.4 It is the responsibility of the worker to disconnect/disable, lock open and tag automatically and remotely controlled switches that could cause the area to become energized. The means to close shall also be tagged at the point of control.

A. Examples: Control Power Transformer Fuses or De-Coupling Motors.

202.0 System Operating Authority (SOA)

202.1 No equipment on the electric system shall be operated without instruction from the SOA.

202.2 No equipment will be added or removed from the electric system without notifying the SOA.

203.0 Tags

203.1 Clearance tags are used to signify a device or point used to isolate lines or equipment for Clearance purposes and shall not be operated without permission from the System Operating Authority.

203.2 Placement and removal of Clearance tags shall be done via a 3-part communication with the SOA by a Qualified Person.

203.3 Clearance tags used must be properly filled out and attached to all isolating devices before the Clearance can be granted.

203.4 Clearance tags shall be securely attached in a visible location.

204.0 Clearance Procedure

204.1 All circuits and equipment, including electrical and mechanical equipment, are classified either as Dead or Live.

204.2 All circuits and equipment must be considered Live at all times unless fully protected in accordance with the Clearance Procedure.

204.3 A Clearance can only be granted to an Authorized Person.

204.4 Clearances shall not overlap.

204.5 Two Clearances may share a common limit. A Clearance Limit with more than one Clearance tag on it shall not be operated until all Clearances have been surrendered and all clearance tags are removed.

204.6 A Clearance may be extended to encompass a larger isolation area, but not reduced. If the isolation area needs to be reduced, the initial Clearance must be surrendered, and a new Clearance issued for the area.

204.6.1 EXCEPTION: During substation construction or maintenance work, planned reductions of clearance areas held by a single Authorized person, and where revisions are requested with at least 48 hours' notice, may be performed if

reviewed and approved by the System Operating Authority working in concurrence with the Authorized Person holding the clearance.

204.7 Tagged Clearance limits shall NOT be operated.

204.8 Multiple crews may work under a common Clearance. These crews may work either as a single crew under one Authorized Person or may be issued the same Clearance as other individual crews. See: OSHA Regulation 29 CFR 1910.269(m)(2).

204.8.1 Multiple crews work under one Authorized Person's Clearance as a single crew providing:

- A. The Authorized Person is solely responsible for the safety of all personnel within the limits of the Clearance.
- B. All crews working under a single Authorized Person must belong to the same craft.
- C. All crews working under a single Authorized Person must be employed by the same company unless approved by a Manager or above.

204.8.2 Additional crews may be issued an existing Clearance held by another crew.

- A. SOA will notify all Authorized Persons that are issued the same Clearance that other Authorized Persons are associated with the Clearance.
- B. Crews that are issued the Clearance individually may be of the same or different craft and/or company.

204.9 Field Clearance:

204.9.1 A Workers' Field Clearance can only be used on distribution circuits and equipment rated below 69kV, outside substation fences. There is no advance notice to the SOA for scheduling. A Field Clearance is allowed to be used to conduct unplanned routine and maintenance work with up to 2 Clearance Limits (not including mainline), or emergent work (including mainline) with no maximum number of Clearance Limits.

204.9.2 The SOA is maintained by the DSO. The worker in charge shall always inform SOA as to when work begins, nature of the work, customers affected and the expected duration of the work prior to the work beginning. Ground locations must be recorded and communicated to the new clearance owner.

204.9.3 A Clearance number is generated by the SOA. The Authorized Person shall write "Field" on the Clearance tag. The use of the Clearance number for a Field Clearance is for transferring and if the Authorized Person will complete the work, it is not required that the number be written on the tag.

- 204.9.4 The Field Clearance is documented in the Outage Management System by the SOA.
- 204.9.5 A Field Clearance can be transferred to the SOA or from one Authorized Person to another Authorized Person.
- 204.9.6 The transfer must be done over a recorded line with the SOA and both Authorized People on the line with the Clearance Limits and ground locations verified.

205.0 Obtaining a Clearance

- 205.1 A “request for Clearance” may be made by or for any Authorized Person and shall be submitted to the SOA as far in advance as practical of the time when the Clearance will be needed. Such written requests shall specify the following:
 - 205.1.1 The name of the Authorized Person.
 - 205.1.2 The circuit or equipment and limits of the Clearance between which work is to be done.
 - 205.1.3 The nature and location of the work to be done and other pertinent information.
 - 205.1.4 The time the Clearance is wanted and its approximate duration.
 - 205.1.5 The location where grounds will be placed, if known.
 - 205.1.6 Contact information of person making the request.
- 205.2 The SOA shall prepare for the Clearance as follows:
 - 205.2.1 Carefully check to make sure that NO condition exists which will prevent issuing of the proposed Clearance. If such a condition exists, notify the person who originated the request and/or the Authorized Person.
 - 205.2.2 The SOA shall have the section of the circuit or equipment isolated from all normal sources.
 - A. When de-energizing an electrical circuit or equipment for a Clearance, there shall be a visual break to isolate the circuit or equipment from normal source of supply unless otherwise agreed upon between the field and the SOA (i.e. Network Protectors).
 - 205.2.3 The SOA shall have all Clearance Limits properly tagged.
 - 205.2.4 Where instruments are available, the SOA shall have the instruments read as a check on the isolation of the circuit or equipment against electrical energy.
- 205.3 After the specified circuit or equipment has been removed from service and its Clearance Limits have all been tagged, the SOA shall grant the Clearance to the Authorized Person.

The SOA shall specify the Clearance number, equipment, circuit, or section isolated, and identify the Clearance Limits on which tags have been placed.

- 205.4 The SOA may request an interconnected company or a customer to place Clearance Limit in the proper position to ensure the required isolation and to apply an approved tag or sign.

206.0 Transferring A Clearance

- 206.1 A Clearance may be transferred from one Authorized Person to another Authorized Person or the SOA. All transfers between Authorized Persons must be done through the SOA on a recorded line with both Authorized Persons present. The Authorized Person transferring the Clearance is responsible for communicating the state of the work area, including the placement of grounds and whether the lines could be used in an emergency.

- 206.1.1 If the Authorized Person with a Clearance is absent from work, that Workers' supervisor, in conjunction with the SOA, may transfer the Clearance to another Authorized Person or SOA.

- 206.2 Emergency Clearances CANNOT be transferred to the SOA. If there is need for this once safe in the field, an Emergency Clearance can be converted to a Field or Operators Clearance and then transferred.

207.0 Surrendering a Clearance

- 207.1 Upon completion of the work, the Authorized Person shall advise everyone working under his/her Clearance that they shall thereafter consider the circuit or equipment Live. He/she shall ensure all protection that was applied under the Clearance has been removed and that the circuit or equipment is ready to be made Live as far as he/she is concerned. He/she shall surrender the Clearance to the SOA. When surrendering the Clearance, the Authorized Person shall:

- 207.1.1 State his/her name, type of Clearance, and Clearance number.
- 207.1.2 Confirm that everyone working under his/her Clearance is in the clear.
- 207.1.3 Confirm that all grounds applied under the Clearance have been removed.
- 207.1.4 Clearly explain ALL changes made which affect operation, such as reduced capacity, increased load or new circuit configuration. Reference shall be made to appropriate circuit diagrams applying to the change.

- 207.2 After the Authorized Person has surrendered his/her Clearance, the SOA shall:

- 207.2.1 Check his/her diagram and records to see that any changes made do not affect any other outstanding Clearance. If not, the circuit or equipment shall be made ready for service as required.

- 207.3 If the Authorized Person with a Clearance is absent from work, that Workers' supervisor, in conjunction with the SOA, may surrender the Clearance.

- 207.4 After work is completed under an Emergency Clearance, the Clearance shall be surrendered in accordance with the Clearance procedure before being energized. Complete records of all operations performed in connection with the Emergency Clearance shall be sent to the recognized SOA as soon as possible after completion of the work.
- 208.0 Re-Issuing a Clearance
- 208.1.1 A Clearance may be re-issued after it has been surrendered when problems are identified during the restore switching that will require the Clearance to be re-issued to correct.
- A. A Clearance is considered complete when all the restore switching associated with the Clearance is completed and can no longer be re-issued.
- 208.2 SOA should request a peer review of the Clearance document to ensure all Authorized Persons have surrendered their Clearance before restoration switching begins when practical. If a peer review is impractical, the SOA should pause and reexamine the document before issuing any restoration order.
- 208.3 Grounds shall be applied by the worker after the line or apparatus has been tested for voltage and prior to working on the de-energized line or apparatus.
- 209.0 Special Cases
- 209.1 In general, all protection required for a given job shall be done under one Clearance. In special cases, when operating conditions necessitate that part of the circuit or equipment covered be returned to service before the completion of the entire job, the protection may be accomplished by two Clearances being granted to one Authorized Person. All persons so protected shall be specifically advised of the conditions at all times.
- 209.2 Since there are different levels of SOA on our system to cover all the various classes of circuits and equipment, TSO will be permitted to take control from the DSO during emergencies (i.e. lack of communications or specific complexities of the system dictate).
- 209.3 The SOA may grant switching and tagging protection on circuits or equipment controlled by Evergy to a recognized dispatching authority of other companies once the provisions outlined in the Obtaining a Clearance Section above have been met.
- 209.4 If it is necessary to deviate from the rules of the Clearance Procedure, the Department Head in charge of the work or his/her designated representative shall be advised at once. He/she and the SOA Manager or his/her designated representative shall decide what emergency action shall be taken.
- 209.4.1 The type of equipment used on certain portions of the system may make it impossible to comply completely with all of these rules. In such cases, adequate protection of Workers' working on that equipment shall be made

by mutual agreement of the Authorized Person, Supervisor, SOA and a Representative of the Safety Department.

210.0 Switching Precautions

- 210.1 No switching shall be performed unless ordered by the SOA having jurisdiction unless an emergency exists. This includes opening and closing jumpers.
- 210.2 Know the equipment before you try to operate it. Contact the SOA for further instructions when in doubt concerning applicable procedures.
- 210.3 Never operate a switch or any piece of apparatus that is tagged with a Clearance or Caution tag without permission from the SOA.
 - 210.3.1 Always contact the SOA when dealing with equipment tagged with a tag of unknown origin.
 - 210.3.2 Every effort shall be made to determine the worker who placed the tag and the reason for placement before removal and proceeding with switching.
 - 210.3.3 Never install or remove a device or connection that would invalidate an issued clearance.
- 210.4 Switching orders shall be repeated back by the worker to the SOA at the time the switching orders are issued and upon completion of the switching.
- 210.5 Before operating switches, SOA and the worker shall discuss the purpose of the switching.
 - 210.5.1 The worker shall review the switching to ensure it will achieve the desired purpose.
 - 210.5.2 The worker shall ensure he is at the right switch before operating.
 - 210.5.3 The worker shall ensure switches are in the desired position.
 - 210.5.4 The worker shall inspect for broken insulators, inter phase rods, linkage and other abnormal conditions. If any abnormal condition is found or the switch blade and/or interrupter is not properly closed, the switch shall not be opened without consulting the SOA.
 - 210.5.5 Only the worker shall be in the area when energizing or de-energizing apparatus and equipment.
- 210.6 Position all trucks, tools and equipment a safe distance away from apparatus and equipment to be energized.
- 210.7 Workers' shall not be in a vault or manhole to complete switching to energize cables and equipment at 600 volts or above in that vault nor shall other Workers' be in any other vault or manhole that the cable being energized passes through.

- 210.8 All personnel shall remain a safe distance away for five (5) minutes after energizing regulators, reclosers, capacitors and substation transformers.
- 210.9 When de-energizing an electrical circuit or apparatus for clearance, there shall be a visual break to isolate the circuit or apparatus from normal source of supply unless it is identified as an approved switching device.
- 210.10 All switches shall be checked for proper position (fully open or fully closed) after switching operations are completed.
- 210.11 All switches shall be secured with a Company-approved lock where the provision exists.
- 210.12 Fuse pullers shall be used for removing or replacing low voltage cartridge fuses.
- 210.13 Phasing is required anytime work was performed on OH or UG that may have changed the system configuration. Exceptions: Gang operated padmount switchgear (PME) or OH GOAB.
- 210.14 Worker shall verify interrupting devices open via indicator (the mechanical indication semaphore, etc) and then confirm via amp check to verify there is no current flow through the device on all phases before opening disconnects from an energized source for interrupting devices that do not provide visual opens.
- 211.0 Documentation and Recordkeeping
- 211.1 A complete record shall be made of all transactions relating to a Clearance

300.0 **CONFINED AND ENCLOSED SPACES**

301.0 **General**

301.1 Employees shall be trained on the hazards involved in entering Enclosed and Confined Spaces.

301.2 Employees shall be trained annually on manhole rescue techniques.

301.3 External rescue equipment shall be available at the job site and set up for immediate use by trained employees.

301.3.1 A rescue harness shall be worn by or rescue wristlets shall be available for any employee entering Enclosed and Confined Spaces.

301.4 An attendant with first aid and CPR training shall be available outside the space in the immediate vicinity to give emergency assistance.

301.4.1 This does not prevent an attendant from occasionally entering an enclosed space to provide help for brief periods of time.

301.5 All tools and materials shall be handed down or lowered by hand lines or winch lines.

301.6 Test for hazardous atmosphere prior to entry into the space with a Company approved test device and document your readings on the entry form. Continue to monitor the atmosphere as long as employee are within the space.

301.6.1 Company approved test devices shall be bump tested before use and calibrated monthly.

301.7 Test for hazardous atmosphere throughout the entire portion of the space that workers will occupy during the entry. Do not enter if any of the following conditions exist.

301.7.1 Flammable gasses, vapor or mist in excess of 10% of its lower flammable limit,

301.7.2 Oxygen concentrations below 19.5% or above 23.5%,

301.7.3 Atmospheric concentrations of carbon monoxide and carbon dioxide,

301.7.4 Any other atmospheric condition that is immediately dangerous.

301.8 If a hazardous atmosphere is detected, use forced air ventilation to remove the hazard.

301.8.1 Forced air ventilation shall be continued until all employees leave the space.

301.9 If hazards arise within any space, employees shall exit the space immediately. The space shall then be re-evaluated and a decision made whether it should be reclassified.

301.10 Determine if an engulfment hazard exists.

302.0 Enclosed Space

302.1 Underground enclosed spaces refer to manholes and vaults that contain operating transmission and distribution equipment,

302.1.1 If personnel entering such spaces are qualified employees performing routine work.

302.1.2 And if the **only** potential hazards in the manholes and vaults are electrical.

302.2 Confined Space requirements in the following section must be followed if:

302.2.1 The personnel are not qualified,

302.2.2 The work is not routine,

302.2.3 Other potential hazards continue to exist (other utilities, such as gas, steam, water).

303.0 Confined Space

303.1 Any space large enough and so configured that an employee can enter and perform assigned work that has a limited means of entry or exit and is not designed for continuous employee occupancy.

303.1.1 Confined spaces include, but are not limited to, storage tanks, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, manholes and open top spaces more than four feet in depth such as pits, tubs, vaults and vessels.

303.2 Permit-Required Confined Space – a confined space containing one or more of the following characteristics:

303.2.1 Contains or has potential to contain a hazardous atmosphere, or

303.2.2 Contains a material that has the potential for engulfing an entrant, or

303.2.3 Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross-section.

303.2.4 Contains any other recognized serious safety or health hazard.

304.0 Entering Large Transformers and Vessels

304.1 Before entering power transformers or circuit breaker tanks:

304.1.1 All tools and materials taken into a space shall be inventoried when entering and exiting.

304.1.2 Hand tools shall be tethered to the worker.

304.1.3 Dry compressed air of respirable quality (Grade D or better) shall be supplied above the oil level.

A. Oxygen shall not be used.

B. Oil driven compressors shall not be used without filtration to remove any contaminants (particulate, oil mist, water vapor) and a monitoring system to assure an air supply of respirable quality.

304.2 Forced air ventilation shall be used if PCB level is above 500 ppm.

304.3 When electrically operated tools are used, a GFCI shall be used.

304.4 Lights shall be shielded.

304.5 When it is necessary to remove a manhole cover or inspection plate from a transformer, any pressure or vacuum shall be relieved prior to removing any stud or bolt.

304.6 When pulling a vacuum on a transformer, no one shall be on top of the transformer.

304.7 Vacuum lines and oil hoses attached to a transformer under vacuum shall be mechanically supported so as not to place any strain on the transformer tank.

304.8 A transformer under vacuum shall have all bushings grounded.

304.8.1 Grounds will have sufficient slack so the bushings may move as needed.

305.0 Opening and Guarding Manholes and Vaults

305.1 Whenever a manhole or vault cover is to be removed:

305.1.1 An open flame shall never be used to melt ice around a manhole or vault cover.

305.2 Manhole, vault, and service pull box covers shall be removed and installed with tools designed for the purpose.

306.0 Entering Manholes and Vaults

306.1 Guard all street openings, such as a manhole or a vault, with a barrier or temporary cover before entering.

306.2 Ladders / steps shall be used when entering or exiting a manhole or vault.

THIS PAGE
INTENTIONALLY
LEFT BLANK

400.0 GROUNDING

401.0 General

401.1 Grounds shall be applied by the worker after a clearance is issued; the line or apparatus has been tested for voltage with a voltage detector and prior to working on the de-energized line or apparatus using de-energized work methods.

401.1.1 Grounds are not required for clearances to perform the following:

- A. Maintenance on roll out circuit breakers, switches or other roll out type equipment.
- B. Relay testing,
- C. Adding gas to breakers,
- D. Calibration of alarms,
- E. Minor mechanism cabinet adjustments,
- F. Repair of air and hydraulic systems on breakers.

401.1.2 Grounds shall be installed after the clearance has been received and shall be kept in place while test equipment is being connected or as long as necessary to protect the worker from accidental energization and/or static charge hazards. The equipment or apparatus being tested may be disconnected and/or isolated prior to the following work as long as the test equipment being used as the potential source of power is grounded (See System Operating Manual):

- A. Equipment Testing,
- B. Breaker replacement,
- C. Pulling UG cable out of a duct.
- D. Underground fault locating with electric fault locating equipment

401.1.3 Grounds are automatically applied on some switches when the switch is operated. In these instances, grounds are installed prior to receiving the clearance.

401.2 The worker with the clearance shall ensure that all workers covered by the clearance are in the clear and notified before grounds are removed.

401.3 Grounds shall be removed before a clearance is released.

401.3.1 This does not apply to switches that install or remove a ground automatically when the switch is operated.

- 401.3.2 Grounds may be left on when a clearance is transferred to another authorized employee.
- 401.4 Grounds shall be applied by the worker after the line or apparatus has been tested for voltage and prior to working on the de-energized line or apparatus.
- 402.0 Protective Grounds
- 402.1 All grounding equipment shall be sized to successfully handle the fault current available.
 - 402.1.1 Conductors
 - 402.1.2 Clamps
 - 402.1.3 Elbows
 - 402.1.4 Bushings
- 402.2 The ground connection shall be solidly made to a good permanent ground if available.
 - 402.2.1 Station grounds,
 - 402.2.2 Multi-grounded system neutral conductors.
- 402.3 Where permanent grounds are not available, a temporary ground rod device shall be used.
- 402.4 All available grounds should be interconnected to obtain maximum protection.
- 402.5 Minimum ground size is:
 - 402.5.1 1/0 AWG copper for all overhead and underground lines below 69kV.
 - 402.5.2 4/0 AWG copper shall be used on transmission lines 69kV and above.
 - 402.5.3 4/0 AWG copper shall be used on all substation and switching station equipment.
 - A. Substation and switching station equipment requiring larger or smaller ground size will be posted on the entrance gate.
 - B. Both primary and secondary of transformers shall be grounded.
- 402.6 Protective grounds shall be applied as close as possible to the point where work is being performed without actually interfering with the work.
 - 402.6.1 Work shall not be performed more than two miles from protective grounds.
 - A. These grounds shall remain in place until the conductor is completely dead ended or removed.
 - 402.6.2 A high visibility flag shall be attached to all grounds installed in overhead applications.
- 402.7 There shall be no open points between the work location and protective grounds, including switches, jumpers, fuses, conductors, etc.

- 402.7.1 EXCEPTION: Switches, jumpers, etc. may be open or opened so long as they are inside a grounded clearance area and no other source of energization is available.
- A. Sources of energization include, but not limited to, inductance, back feed, generators, station power feeds and capacitance.
- 402.8 Test for voltage with an approved voltage indicator before applying grounds. Fuzzing is not an acceptable method
- 402.9 Install and remove grounds with a hot-stick.
- 402.9.1 EXCEPTION: When it is not practicable to use a hot stick, grounds may be applied by hand using proper PPE after voltage checking and touch grounding using a hot-stick on overhead and underground secondary below 600 volts.
- 402.9.2 Does not include grounding vehicles.
- 402.10 The first connection shall always be made to the permanent ground when installing protective grounds.
- 402.11 The connection to the permanent ground shall be the last removed when removing protective grounds.
- 402.12 Conductors being installed or removed shall be grounded by use of a traveling ground when pulling wire on or near structures with energized conductors.
- 402.12.1 The trucks and/or trailer hitched to or mounted with puller and tensioner equipment and/or a wire trailer shall be grounded with a minimum 1/0 AWG copper using the best available ground.
- 402.12.2 If grounding each piece of equipment separately, use a common ground. If there is no pole ground or system neutral, driven grounds must be used and bonded together.
- 402.13 Truck Grounding during operation of mechanical equipment such as derricks, mobile hoists, cranes, aerial lifts or similar devices and equipment that could become energized on circuits above 600 volts, the operation shall comply with at least one of the following paragraphs.
- 402.13.1 The energized lines exposed to contact shall be covered with insulating protective material that will withstand the type of contact that might be made during the operation.
- 402.13.2 The equipment shall be insulated for the voltage involved. The equipment shall be positioned that its uninsulated portions cannot approach the lines or equipment any closer than the minimum approach distances.

- 402.13.3 Each employee shall be protected from hazards that might arise from equipment contact with the energized lines. The measures used shall ensure that employees will not be exposed to hazardous differences in potential. The measures used shall include all of the following techniques
- A. Using the best available ground to minimize the time the lines remain energized,
 - B. Bonding equipment together to minimize potential differences,
 - C. Providing ground mats to extend areas of equipotential, and
 - D. Employing insulating protective equipment or barricades to guard against any remaining hazardous potential differences.
 - E. A minimum of 1/0 AWG copper ground shall be applied to any vehicle before it is used or maneuvered into this area.
 - F. Screw grounds when utilized shall be installed as far into the earth as possible, minimum of 18 inches
- 402.14 One set of grounds at the work structure is sufficient if conductors are not to be opened.
- 402.15 A ground shall be applied to each side of the break if a conductor or static wire is to be opened.
- 402.16 Bond and ground both sides of the opening when splicing two conductors or static wires together.
- 402.17 Single point grounding methods are acceptable for distribution voltages up to and including 34.5 kV only where there is a static or system neutral available.
- 402.17.1 The static or system neutral must originate from and be continuous from the substation transformer serving the circuit to be grounded.
 - 402.17.2 The serving substation transformer must be connected on the low side or have a grounding bank installed for a delta connected low side.
 - A. All other distribution circuits must be grounded using equipotential grounding methods.
 - 402.17.3 The worker in charge may use equipotential grounding on all distribution circuits if desired.
- 402.18 Equipotential grounding shall be the method used for all grounding on voltages 69 kV and above.
- 402.18.1 Equipotential grounding will not be used when it presents a greater hazard by using it than the hazard present if not used.

500.0 MINIMUM APPROACH DISTANCE

501.0 Primary Area

501.1 Only qualified employees, wearing the appropriate PPE, may enter the primary area.

501.2 The primary area is an area surrounding exposed conductors and apparatus, energized above 600 volts, in all directions with a radius the length of the Minimum Approach Distance.

501.2.1 This area may be extended by any conductive object such as tools, equipment, vehicles and construction materials.

501.2.2 Use of approved cover up does not change the primary area.

501.3 Consider yourself in the primary area as defined above if:

501.3.1 You can reach into the primary area,

501.3.2 You can slip, or drop anything into the primary area,

501.3.3 Your reach is extended into the primary area by any conductive object such as tools, equipment, vehicles and construction materials.

AC LIVE-LINE WORK MINIMUM APPROACH DISTANCE		
Nominal Voltage Phase to Phase	Distance Phase to Ground Exposure (ft-in)	Distance Phase to Phase Exposure (ft-in)
50 V to 300 V	Avoid Contact	Avoid Contact
301 V to 750 V	1' 2"	1' 2"
751 V to 15 kV	2' 2"	2' 3"
15.1 kV to 36 kV	2' 7"	3'
36.1 kV to 72.5 kV	3' 4"	4'
72.6 kV to 121.0 kV	3' 8"	4' 3"
121.1 kV to 145 kV	4' 4"	4' 11"
145.1 kV to 242 kV	6' 8"	7' 6"
242.1 kV to 362 kV	8' 6"	12' 6"

THIS PAGE
INTENTIONALLY
LEFT BLANK

600.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

601.0 General

601.1 All PPE shall be inspected by the worker each time before use.

601.1.1 Rubber gloves shall be air tested and visually inspected before the first use of the day.

601.2 All PPE shall be kept clean.

601.3 Workers shall put on the required PPE for the job at hand before entering the job area.

601.3.1 Consult your foreman / lead person or supervisor when in doubt regarding the minimum PPE to be used.

601.4 Rubber goods and hot sticks shall be carried in a space or container provided for that purpose.

601.4.1 Store rubber goods in a cool, dark, ventilated area.

601.5 Do not fold rubber goods when carried on trucks or when stored.

601.5.1 Only Company approved protective cover up shall be used for protection.

601.5.2 Protective cover must be rated for phase to phase voltage.

601.6 Do not drag ropes or wire across protective cover up.

601.7 Do not leave protective cover up on lines or apparatus except in cases where protection to others is essential.

601.7.1 Use rigid line hose when it must be left for extended periods of time.

601.8 Do not drop or throw protective cover up to or from poles, towers or structures.

602.0 Rubber Gloves and Sleeves

602.1 When working in the minimum approach distance (MAD) from an aerial device, the appropriate class rubber gloves and sleeves shall be worn.

602.1.1 This includes installing or removing protective cover.

602.2 When working in the minimum approach distance (MAD) from a pole, the appropriate class rubber gloves shall be worn.

602.3 Working on energized conductors and apparatus is permitted only where it can be done without introducing an abnormal hazard and only by trained workers.

602.3.1 Using rubber gloves and sleeves is not allowed when working on energized buss inside a substation where 3-phase tripping and blocking (ie. overcurrent, differentials, instantaneous, etc.) is not available.

602.4 1 kv (Class 0) rubber gloves with protectors shall be worn when working energized circuits from 50 volts up to 600 volts.

- 602.4.1 When connecting, testing or inspecting low voltage apparatus where clearances are close or short circuit hazards exist, such as installing or removing meters, opening or closing energized meter enclosures, and when working inside of an open energized meter enclosure.
- 602.4.2 Does not apply to trained workers when working with de-energized secondary without presence of grounds, when all the following conditions have been met:
 - A. There is not a possibility of contact with another energized source.
 - B. Induced voltage is not present.
 - C. Potential for back feed does not exist.
- 602.5 17 kV (Class 2) rubber gloves with protectors shall be worn, regardless of the primary voltage level, when:
 - 602.5.1 Poles are raised or lowered through energized conductors,
 - 602.5.2 Handling energized underground primary from the earth. See Underground Lines & Equipment.
 - 602.5.3 Stringing wire or pulling cable that may contact energized conductors,
 - 602.5.4 When changing the physical configuration of any equipment or enclosure when it may become energized by internal failure or physical damage until such time as the worker proves the case ground is intact by visual inspection.
 - A. Opening doors on pad mounted equipment or breaker doors.
 - 602.5.5 Performing switching,
 - A. In substations.
 - B. Operating gang-operated switches (GOAB) from the ground or pole.
 - C. When switching within the UG/Network system.
 - 602.5.6 Troubleshooting, testing or inspecting transformers, capacitors, regulators, reclosers, sectionalizes and all other switch gear until such time as the individual proves the case ground is intact by visual inspection.
 - 602.5.7 26.5 kV (Class 3) rubber gloves can be substituted for the 17 kV (Class 2) gloves if available.
- 602.6 17 kV (Class 2) rubber gloves with protectors shall be worn when working energized circuits from 600 volts up to 15 kV.
- 602.7 26.5 kV (Class 3) rubber gloves and sleeves shall be worn when working energized circuits from 15 kV up to 25 kV.

602.7.1 When tightening hardware on a 34 kV Wye circuit.

603.0 Climbing Belts, Safety Straps, Harness's and Lanyards

603.1 Company provided fall restriction equipment shall be used when, ascending, descending, changing positions and when in the working position on poles, towers and other structures.

603.2 Safety straps, fall restriction device or climbing belts shall not be altered.

603.3 Do not snap safety straps together.

603.4 Only locking type snap hooks or carabineers shall be used with lanyards, safety straps and fall restriction device.

603.5 Look to see that the safety strap snap or fall restriction device is fastened in the "D" ring on the climbing belt before leaning back.

603.5.1 Only Company approved tool supports shall be used.

603.6 Climbing belts and safety straps shall not be used as fall protection, slings, boatswain's chairs or for any purpose except for which they are intended.

603.7 A Company issued full body harness and shock-absorbing lanyard or retractable lanyard, attached to the designated anchorage point shall be worn at all times while in an aerial device, including scissor lifts, man lifts and order pickers. A retractable lanyard is the preferred lanyard to use on scissor lifts and man lifts.

603.7.1 All full body harnesses shall be equipped with suspension trauma relief rescue strap.

603.8 Safety straps shall be placed over an obstruction and around a safe substantial part of the pole, tower or structure.

604.0 Climbers

604.1 Climber gaffs shall not be less than 1 1/4" in length when measured on the underside.

604.2 Climber gaffs shall be kept sharp, but not to a needle point.

604.2.1 All sharpening is to be done from the underside.

A. The top straight edge of a gaff shall not be filed.

604.2.2 Be sure to check the instructions issued by the manufactures of the gaff you are using since there may be differences in the exact procedures to be followed.

604.3 Gaffs shall be covered with gaff protectors when not in use.

605.0 Clothing

605.1 Employees exposed to or performing work on energized lines or apparatus shall wear company approved Flame Retardant clothing and any additional PPE rated for the hazard

exposure level. **Please reference the Evergy Arc-Rated Body Protection Chart. Substation only.**

605.1.1 When required the company approved Flame Retardant Shirt shall be worn with full length sleeves, down and secured around the wrist and shirt tails tucked in.

A. EXCEPTIONS:

- i Working from the ground with an extendo stick.
- ii Working on the ground setting poles in energized conductors.
- iii Relamping multiple street light circuits.
- iv Switching line GOABs from the ground.

605.1.2 The Company Issued Arc Rated rain coat and high visibility vest may be worn over FR clothing.

605.1.3 If needed during cold weather, 100% cotton, natural fiber, or FR rated undergarments shall be worn under FR outerwear for added warmth.

605.1.4 When working from wood poles, towers or steel structures the employee may wear a Company approved long sleeve shirt if there are no energized conductors or apparatus on the structure.

605.2 When entering any Evergy substation, a minimum of 100% natural fiber clothing, hard hat, safety glasses and rugged footwear is required. Beyond that, the job and/or location may dictate the use of additional PPE.

605.2.1 EXCEPTION: Emergency response personnel when escorted by a qualified person.

606.0 Life Jackets

606.1 A U.S. Coast Guard approved personal flotation device shall be provided for each person that climbs and shall be worn while on a pole, tower or associated structure if it is over water or located such that if a person fell, they could land in water of sufficient depth to drown.

606.2 All boats and boat equipment shall comply with U.S. Coast Guard standards and no one shall operate a watercraft without first having general knowledge of its use, and having knowledge of all Federal, State and local boating requirements.

606.3 Coast Guard approved ring buoys with at least 90 feet of line shall be readily available for emergency rescue on a working platform or barge.

606.4 Personal flotation devices shall be maintained in a safe condition.

- 606.5 When necessary to cross or work upon bodies of water where wading is undesirable, impracticable or impossible, substantial boats, not canoes or rafts shall be used. Employees engaged in such work shall wear Cost Guard-approved personal flotation devices.

700.0 RESCUE OPERATIONS

701.0 General

701.1 Rescue techniques shall be reviewed and practiced at least once a year.

701.2 The emergency button on company radios can be used for emergency medical assistance in life threatening situations, in addition to calling 911.

702.0 Pole/Structure Rescue

702.1 A hand line of one-half inch minimum diameter shall be used for rescue purposes whenever an employee climbs poles, towers or structures.

702.2 The rescuer shall exercise extreme caution to avoid becoming a victim. The circuit shall be de-energized to remove the victim. If the circuit cannot be de-energized immediately, the rescuer shall use adequate protection for his or her own safety. 17 kV (class 2) rubber gloves shall be worn from the ground up until the rescue is complete.

702.3 The rescuer shall proceed to lower the victim to the ground as soon as possible and begin first aid procedures.

703.0 Aerial Basket Rescue

703.1 The rescuer shall exercise extreme caution to avoid becoming a victim. The circuit shall be de-energized to remove the victim. If the circuit cannot be de-energized immediately, the rescuer shall use adequate protection for his or her own safety. 17 kV (class 2) rubber gloves shall be worn during the rescue operation.

703.2 The rescuer shall lower the victim to the ground as soon as possible using the lower controls on the equipment and begin first aid procedures.

704.0 Vault/Manhole Rescue

704.1 The rescuer shall exercise extreme caution to avoid becoming a victim. The circuit shall be de-energized to remove the victim. If the circuit cannot be de-energized immediately, the rescuer shall use adequate protection for his or her own safety.

704.2 The rescuer shall raise the victim to the surface as quickly as possible to begin first aid procedures.

THIS PAGE
INTENTIONALLY
LEFT BLANK

800.0 TRAFFIC CONTROL

801.0 Traffic Control at Work Sites

801.1 Minimum Requirements:

- 801.1.1 The worker in charge shall assess the traffic and roadway conditions and select the appropriate safety measures by exercising good judgment and considering:
 - A. Amount of traffic flow.
 - B. Speed of traffic flow.
 - C. Terrain.
 - D. Road conditions.
 - E. Visibility.
- 801.1.2 Additional precautions such as additional light, flares, and/or additional signs should be utilized at night.
- 801.1.3 Other devices, including flaggers, may be added to supplement the minimum requirements and device spacing may be adjusted to provide additional reaction time for motorists.
- 801.1.4 The use of law enforcement personnel to close a roadway is a substitute for all minimum requirements for emergencies only. For scheduled work, road closures must be approved by KDOT/MDOT.

801.2 Flaggers:

- 801.2.1 Shall wear Company issued high-visibility safety apparel and hard hat cover.
- 801.2.2 Shall use either:
 - A. A Stop/Slow Paddle
 - B. A Red Flag (Emergency Only)
- 801.2.3 Shall always face traffic,
- 801.2.4 Shall stand alone,
- 801.2.5 Shall not stand near equipment or vehicles,
- 801.2.6 Shall stand at the right edge of the roadway,
- 801.2.7 Shall be located as indicated by the following tables and figures.
- 801.2.8 Shall not leave their post unless properly replaced,
- 801.2.9 Shall be trained.

801.3 Signs:

- 801.3.1 Shall be 4' wide for highway use,
- 801.3.2 Shall be located at right edge of the roadway,
- 801.3.3 Shall be spaced according to the following tables and figures.
- 801.3.4 Shall be made to remain in an upright position,
- 801.3.5 Shall be reflective or illuminated for night use.

801.4 Cones:

- 801.4.1 Shall be at least 28" high and equipped with reflective material.
- 801.4.2 Shall be made to remain upright,
- 801.4.3 Spacing shall not exceed a distance in feet apart equal to half the speed limit when used for taper channelization.

801.5 Truck Warning Lights:

- 801.5.1 Shall be used during the day and at night.

MATRIX FOR PROPER TRAFFIC CONTROL

Work Site Location	Truck Lights	Reflective Cones (min. 4)	Utility Work Ahead Sign	Flagger Ahead Sign	Lane Closed Ahead Sign	Yield to Oncoming Traffic Sign	Yield Ahead Sign	End Road Work Sign	Stop/Slow Sign or Red Flag	1 or 2 Flaggers	Co. Issued Vest	Lights for Flagger @ Night	Permit or Standing Permit	Arrow Board
1 Lane of 2 Lane State and Federal Highways	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Shoulder of State and Federal Highways	✓	✓	✓					✓			✓		✓	
Work Beyond the Shoulder on State & Federal Hwys	✓	✓	✓					✓			✓		✓	
Work Beyond the Shoulder on all Other Roads & Hwys	✓	✓									✓			
1 Lane of 4 Lane State and Federal Highways	✓	✓	✓		✓						✓		✓	✓
1 Lane of 2 Lane Residential Streets														
-Be there more than 1 hour	✓	✓	✓								✓			
-Be there less than 1 hour	✓	✓									✓			
1 Lane of 2 Lane Urban Streets														
-Be there more than 1 hour	✓	✓	✓								✓			
-Be there less than 1 hour	✓	✓									✓			
1 Lane of Urban 4 Lane														
-Be there more than 1 hour	✓	✓	✓								✓			✓
-Be there less than 1 hour	✓	✓									✓			
1 Lane of 2 Lane County Road High Traffic														
-Be there more than 1 hour	✓	✓	✓	✓	✓				✓	✓	✓	✓		
-Be there less than 1 hour	✓	✓									✓			
1 Lane of 2 Lane County Road Low Traffic														
-Be there more than 1 hour	✓	✓	✓								✓			
-Be there less than 1 hour	✓	✓									✓			
1 Lane of 2 Lane Intersection														
-Be there more than 1 hour	✓	✓	✓								✓			
-Be there less than 1 hour	✓	✓									✓			
1 Lane of 4 Lane intersection														
-Be there more than 1 hour	✓	✓	✓								✓			
-Be there less than 1 hour	✓	✓									✓			

NOTES: Additional precautions such as additional lights, flares, and/or additional signs should be utilized at night.
Signs shall be of the 4' X 4' variety on all major State, Federal and County highways.
Environmental conditions such as slippery road conditions and poor visibility should involve taking extra precautions.
When possible do not use the street as the work location.
Warning signs shall be displayed from both directions when appropriate.
Requirements as presented should be considered the minimum.

Guidelines for Location of Flagger Station

POSTED SPEED (mph)	DISTANCE FROM WORK SPACE
20	115 feet
25	155 feet
30	200 feet
35	250 feet
40	305 feet
45	360 feet
50	425 feet
55	495 feet
60	570 feet
65	645 feet
70	730 feet
75	820 feet

Suggested Advance Warning Sign Spacing

Roadway Type	Distance A	Distance B	Distance C
Urban (40 mph or less)	100 feet	100 feet	100 feet
Urban (45 mph or greater)	350 feet	350 feet	350 feet
Rural (60 mph or greater) (55 mph or less)	750 feet 500 feet	750 feet 500 feet	750 feet 500 feet
Expressway / Freeway	1000 feet	1500 feet	2640 feet

Distance from End of Taper to Vehicle

POSTED SPEED (mph)	2 S
20	40 feet
25	50 feet
30	60 feet
35	70 feet
40	80 feet
45	90 feet
50	100 feet
55	110 feet
60	120 feet
65	130 feet
70	140 feet

Formulas for L

Speed	L	Where: L = Length of taper in feet W = Lateral shift of traffic due to closure of lane S = Posted speed limit
40mph or less	$L = \frac{WS^2}{60}$	
45 mph or more	$L = WS$	

The following figures are from the *Manual on Uniform Traffic Control Devices -2009 Edition*.

Figure 6H-22. Right-Hand Lane Closure on the Far Side of an Intersection (TA-22)

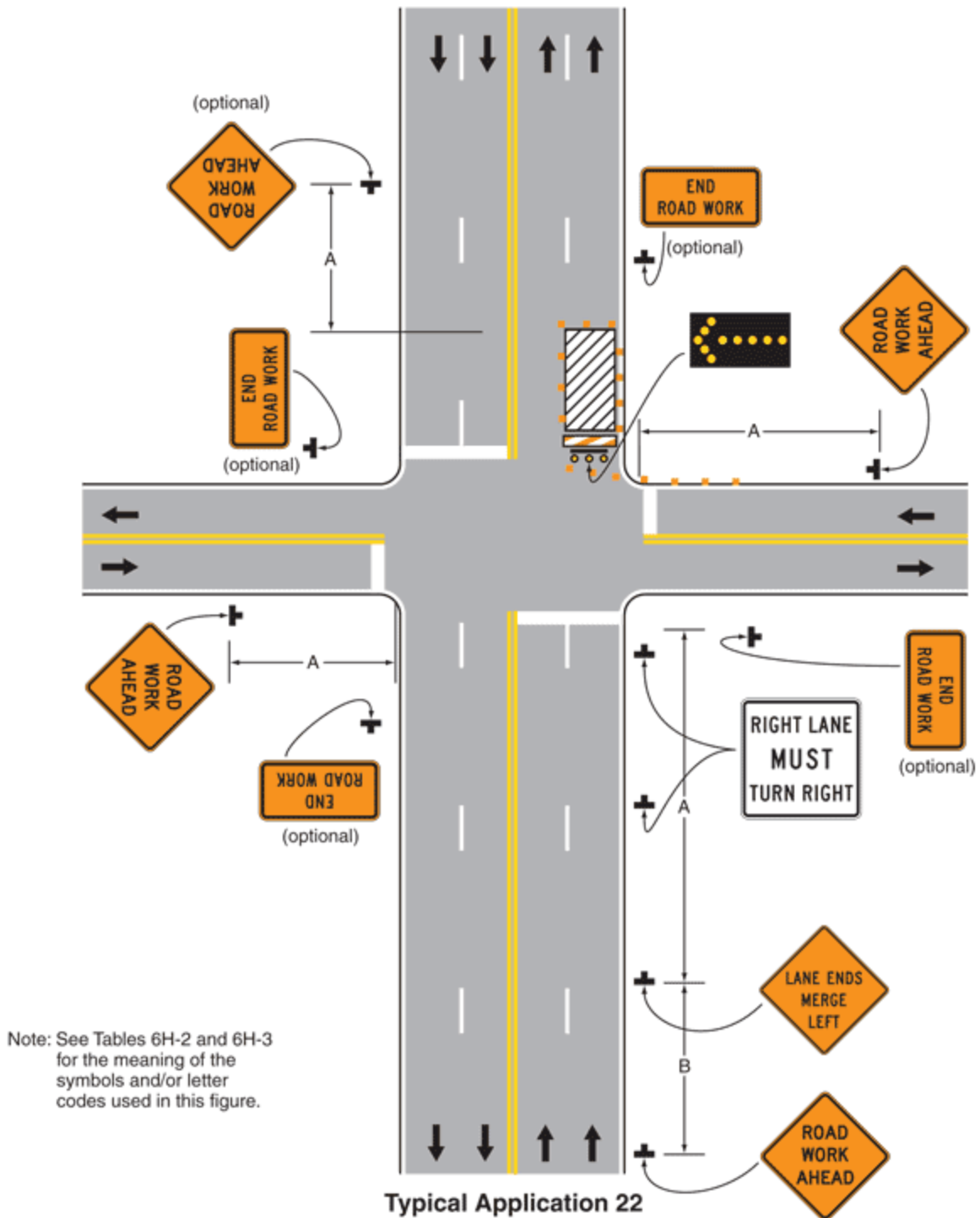


Figure 6H-33. Stationary Lane Closure on a Divided Highway (TA-33)

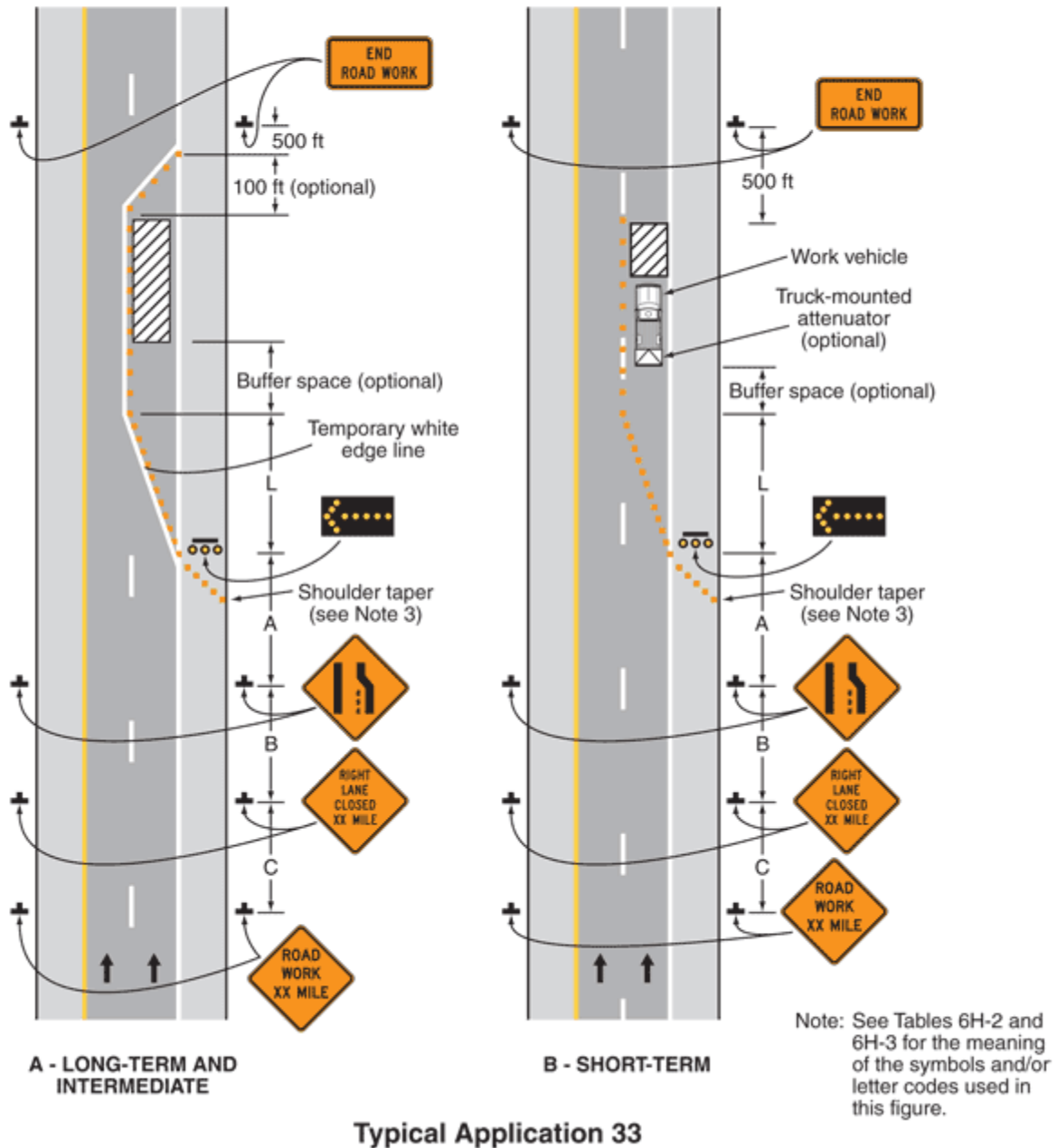


Figure 6H-12. Lane Closure on a Two-Lane Road Using Traffic Control Signals (TA-12)

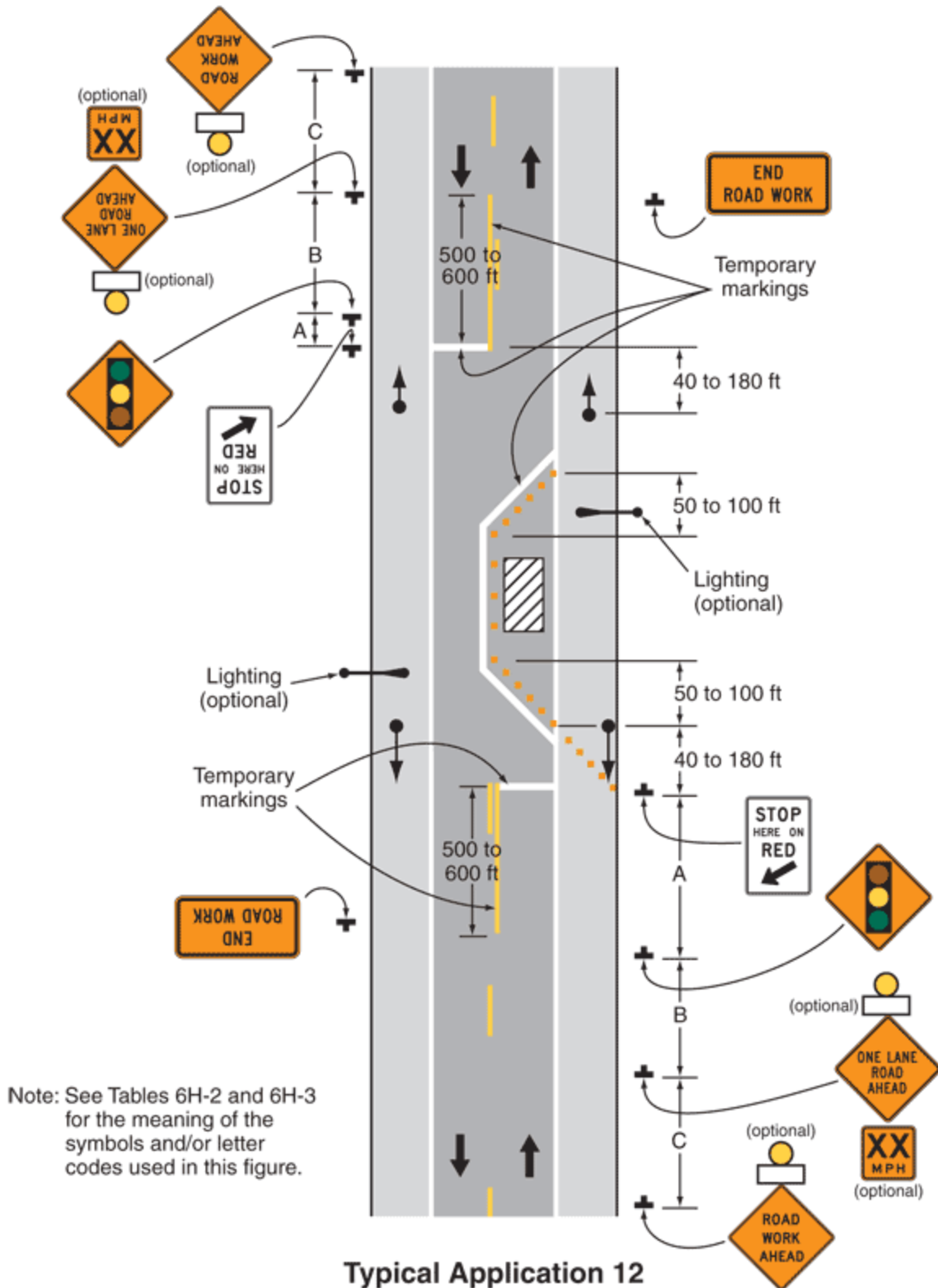
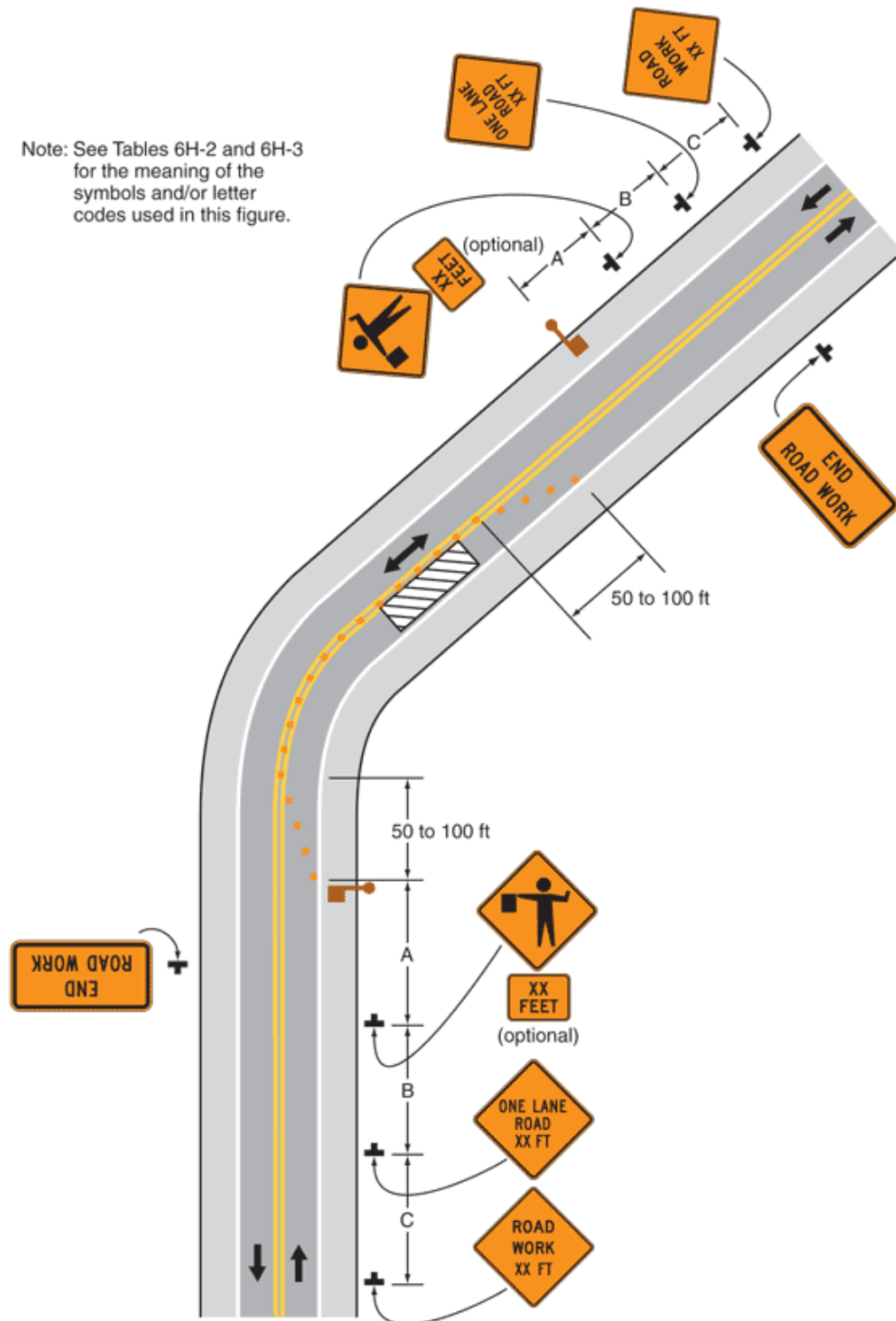


Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.



Typical Application 10

900.0 WORKING POSITIONS AND PRECAUTIONS

901.0 General

901.1 Inspect all poles, towers or structures before climbing to ensure it is safe to ascend.

901.1.1 A check shall be made on temporary service supports to determine stability before putting a ladder against it.

901.2 Do not climb poles, towers or structures while holding any object in your hand.

901.3 A climber shall not start to ascend or descend a pole, tower or structure until the climber already on the pole, tower, or structure has indicated their equipment is secure and they are in a stable position.

901.4 Inform the worker above you of your intentions when you must work directly under another worker on a pole, tower or structure.

901.5 Work activities shall be performed from a point below the energized conductor or apparatus being worked on.

901.5.1 Additional precautions shall be taken when this is not possible.

901.6 Equipment and tools shall be strong enough to support the load.

901.7 Extra precautions shall be taken when the mechanical loading on poles, towers or structures is changed to assure they are capable of sustaining the additional load or unbalanced stresses.

901.7.1 Secure temporarily against the strain with:

A. Line truck

B. Temporary guys

901.8 When dead ending conductors at or near sag tensions or moving dead ends from one location to another:

901.8.1 Mechanical control shall be maintained at all times.

901.8.2 Point of attachment equipment shall be rated and substantial enough to support the load

901.9 Workers shall not intentionally drop or throw material or equipment to or from poles, towers, structures or an aerial device if doing so creates a hazard or unsafe condition. Utilize a hand line or pully line.

901.10 When installing or removing a fuse barrel from a switch the use of the fuse barrel securing device is mandatory unless its use creates a greater hazard.

THIS PAGE
INTENTIONALLY
LEFT BLANK



Working on
Energized Parts

1000.0 ENERGIZED CONDUCTOR AND APPARATUS

1001.0 General

- 1001.1 All personnel shall be aware of the energized apparatus and equipment near them and the potential hazards that exist.
- 1001.1.1 Those unnecessary to the job being done shall be at least 10 feet away and shall be prepared to render assistance if an emergency should arise.
 - 1001.1.2 Employees shall be trained in the hazards of electric arcs.
- 1001.2 Working on energized conductors and apparatus is permitted only where it can be done without introducing an abnormal hazard and only by qualified workers.
- 1001.3 Workers shall limit their activities to one energized phase or neutral at a time.
- 1001.4 Workers shall remain clear of all grounds while working on energized conductors.
- 1001.4.1 This includes other workers on the pole, pole grounds and down-guys.
- 1001.5 Energized conductors shall be handled only after considering:
- 1001.5.1 The size and weight of the conductor.
 - 1001.5.2 Any angle on the line.
 - 1001.5.3 Any uplift or down force due to grade on the line.
 - 1001.5.4 The distances between other energized conductors and grounds.
 - 1001.5.5 Condition of the support structures on either side.
- 1001.6 Protective cover up equipment; line hose, hoods and blankets, shall be used to protect workers and equipment from incidental contact with energized conductors and apparatus, grounds, neutrals and down guys.
- 1001.6.1 Minimum cover up shall extend beyond the distance the worker can reach in all directions and beyond the distance the worker's reach is extended by any conductive tool, equipment, vehicle, pole or construction material.
- 1001.7 Stay as far away as possible from cut outs and jumpers when you are energizing or de-energizing equipment and apparatus.
- 1001.8 A worker shall not be used to hold a live conductor that is pulled out to clear another worker. Conductor shall be tagged out and secured to a substantial anchor point and properly insulated (link stick).
- 1001.9 Roller wire holder (rollerhead) attachments shall be used to move energized conductors when working from an aerial lift truck.

- 1001.9.1 A link stick shall be inserted in the winch line on digger derricks, cranes, and material handling jibs when using the winch line to handle conductors energized above 600 volts.
- 1001.10 Rubber glove methods shall not be used to energize and de-energize lines and apparatus above 600 volts unless equipped with power operated or gang operated devices.
- 1001.10.1 EXCEPTIONS: Rubber glove methods can be used:
- A. When energizing new construction two spans or less, if not picking up load and verifying no arrestors on line.
 - B. When energizing a NEW switch in the open position.
 - C. When de-energizing conductor one mile or less and you can visually inspect the entire area to be de-energized and have verified no load.
 - i Rubber glove methods may NOT be used when energizing or de-energizing conductor where transmission voltage 34 kV or above is present.
- 1001.11 Tension stringing methods, barriers or other equivalent measures shall be taken to prevent conductors from contacting energized lines or equipment when installing new conductors.
- 1001.12 Do not make contact with vehicles that have booms being operated in the primary area.
- 1001.12.1 Whenever crew members are in the primary area the Foreman / Lead Person shall have readily available: a means of communication, 17 kV (class 2) Rubber Gloves and identify the isolation points on the Pre-Job Briefing.
- 1001.13 Chain hoists shall not be used when working energized conductors or apparatus.
- 1001.14 A spotter shall be utilized when operating cranes, derricks and other lifting equipment within 10 feet of energized lines or equipment.
- 1002.0 Work Around Energized Apparatus
- 1002.1 Conductors on overhead lines, cable circuits, bushings, buses and all apparatus and equipment shall be grounded before starting work or treated as if energized.
- 1002.1.1 The only exception is new construction that does not come within one span of any energized circuit, and all the following conditions have been met:
- A. There is not a possibility of contact with another energized source.
 - B. Induced voltage is not present.
 - C. Potential for back feed does not exist.
- 1002.2 Workers exposed to slip or fall hazards shall work from a position that will not bring the worker's body in contact with exposed, un-insulated parts energized at a potential different than the worker.

- 1002.3 Do not carry material or tools on shoulders when working near energized conductors.
- 1002.4 Verify information on nameplate for proper application before installing and energizing equipment and apparatus.
- 1003.0 Working on Downed Lines and Equipment
- 1003.1 Downed lines and equipment shall be considered energized at full voltage until de-energized, tested for voltage, and grounded.
- 1003.2 Before beginning work, the person in charge shall take measures to protect employees and the public, identify special hazards related to induced voltage and back feed.
- 1004.0 Service Installation
- 1004.1 All exposed conductors within reaching distance shall be covered when installing services, unless it creates a greater hazard.
- 1004.2 When working on energized lines, employees shall not overreach the protective equipment.
- 1004.3 Secondaries shall be worked from below, whenever possible.
- 1004.4 Services shall not be energized without the consent of the employee at the other end.
- 1004.5 Services shall be de-energized where damage or deterioration to the meter may cause a flash if the meter is removed.
- 1005.0 Hot Work Gloving
- 1005.1 Whether working alone, or as a member of a crew, the qualifications of the worker or workers shall determine the type of job that can be safely performed.
 - 1005.1.1 If, at any time, additional workers are required to perform the work safely, notify supervision.
- 1005.2 A minimum of two (2) journeyman lineman are required when working in the primary area, and when performing hot work gloving or approved hotstick methods above 600 volts. One of the two journeyman lineman shall be on the ground solely observing the live line work.
 - 1005.2.1 One (1) qualified worker or supervised apprentice may perform the following operations:
 - A. Routine switching of circuits, if the conditions at the site allow this work to be performed safely. Work performed with live-line tools if the worker is not positioned within reach of or otherwise exposed to contact with energized parts. Emergency repairs to the extent necessary to safeguard the public. Secondary voltage checks on overhead or underground transformers.
- 1005.3 Gloving voltages 5kV and below may be done from the pole.

- 1005.4 Gloving voltages above 5 kV and up to 25 kV must be done from a dielectrically tested aerial lift.
- 1005.5 Only web hoists or rope blocks shall be used on gloving jobs.
 - 1005.5.1 When isolation from ground is necessary, an insulator or an insulation link shall be used.
- 1005.6 Do not use gloving work methods in heavy fog, rain, lightning, or snow conditions.
- 1006.0 Current and Potential Transformers
- 1006.1 Work on current and potential transformers shall be done by qualified workers
- 1006.2 Voltage checks shall be made on meter cabinets, conduits, and associated equipment to determine if they have become energized due to instrument transformer or other equipment failure before starting work on any metering installation with a source voltage above 600v.
- 1006.3 The secondary side of a current transformer shall not be opened while the primary side is energized including the removal of instrument rated meters without proper bypass equipment.
 - 1006.3.1 Energized current transformers shall have the secondary short-circuited prior to removal of any leads.
- 1006.4 Test leads and equipment shall be checked to insure that current transformer secondaries are not open-circuited when inserting test jacks or current probes into switchboard draw out type meters or into meter test blocks.
- 1006.5 Current transformers shall be de-energized before the secondary is closed when an open circuit exists in the secondary of a current transformer energized above 600v.
 - 1006.5.1 If an open circuit in a low voltage current transformer secondary is encountered, 17 kV (Class 2) rubber gloves shall be worn when closing the secondary.
 - 1006.5.2 De-energized metering circuits before work begins if arcing exists.
 - 1006.5.3 High voltage transformers shall be de-energized before replacing blown fuses, except in substation control circuits.
- 1006.6 All secondary connections to metering instrument transformers shall be visually inspected before energizing.
- 1006.7 The absence of voltage on the low-voltage side of a transformer shall not be considered positive indication that the high-voltage side is de-energized.
- 1006.8 Each CT and PT secondary circuit shall have only one ground.

1007.0 Capacitors

- 1007.1 Capacitors shall be tested with a capacitance meter to establish the value of capacitance before initial installation or any time trouble with a capacitor can is suspected.
- 1007.2 Capacitors shall be considered energized until each unit has been short circuited and grounded after they are de-energized.
- 1007.2.1 Single bushing capacitors shall have the bushing terminal grounded.
 - 1007.2.2 Two bushing capacitors shall have both bushing terminals short circuited and grounded.
 - 1007.2.3 After grounding, the ground can be removed to test the capacitor cans.
- 1007.3 Capacitor banks shall be allowed to bleed off a minimum of five minutes before reclosing or before short circuiting and grounding the units.
- 1007.4 Substation capacitor banks with insulated racks shall also have the rack grounded after de-energization and prior to work beginning on the units.
- 1007.5 The SOA shall notify all workers within the substation when a substation capacitor bank is to be opened or closed by supervisory control.
- 1007.5.1 Workers shall be in a protected area before the capacitor bank switch is opened or closed.

1008.0 Regulators

- 1008.1 When working on regulators or tap-changing transformers, care shall be exercised to see that external power is not back fed into the regulator, thus creating a primary voltage on the windings.
- 1008.2 Never energize, deenergize or by-pass a regulator at the device unless it is on the neutral position with controls in the off position and has been verified by using a Regulator Neutral Detector and one of the following methods:
- Verification of the neutral position by use of the dial position indicator on the regulator (not the control panel)
 - Illumination of the neutral light
- 1008.2.1 Exceptions:
- i. When energizing a regulator with a single operation bypass switch for the initial installation, the regulator can be verified to be on neutral by using both of the following methods:
 - Verification of the neutral position by use of the dial position indicator on the regulator (not the control panel)
 - Illumination of the neutral light by powering the control externally

- ii. If the regulator has a 3-position switch, you may energize the regulator with the source side disconnect only, to then verify that the regulator is in the neutral position through the use of the regulator neutral detector and one other method.
- iii. If the use of a regulator neutral detector introduces a greater hazard due to the physical construction of the regulator installation, you may verify the regulator is on neutral using both of the following methods:
 - Verification of the neutral position by use of the dial position indicator on the regulator (not the control panel)
 - Illumination of the neutral light

1008.2.2 De-energize the circuit if unable to put place the regulator on neutral position.

1008.3 When working on regulators or load tap changer (LTC) internal parts, they shall be de-energized.

1008.4 When working around an energized regulator/LTC and it is identified as a hazard, controls shall be placed in the OFF or Manual position.

1009.0 Lightning Arrestors

- 1009.1 Verify nameplate information before installing arrestors.
- 1009.2 Connect arrestors prior to energizing the line when possible.
- 1009.3 Attach the ground lead first when installing arrestors.
- 1009.4 When energizing arrestors, stay away from the area or as far from the arrestor as possible.
- 1009.5 Disconnect the energized lead first when de-energizing arrestors.

1010.0 Ferroresonance

1010.1 Energizing three phase, padmount transformers:

1010.1.1 Option 1 (Use when internal primary switch is available)

- A. Check the internal primary switch to be open,
- B. Plug in the elbows at the transformer,
- C. Energize the cables to the transformer,
- D. Close the internal primary switch.

1010.1.2 Option 2 (Use if no internal primary switch is available)

- A. Check that elbows are parked on standoff insulators,
- B. Energize the cables to the transformer,
- C. Plug in the elbows at the transformer.

1010.1.3 Option 3 (Use with live front transformers with no internal primary switch)

- A. Energize the cables to the transformer.

1010.2 De-energizing three phase padmount transformers:

1010.2.1 Option 1 (Use when internal primary switch is available)

- A. Open the internal primary switch,
- B. Check for absence of secondary voltage,
- C. De-energize the cables.

1010.2.2 Option 2 (Use with dead-front transformers if no internal primary switch is available)

- A. Pull the elbows in the transformer and place on stand off insulators,
- B. De-energize the cables to the transformer.

1010.2.3 Option 3 (Use with live front transformers with no internal primary switch)

- A. De-energize the cables

- 1010.3 Utilize the internal gang operated switch in the transformer, if available, to do the switching on dead front or live front transformers.
- 1010.3.1 Pad mounted transformers on 24.9kV and 34.5kV systems shall have an internal three phase switch.
- 1010.4 All three phase transformers and three phase transformer stations consisting of single phase transformers on the KPL 34.5kV system shall have a gang operated primary switch that will be used to energize and de-energize the transformers.
- 1010.5 Grounded wye-wye and open wye-open delta are the preferred connections to be used on the Fort Scott 34.5kV system.
- 1010.5.1 Delta-delta and wye-delta transformer stations can only be installed if a gang operated primary switch is installed and used to energize and de-energize the transformers.
- 1010.6 The primary Y point on existing ungrounded wye-delta overhead transformer stations 34.5kv and below systems shall be temporarily grounded:
- 1010.6.1 When energizing the transformers.
- 1010.6.2 When de-energizing, only if all fuses are in.
- 1010.6.3 This temporary ground shall not be left permanently installed.
- 1011.0 High Voltage Maintenance (25kV and above)
- 1011.1 Hot stick methods shall be used when working all voltages greater than 25kV.
- 1011.1.1 EXCEPTION: Properly trained and equipped individuals may use bare hand techniques.
- 1011.2 Hot sticks shall be used when installing or removing protective cover up on circuits or apparatus energized above 25 kV.
- 1011.3 Only tools designed and tested for work on conductors and apparatus energized at 25 kV and above shall be used.
- 1011.4 Avoid contact with grounds or metal parts when stepping from a hook ladder to a wood structure.
- 1011.5 A safety rope shall be attached from the top to the bottom of a hook ladder when a hook ladder is hung vertically.
- 1011.5.1 Workers shall attach their safety belts so they are inside the rope.
- 1012.0 Ground Banks for Substation Transformers
- 1012.1 Do not energize any system or circuit fed from a substation transformer with a grounding bank with the grounding bank out of service.

- 1012.2 Capacitor banks shall be connected with ungrounded neutrals or phase to phase on circuits fed from substation transformers with grounding banks.
- 1012.3 Distribution transformers shall be connected phase to phase on circuits fed from substation transformers with grounding banks.
- 1013.0 Substation Reactor Banks
- 1013.1 The SOA shall notify all workers within the substation when a substation reactor bank is to be opened or closed by supervisory control.
 - 1013.1.1 Workers shall be in a protected area before the reactor bank switch is opened or closed.

1100.0 METERING

1101.0 General

1101.1 Appropriate measures shall be taken to ensure the public is kept away from the work area.

1101.2 The employee shall not leave the work site with equipment or apparatus exposed.

1101.3 Account notes shall be kept current to avoid unsafe conditions.

1102.0 Hazardous Animals

1102.1 Field Service employees shall carry a company approved defensive animal device at all times.

1102.2 Employees shall not enter a yard coded vicious animal, if animal is not secured, or contained. Employees shall not enter the yard of a secured vicious animal, without making contact with the customer. Employee should ask customer to notify all other occupants at the premise, if any, that there will be an employee on the property to ensure everyone on the premise is notified.

1102.3 Animal treats shall not be fed by hand. Treats shall be tossed to the ground or placed in such a way that the animal remains in sight while retrieving the treat.

1102.4 Do not enter an area where the owner is physically restraining the animal. Ask them to confine the animal.

1102.5 Do not walk within the area indicated by a travel path of a restrained animal.

1103.0 Safe Work Practices

1103.1 All metering equipment shall be treated as energized until tested for voltage if a visual inspection reveals the possibility of a fault on the meter enclosure and/or meter.

1103.2 Low voltage rubber gloves and protectors shall be worn before making contact with service equipment that could become energized.

1103.3 Prior to beginning work, a visual check shall be made of the meter, enclosure and service installation to ensure that the proper meter is being used and the equipment is in good working condition.

1103.3.1 If a visual inspection of the metering installation reveals that the removal of the meter may cause a fault, no attempt shall be made to remove the meter until the service has been de-energized.

1103.4 While performing any work inside the meter enclosure/service equipment;

1103.4.1 A visual inspection shall be made of the internal parts of the meter enclosure/service equipment including lugs, clips, blocks, terminations, etc.

1103.4.2 Electrical tests shall be made for back feed, proper phasing, voltage and short circuited conductors, including phase to phase and phase to ground.

- 1103.4.3 Mechanical tests shall be made for lug connections as well as jaw tension.
- 1103.5 Do not use excessive force to install or remove a meter.
- 1103.6 On all 480v 3-wire, 3-phase self-contained meter installations, the service shall be de-energized before removing or installing meters.
- 1103.7 Meter socket bypass handles shall not be used as service load-break or load-make devices.
- 1103.8 A meter or approved socket cover shall be installed if a meter socket is to be left energized.
- 1103.9 Potential test leads and jumpers used in testing watt-hour meters shall be properly fused.

**THIS PAGE
INTENTIONALLY LEFT
BLANK**

1200.0 SUBSTATION WORK

1201.0 General

- 1201.1 Only qualified workers or personnel accompanied by a qualified worker may enter substations.
- 1201.2 All substation and switchyard gates must be closed at all times, and locked when unoccupied.
- 1201.3 Doors to all control houses and switchgears in substations shall be locked when not in use (when capable of being locked).
- 1201.4 Notify the appropriate SOA or SOA's before entering a substation and when leaving a substation.
- 1201.4.1 Notify TSO for substations with primary voltages 69 kV or above.
 - 1201.4.2 Notify DSO for substations with primary voltages below 69 kV.
 - 1201.4.3 Notify both TSO and DSO when substation has primary voltages at or above 69 kV and below 69 kV.
- 1201.5 Substation fences shall be grounded by bonding to the substation ground grid per NESC.
- 1201.6 Designated AWG copper grounds shall be applied to all mobile equipment when working on substation and switching station equipment and shall be attached to the ground grid whenever possible.
- 1201.7 When pumping any liquid, precautions must be taken to dissipate static charges by properly grounding pump equipment.
- 1201.8 All insulated HIGH VOLTAGE cables shall be treated the same as a non-insulated conductor unless the cable has a properly grounded shield. The shield shall be capable of maintaining the outer surface effectively at ground potential.
- 1201.9 Safety valves or devices are set to blow off at, or below, the maximum allowable pressure and under no circumstances shall a safety valve be blocked or otherwise be made inoperative.
- 1202.0 Barriers
- 1202.1 Barriers, ropes, or plastic chains shall be used to isolate active equipment from electrical apparatus and equipment temporarily de-energized and removed from service for repair or inspection, when the foreman/lead person determines it is safer to do so.
- 1202.1.1 When an addition is being constructed, barricades will be installed around the existing energized substation until the new construction is completed.
 - 1202.1.2 These devices should be installed no less than 3 feet off the ground.

- 1202.2 When employees are positioned within reaching distance of an energized conductor or apparatus, barriers or protective cover up shall be used to prevent incidental contact.
- 1202.3 Protective guards or barriers shall not be removed from energized equipment.
- 1203.0 Working on Top of Substation Transformers
- 1203.1 When working on top of substation transformers, the workers shall use approved fall protection.
- 1204.0 Circuit Breaker Maintenance and Repair
- 1204.1 Proper clearance shall be obtained to test or make repairs to circuit breakers if the breaker needs to be opened.
- 1204.2 Metal clad gear must be in the open position prior to being rolled on or off the bus.
- 1204.3 A visual check shall be made to determine that all disconnects or air-break switches are in the full OPEN position.
- 1204.4 When connecting the leads for test purposes work shall be performed below the energized zone from a ladder or approved aerial device.
- 1204.5 When testing substation equipment from a vehicle, the test equipment will be grounded using the manufacturers provided ground and the vehicle shall be grounded to the substation ground with 1/0 AWG copper.
- 1204.6 When a Circuit Breaker is being operated electrically or by stored energy, employees shall keep body parts clear of the mechanical closing mechanism.
- 1204.7 Before entering the tank of a Circuit Breaker to make repairs or adjustments, the following precautions shall be carried out:
- 1204.7.1 All AC control power shall be disconnected.
 - 1204.7.2 All DC control power shall be disconnected.
 - 1204.7.3 All stored energy shall be removed.
 - 1204.7.4 Operating mechanism shall be in the relaxed position or blocked to prevent movement.
- 1204.8 When employees are working inside the tank, the breaker shall not be closed electrically or by stored energy.
- 1204.9 After all work has been completed on top of the equipment, a careful check shall be made to see that all tools and materials have been removed.
- 1204.10 If it becomes necessary to climb on top of a Circuit Breaker during oil filtering operations, the terminals shall be grounded.

- 1204.11 SF 6 Circuit Breakers shall have their pressure reduced to manufacturers specifications during transport.
- 1205.0 Testing Procedures
- 1205.1 Test areas shall be guarded:
- 1205.1.1 Permanent test areas shall be guarded by walls, fences, or barriers designed to keep employees out of the test areas.
 - 1205.1.2 In field testing, or at a temporary test site, one of the following means shall be used to prevent unauthorized employees from entering:
 - A. The test area shall be guarded with distinctively colored rope, chain or plastic safety fence. These devices shall be installed no less than 3 feet off the ground with safety signs attached to it.
 - i The test area shall be guarded by a barrier or barricade that limits access to the test area to a degree equivalent, physically and visually, to the barricade specified in paragraph above, or the test area shall be guarded by one or more test observers stationed so that the entire area can be monitored.
 - 1205.1.3 Only Company approved equipment shall be used when phasing the circuit or testing for polarity.
 - A. When testing energized circuits or equipment, all temporary leads used in testing shall be adequately supported to prevent injury.
 - 1205.1.4 When determining if a transformer is deenergized, verify the absence of voltage on both the low and high side.
 - 1205.1.5 All temporary leads used in testing voltage from 600 volts to 15 kV shall be single conductor with insulation rated for the amount of voltage being measured.
- 1206.0 Batteries - UPS and Lead-Acid
- 1206.1 The manufacturers' recommendations shall be followed when performing maintenance and/or charging such systems.
- 1206.1.1 For additional information, refer to manufacturers' product information and MSDS.
- 1206.2 Only qualified persons shall operate and/or maintain lead-acid batteries and associated charging equipment.
- 1206.3 Full face shield and goggles, chemical resistant gloves, rubber apron and overshoes shall be worn whenever fluid level maintenance is being performed.

- 1206.4 An approved eyewash station and/or emergency shower shall be readily identified and accessible within 25 feet of the battery area.
- 1206.5 When charging batteries, all vent caps shall be kept in place. Care shall be exercised to ensure such vent caps are functioning properly to allow gas to escape the battery cell.
- 1206.6 If batteries are within a cabinet/enclosure, doors and/or covers shall be opened during the charging procedure to dissipate heat and vapors unless the cabinet has louvers or an exhaust fan.
- 1206.7 When making up electrolyte for batteries, employees shall always pour the acid slowly into the water, not water into the acid. The wrong procedure can cause an explosion.
1206.7.1 A battery filling jug or siphon shall be used to handle electrolyte.
- 1206.8 Precautions will be taken to prevent grounding the case of a NiCad cell, since the case is part of an electrical circuit.
- 1206.9 Smoking or the use of open flames in battery rooms shall be prohibited.
- 1207.0 Unit Subs
- 1207.1 Unit substation cabinets with exposed parts energized above 600v shall be marked and the worker shall inspect the ground connection prior to opening the cabinet door.
- 1208.0 Substation Ground Grid
- 1208.1 Use caution whenever digging near substation ground grids.
- 1208.2 If a protective ground or ground grid is accidentally opened or cut treat the ground conductors as energized and work with hot work methods until the opening has been eliminated.
- 1208.3 Keep exothermic (Cadweld, Thermoweld) molds in good working condition.
1208.3.1 Discard molds that have been wet or damaged.
- 1208.4 Wear a welding style leather gloves or use a remote detonator when making exothermic connections.
- 1208.5 Place a copper jumper, equivalent to the grid conductor size, around the exothermic area when tapping new ground grid onto an existing grid.
- 1209.0 Wolf Creek
- 1209.1 All pertinent training, operating and maintenance requirements specified by Wolf Creek shall be followed by any worker at the Wolf Creek Generation Station.
- 1210.0 Working at Energy Centers
- 1210.1 Employees shall be trained on the applicable Generation procedures and will follow those procedures when working within the plant unless Field safety rules and procedures exceed those of Generation.



Tools, Materials
& Equipment

1300.0 UNDERGROUND LINES AND EQUIPMENT

1301.0 Working on Energized Cables

1301.1 Cables in the area and all grounded equipment where incidental contact may occur shall be covered with rubber blankets or approved insulating shields before work begins on an energized secondary cable.

1301.1.1 Workers shall use company approved tools for testing, cutting or removing sheathing or sleeves in addition to normal PPE.

1301.1.2 Cables with nonmetallic sheaths and those with an insulating jacket over the metallic sheath need not be covered.

1301.2 Load break elbows can be used to:

1301.2.1 Make and break load,

1301.2.2 Parallel conductors on the same circuit after checking phasing,

1301.2.3 Parallel circuits feeding from two different substation breakers with the approval of the System Operating Authority having jurisdiction.

1301.3 Do not drop or pick up load with the primary side switch.

1302.0 Pulling Cables

1302.1 Do not handle pull-wires or pulling-lines within reaching distances of blocks, sheaves, winch drums or take-up reels.

1302.2 Pull-wires, steel pulling-lines or metal rodding shall not be pushed through ducts where energized equipment is present unless a worker is stationed at the end of the run to signal other workers when the end of the duct is reached.

1302.3 Rodding and fishing shall be done in the direction away from a substation, vaults and pad mounted equipment which contains uninsulated energized conductors.

1302.4 Workers shall exit manholes or vaults at the receiving end during pulling operations involving heavy pulling strains.

1302.5 Winch operators shall not leave their posts while the winch is running.

1302.6 Workers shall stand clear of winch lines and ropes under strain.

1303.0 Moving Energized Cables

1303.1 Cables energized up to 34.5kV may be moved by a qualified employee after the cables have been inspected.

1303.1.1 They shall not be moved where such movement would permanently change the bend radius of the cable.

- 1303.2 The handling of energized underground cables and equipment from the earth is permitted to change out pad mounted distribution transformers if:
- 1303.2.1 The equipment is dead-front equipment only.
- A. Hot-sticks are used to transfer the conductor to the feed-through or standoff bushing;
 - B. The conductor may be handled with rubber gloves alone if the concentric neutral is bonded to the elbow.
- 1304.0 Heating Metals and Compounds
- 1304.1 Employees working on lead-type cables shall be trained annually on the hazards of lead.
- 1304.2 Compound pots shall not be heated in a manhole or vault unless adequate ventilation and personal protective equipment is used.
- 1304.3 Fuel reservoirs of furnaces or blow torches shall not be opened while the devices are in operation, and they shall be allowed to cool before refueling.
- 1304.4 Furnaces shall always be placed in a secure level position, and on the downhill side of the manhole.
- 1304.5 Operating furnaces and hot materials shall not be left unattended.
- 1304.6 Workers in the manhole or vault shall be warned before raising or lowering hot materials.
- 1304.6.1 Dippers or ladles shall not be left in the pots when raising or lowering pots.
- 1304.7 Compound pots shall be heated slowly to prevent any explosion from expanding air or gases in the compound.
- 1304.8 Ladles shall be warmed before placing in hot solder or compound.
- 1305.0 Network Protectors
- 1305.1 When work is performed on transformers, the primary switch shall be in the OPEN position and transformer links and fuses removed.
- 1305.2 No maintenance shall be done while the protector is racked-in and energized (in-service).
- 1305.3 Protectors shall be racked-out on approved extensions whenever maintenance is performed
- 1305.4 When working on the termination chamber or the high-side switch, the transformer shall be grounded and fuse links removed. Also ground the high-side switch at the vault nearest to where work is performed.
- 1305.5 A fuse link-it shall be used to check the protector before the transformer links and fuses are replaced.

- 1305.6 Check the oil level in the switch to be at the proper level before operating 12 kV primary underground network oil switches.
- 1306.0 Grounding URD Cables
- 1306.1 In all cases cables shall be grounded on both ends and the cable verified to be both ends of the same cable before removing the ground on the end of the cable to be worked on.
- 1306.2 Verification shall be obtained by push/pull method or continuity testing.

THIS PAGE
INTENTIONALLY
LEFT BLANK

1400.0 HAND AND POWER TOOLS

1401.0 Hydraulic Tools

- 1401.1 Only trained employees shall be allowed to operate hydraulic tools.
- 1401.2 Safety clips and retainers shall be installed and maintained on hose and tool connections except for those equipped with quick disconnects.
- 1401.3 Do not hoist or lower hydraulic tools by their hoses.
 - 1401.3.1 EXCEPTION: Lowering tamps into or raising tamps from pole holes
- 1401.4 Only nonconductive and dielectrically tested hose and oil shall be used on or near energized equipment.
- 1401.5 Check hoses and ends on hydraulic hoses and tools prior to use.
- 1401.6 Never attempt to stop a hydraulic leak by covering it with your hand or fingers.

1402.0 Compressed Air

- 1402.1 Only trained employees shall be allowed to operate pneumatic tools.
- 1402.2 Safety clips and retainers shall be installed and maintained on hose and tool connections except for those equipped with quick disconnects.
- 1402.3 Hoses shall not be laid over ladders, steps, scaffolds or walkways where they may create a tripping hazard unless properly barricaded or positioned.
- 1402.4 Leaking or defective hose shall be tagged and removed from service immediately.
- 1402.5 Compressed air nozzles shall be a safety type, controlled by a fixed orifice.
 - 1402.5.1 Pressure shall not exceed 30 pounds per square inch at the nozzle.
 - 1402.5.2 Compressed air shall not be used to blow dirt from clothing or any part of the body.
 - 1402.5.3 Parts, tools or equipment may be cleaned with low pressure with the use of effective chip guarding and proper personal protective equipment.
- 1402.6 Pneumatic tools shall never be pointed at any person.
- 1402.7 Do not hoist or lower pneumatic tools by their hoses.
- 1402.8 All compressed air hoses exceeding 1/2-inch inside diameter shall have a flow limiter at the source supply or branch line to reduce pressure in the event of hose failure.
- 1402.9 Air shall be shut off at the air supply valve ahead of the hose and hoses shall be bled at the tool before adjusting or changing air tools unless tools and hoses are equipped with quick-change connectors.
- 1402.10 Check hoses and ends of pneumatic hoses prior to use.

1403.0 Powder Actuated Tools

- 1403.1 Only trained employees shall be allowed to operate powder actuated tools such as cartridge actuated or exothermic (Cadweld) devices.
- 1403.2 Powder actuated tools shall be used in accordance with the manufacturer's recommendations.
- 1403.3 Operators and their assistants using these tools shall wear goggles or a face shield over safety glasses and hearing protection in addition to normal PPE.
- 1403.4 Loaded tools shall be used immediately and shall never be left unattended.
- 1403.5 Tools shall be maintained in good condition and serviced regularly.
- 1403.6 Inspect the tool to be sure that it is clean, that moving parts operate freely and the barrel is free from obstruction before use.
- 1403.7 Follow the manufacturer's recommendations if a misfire occurs.
- 1403.8 Misfired cartridges shall be disposed of according to the manufacturer's recommendations.

1404.0 Grinding Wheels and Wire Brush Wheels

- 1404.1 Only wheels recommended by the grinder manufacturer shall be used.
- 1404.2 Grinding and wire wheels shall carry a manufacturer's label specifying safe operating speed.
- 1404.3 Only trained workers shall operate grinding wheels. Grinding non-ferrous metals, such as aluminum, copper or brass with shop grinding wheels is prohibited.
- 1404.4 Wear approved safety glasses and a face shield when grinding or using a wire brush wheel.
- 1404.5 Inspect all grinding wheels for cracks, damage and balance before use. Ring test shall be performed prior to installation.
 - 1404.5.1 Dress wheels as necessary.
- 1404.6 Grinding wheel work rests shall measure no more than 1/8 inch away from the grinding wheel.
- 1404.7 Do not adjust the work rest while the wheel is in motion.
- 1404.8 Make sure safety protection hoods, work rests and other guards are in place and properly attached.
- 1404.9 Flat wheels shall be replaced when their diameter is less than 2/3 of the original diameter.
- 1404.10 Grind lightly on a cold wheel.
- 1404.11 Do not grind on the side of a wheel unless the wheel is marked as suitable for side grinding.
- 1404.12 Replace the wheel whenever it has been damaged.

1405.0 Special Work Practices for Wire Brushing Wheels

- 1405.1 Operators of portable and stationary wire brushing wheels shall protect nearby persons and equipment from flying particles.
- 1405.2 Adjust protective wire brush wheel covers to enclose the wheel as much as possible.
- 1405.3 Do not use a tool rest when operating a wire brush wheel.
- 1405.4 Keep your hands as far away from the wheel as possible.
- 1405.5 Replace the wheel when it starts to shed.

1406.0 Chain Saws

- 1406.1 Only trained employees are permitted to operate a power chain saw.
- 1406.2 Hard hat, safety glasses, hearing protection and gloves are required when operating a chain saw.
- 1406.3 A hard hat with mesh screen or a hard hat with face shield shall be worn by operators of Company chippers.
- 1406.4 Chain saw chaps that conform to ANSI Z133.1 shall be worn while operating a chain saw during ground operations.
- 1406.5 Do not wear loose clothing that may become caught in the moving parts.
- 1406.6 All chain saws shall be equipped with "kickback" controls.
 - 1406.6.1 Control cannot lock in the "on" position.
- 1406.7 Do not approach a chain saw operator while the saw is operating.
- 1406.8 Make certain you have secure footing when operating a chain saw.
- 1406.9 Have both hands on the chain saw at all times when operating.
 - 1406.9.1 EXCEPTION: Company approved saws with 12" blades or less may be operated with one hand when a greater hazard is posed by keeping both hands on the chain saw in that particular situation.
- 1406.10 Only Company approved chain saws shall be used.
- 1406.11 Drop starting of saws is prohibited.
- 1406.12 Chain saw engines shall be turned off when:
 - 1406.12.1 Working on any part of the chain or cutting bar.
 - 1406.12.2 Moving from one location to another.
 - 1406.12.3 Raising or lowering the saw including in a bucket.
 - 1406.12.4 Transferring the saw from one person to another.

1406.12.5 The saw is unattended.

1406.13 Chain saws shall be permitted to cool for two to three minutes before refueling.

1406.14 Chain saws shall not be refueled inside a bucket.

1406.15 Refueling shall be performed in an area free from combustible materials.

1406.15.1 Smoking is prohibited while refueling the chain saw.

1407.0 Live Line Tools

1407.1 All hot sticks and hot jibs, shall be wiped clean and inspected by the worker each time before use.

1407.2 Do not use untested hot sticks or hot jibs.

1407.3 Use all precautions to keep hot sticks and hot jibs dry.

1407.4 Do not lay hot sticks or hot jibs on the ground

1407.5 Hot sticks and hot jibs shall be stored in a protective bag, container or designated bin.

1500.0 MATERIAL HANDLING/EQUIPMENT

1501.0 Hauling and Distributing Poles and Other Materials

- 1501.1 Digger derricks, cranes or other mechanical equipment designed to handle poles shall be used to load poles.
- 1501.2 Poles and other long loads shall be loaded parallel with the truck length and shall not extend beyond the normal width of the vehicle.
- 1501.3 All materials shall be securely fastened every 10 feet with a minimum of 2 tie-down points except poles loaded on pole trailers.
- 1501.3.1 Poles loaded on trailers shall be secured with all tie-downs supplied by the manufacturer.
- 1501.4 Poles loaded on trucks and trailers shall be securely fastened in place with a nylon strap, chain or steel cable having a load rating of 2,450 pounds or more.
- 1501.5 A ratcheting load binder shall be used to keep the load tight.
- 1501.5.1 Ratcheting load binders should be placed on the side of the load.
- 1501.5.2 Breakover style boomers are prohibited.
- 1501.6 A company approved light bar with flags shall be used, day or night, when material and poles extend 4 feet beyond the back of a trailer. A company approved single light with flags shall be used when hauling pole(s) on the pole racks when material extends 4 feet beyond the back of the truck.
- 1501.7 Escort vehicles shall be used when hauling long loads where the long load must enter congested areas or heavy traffic conditions and creates a hazard.
- 1501.8 Materials shall not be suspended from cranes and booms while traveling.
- 1501.8.1 Exception: When it is necessary to move the truck with a load on the boom in off road situations for short distances, such as taking a pole into a short or narrow alley.
- 1501.9 Over length permits are required when combined length of load and vehicle exceed 65 feet in length.
- 1501.9.1 A combined length of load and vehicle exceeding 85 feet shall require an oversize load sign attached to the front of the truck and to the rear of the trailer.
- 1501.10 Distribute weight evenly, avoiding top heavy loads if possible. When hauling top heavy loads, slow down, secure the load and take extra precautions.

- 1501.11 Pole racks on single axle line trucks shall be used to haul only one pole, 40 foot maximum. Pole racks on tandem axle line trucks shall be used to haul not more than two 40 foot poles, or one 35 and one 45 foot pole at the same time.
- 1501.11.1 Do not exceed overall height of truck.
 - 1501.11.2 Do not exceed maximum GVW, front or rear axle capacity.
 - 1501.11.3 No load shall extend more than 3 feet beyond the front bumper of the vehicle.
 - 1501.11.4 Exceptions:
 - A. Longer lengths of poles, up to a single 60 foot maximum, may be hauled for short distances on tandem axle truck pole racks, on job sites, providing the load rating of the vehicle is not exceeded and the stability of the truck is not jeopardized.
- 1501.12 When hauling poles lengthen the trailer to accommodate pole length. Shorten the trailer as much as possible after the pole(s) has been delivered.
- 1502.0 Setting and Pulling Poles
- 1502.1 Poles being raised or lowered shall be handled with the butt end heavy.
- 1502.2 When pulling poles or pole butts the cable or boom shall not be overloaded due to the weight of the pole and its adhesion to the ground.
- 1502.2.1 Other suitable means such as pole jacks, digging around the pole, etc., shall be used.
- 1502.3 Poles may be set in the primary area, with or without pole grounds attached, as long as protective cover requirements can be met.
- 1502.4 Do not set poles in energized lines with guy wire attached.
- 1503.0 Storing and Piling Material
- 1503.1 Interlock stacks where possible or use other means to prevent overturning or movement.
- 1503.2 Ensure heavy material like sand, gravel, lime or cement do not exceed the maximum weight capacity of shelving.
- 1503.3 Store barrels and drums on end where possible or block them securely to prevent movement.
- 1503.4 Do not store material where lifting devices such as forklifts and booms would be within 20 feet of energized lines or equipment when loading or unloading.
- 1503.5 Substations shall not be used for storage except for minor parts essential to the maintenance of the installed equipment located within the substation.

- 1503.5.1 Storage may be provided at substation properties if the storage area is fenced off from the substation and away from the circuits entering and leaving the substation.

1504.0 Rigging

- 1504.1 Inspect all blocks, wedges, jacks, etc., to ensure good working condition.
- 1504.2 Inspect all jacks for rated capacity and safe operating conditions.
- 1504.3 Use only solid timber for cribbing.
- 1504.4 Stack the timber to prevent falling, congestion or tripping during the rigging operation.
- 1504.5 Use wood blocks to prevent metal-to-metal contact.
- 1504.6 Make cribbing as wide as possible to obtain good stability.
- 1504.7 Wedges used for leveling or chocking shall be carefully placed to prevent them from breaking loose.
- 1504.8 Place rollers evenly to divide the load.
- 1504.9 Work from the side rather than in front of a roller.
- 1504.10 Set jacks to prevent them from causing tipping or slipping from under the load.
- 1504.11 If a rigging job must be left unattended, barricade and/or rope all danger zones.
- 1504.12 If unattended overnight, all obstructions shall be well lighted or appropriately guarded by barricades, fencing, etc.

1505.0 Slings and Ropes

- 1505.1 Slings shall not be loaded in excess of their rated capacity as noted on the identification markings.
- 1505.2 Do not use slings without affixed and legible identification markings.
- 1505.3 The safety factor used to determine the safe load for a sling must be determined by:
 - 1505.3.1 The sling's condition.
 - 1505.3.2 The type of lift.
- 1505.4 Slings and bindings shall be readjusted as necessary to insure safety and stability with every load.
 - 1505.4.1 Use suitable wood or rubber protectors where slings go around sharp corners.
- 1505.5 All slings and other attachments shall be of sufficient strength, proper type and safe for their intended use.

- 1505.6 All hoisting equipment, slings, fastenings and attachments shall be inspected before each use for damage or defects. Damaged or defective equipment shall be removed from service.
- 1505.7 All hoisting equipment, slings, fastenings and attachments shall be inspected annually by a designated person or qualified third party. This inspection shall be documented.
- 1505.8 Hooks, rings, links, welded or mechanical coupling links or other attachments shall have a rated capacity at least equal to the sling or the sling shall not be used in excess of the rated capacity of the weakest component.
- 1505.9 Makeshift links or fasteners formed from bolts, rods, or other such attachments shall not be used.
- 1505.10 Kinks shall be removed before any strain is put on a sling.
- 1505.11 Slings shall not be shortened with knots, bolts, or other makeshift devices.
- 1505.12 Slings used in a basket hitch shall have the loads balanced to prevent slippage.
- 1505.13 Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.
- 1505.14 A sling shall not be pulled from under a load if the load is resting on it.
- 1505.15 Slings must be stored off the ground when they are not being used.
- 1505.16 Sling angles greater than 60 degrees from vertical are not recommended.
- 1506.0 Wire Rope Slings
- 1506.1 Wire rope slings should be kept lubricated to prevent rusting.
- 1506.2 Use suitable softeners/pads to prevent chokers from slipping during a lift.
- 1506.3 U-Clamps shall not be used to make an eye in wire rope.
- 1506.4 Wire ropes shall be replaced when any of the following conditions are detected:
 - 1506.4.1 When there are ten or more randomly distributed, broken wires in any one lay.
 - 1506.4.2 When there are five or more broken wires in any one strand of any one lay.
 - 1506.4.3 When 1/3 of an individual outside wire's diameter is worn.
 - 1506.4.4 When there is kinking, crushing, bird caging, or any other damage or distortion of the wire rope structure.
 - 1506.4.5 When there is evidence of heat damage.
 - 1506.4.6 When there are two or more broken wires in any one lay in those sections beyond the end connections.

1506.4.7 When there are one or more broken wires at the end connection.

1507.0 Synthetic Fiber Ropes and Slings

1507.1 Ropes and slings shall be dried and stored properly, keeping them free from mechanical damage, excessive heat or exposure to deteriorating substances such as oil, solvents, cleaning agents, etc. when not in use.

1507.2 Synthetic web slings shall show the name or trademark of manufacturer, rated capacities for the type of hitch and type of material.

1508.0 Chain Slings

1508.1 Alloy steel chain slings shall have permanently attached durable identification stating size, grade, rated capacity and reach.

1509.0 Hand lines

1509.1 Hand lines shall be a minimum of one-half (1/2) inch diameter polypropylene.

1510.0 Pole Tongs

1510.1 Pole tongs shall be used on wooden poles only.

1510.2 Inspect pole tong gaffs each time before use.

1510.3 Pole tongs shall only be used with a captive hook on the winch line.

1510.4 Do not frame poles suspended from pole tongs.

1510.5 Pole tong gaffs should be in the 4 and 8 o'clock positions on the pole and should penetrate the pole 1/4" to 1/2".

THIS PAGE
INTENTIONALLY
LEFT BLANK

1600.0 MOUNTED EQUIPMENT

1601.0 General

1601.1 Only qualified employees shall operate powered equipment.

1601.1.1 Operators shall know and understand the capacities, limitations, loading charts and basic operating instructions for mounted equipment before operating the unit.

1601.1.2 No contact shall be made between an energized conductor or apparatus and the boom or bucket on any derrick or aerial lift.

A. Protective cover up shall be used if possible contact may occur.

B. This does not prevent the use of jib mounted hot line devices.

1601.2 Load limits specified by the manufacturer shall not be exceeded on the following:

1601.2.1 Booms,

1601.2.2 Material handling jibs,

1601.2.3 Buckets,

1601.2.4 Winch lines.

1601.3 Do not modify mounted equipment such as booms, material handling jibs, etc. without written certification by the manufacturer and written approval of Fleet Management.

1601.4 Operating and maintenance procedures specified by the manufacturer shall be followed.

1601.4.1 Do not apply any side strain to any boom or material handling jib.

1601.5 Vehicles equipped with outriggers shall be operated with the outriggers extended, when practical, and firmly set when using the boom or aerial device.

1601.5.1 Outriggers shall not be extended or retracted unless all workers are outside the range of the possible equipment motion.

1601.6 Vehicles shall not be moved unless the boom is cradled, secured and the outriggers retracted.

1602.0 Inspection

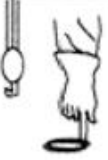
1602.1 All booms on digger derricks, cranes, material handling jibs, aerial lifts, winch lines and other lifting devices shall be inspected by the worker daily.

1603.0 Cranes, Derricks and Other Lifting Devices

1603.1 All mobile crane operators must be certified.

1603.1.1 EXCEPTION: Fleet Mechanics do not need to be certified to troubleshoot, perform maintenance, etc.

- 1603.2 No person shall be permitted to ride the hook, sling or load.
- 1603.3 Operators shall not leave their positions at the controls of cranes, derricks or other lifting devices while the load is suspended except when framing poles and other materials or when stringing wire.
- 1603.4 Operators shall not leave power take-up reels (e.g., butterfly reels, capstan) unattended when in use.
- 1603.5 Signals to the equipment operator shall be given by one person designated to perform this task.
- 1603.5.1 Operators shall obey a "Stop" signal given by anyone.
- 1603.6 Hand signals given to the operator shall conform to ANSI Standard ASME B30.5.
- 1603.7 Do not stand under a suspended load or inside the angle of a winch line.
- 1603.8 Do not guide winch lines, ropes or wire cables by hand when standing within reach of the drum or sheave.
- 1604.0 Aerial Devices Including Self Propelled Man Lifts
- 1604.1 Keep both feet on the floor of the bucket.
- 1604.2 Do not enter or exit a bucket by walking on the boom.
- 1604.3 Do not operate the lower controls without permission from the individual in the bucket except in cases of emergency.
- 1604.4 Do not ride in the bucket or on a support surface while the vehicle is moving unless it is designated by the manufacturer to be used in this manner.
- 1604.4.1 EXCEPTION: When moving or repositioning the vehicle a worker may ride in the bucket from one pole to an adjacent pole with the boom in the cradled position.
- 1604.5 Do not shock load the equipment.
- 1604.6 All tools and fittings attached to material handling jibs shall be factory supplied or approved.
- 1604.7 Exposed metal parts on the bucket end of the boom shall be guarded per manufacturer specification.

 Main Hoist	 Auxiliary Hoist	 Hoist Load	 Hoist Load Slowly	 Stop
 Raise Boom	 Raise Boom & Lower Load	 Lower Load	 Lower Load Slowly	 Emergency Stop
 Lower Boom	 Lower Boom & Raise Load	 Swing Boom	 Swing Boom Slowly	 Travel (mobile eqpt)
 Retract Boom 2 hands	 Retract Boom 1 hand	 Extend Boom 2 hands	 Extend Boom 1 hand	 Dog Everything

THIS PAGE
INTENTIONALLY
LEFT BLANK

1700.0 POWER EQUIPMENT OPERATION

1701.0 Forklifts

- 1701.1 Only trained operators shall operate a forklift truck.
- 1701.2 Forklifts shall be inspected and documented daily before being placed in service and shall not be placed in service if the inspection shows any condition affecting the safe operation of the vehicle.
- 1701.3 No alterations or modifications to forklifts or forks shall be made.
- 1701.4 Only loads within the rated capacity of the forklift shall be handled.
- 1701.5 Only stable or safely arranged loads shall be handled.
- 1701.6 Forks shall be kept as low as possible when traveling.
- 1701.7 Seatbelt shall be worn while operating a forklift.
- 1701.8 The operator and others are prohibited from placing any parts of their bodies between the uprights of the mast or outside the running lines of the truck.
- 1701.9 The operator shall have full control of the forklift and load being carried and operate at a speed that will permit it to be brought to a stop in a safe manner under all travel conditions.
- 1701.10 Personnel, other than the operator, shall not be permitted to ride on forklifts.
- 1701.11 Before driving onto trucks, trailers, and railroad cars, check for openings, cracks and weaknesses in the flooring. The truck driver must be out of the cab prior to loading/unloading.
- 1701.12 Brakes shall be set to prevent movement of trucks, trailers or railroad cars while loading or unloading.
 - 1701.12.1 Wheel chocks or dock locks shall be in place before driving the forklift onto trucks, trailers or railroad cars.
 - 1701.12.2 For trailers not attached to trucks, ratchet trailer jacks shall be used.
- 1701.13 Dockboards or bridge plates shall be properly secured before they are driven over and their capacity shall not be exceeded.
- 1701.14 The forks shall be placed under the load as far as possible when picking up a load.
 - 1701.14.1 The mast shall be carefully tilted back to stabilize the load.
- 1701.15 The operator shall be required to travel in reverse with the load trailing when the load being carried obstructs forward view.

- 1701.16 The operator shall stop, sound the horn, and proceed with caution at cross aisles and other locations where vision is obstructed.
- 1701.17 Do not raise or lower the forks, or tilt the mast while the forklift is in motion.
- 1701.18 Sufficient headroom shall be maintained under overhead installations, lights, pipes, heaters, sprinkler systems, etc.
- 1701.19 Only hand trucks shall be used on elevators.
- 1701.20 The forks shall be fully lowered, controls placed in neutral, the parking brake set and power shut off when;
 - 1701.20.1 The operator is 25 feet or more away from the forklift, which remains in his view.
 - 1701.20.2 The operator leaves the forklift and it is not in his view, regardless of distance.
- 1701.21 Loads being lifted with a forklift shall be performed with the forks placed under the load or by using a sling attached to a manufacturer supplied hook attachment that is installed on both forks. A safety chain shall be used between the attachment and the back of the forks to keep the attachment from sliding off of the forks.
- 1701.22 With the exception of material disposal, loads shall not be lifted by pinching the forks to the sides of the load with the lifting brackets or bolts directly on the forks.
- 1701.23 Industrial truck operators whose performance indicates a need for retraining shall be retrained and evaluated by a trainer with sufficient knowledge, training and experience as determined by management.
- 1702.0 Back Hoe/Trenchers/Boring Machines
- 1702.1 Trailers shall be securely attached to the towing vehicle when loading and unloading.
- 1702.2 All personnel shall stand clear during loading and unloading.
- 1702.3 The vehicle should be lined up squarely with the trailer when loading and unloading.
- 1702.4 Make sure there is sufficient clearance behind the trailer to unload.
- 1702.5 Only the operator shall ride on the equipment.
- 1702.6 Operators shall keep workers and bystanders away from the equipment when in operation.
- 1702.7 Be aware and consider the terrain being traversed.
- 1702.8 Be aware of all overhead lines and all other underground facilities.
- 1703.0 Roll Over Protection
- 1703.1 Rubber-tired, self-propelled non-roadway equipment shall be equipped with roll-over protection.

- 1703.1.1 Front end loaders,
- 1703.1.2 Mini excavators,
- 1703.1.3 Skid Steers,
- 1703.1.4 Forklifts.
- 1703.1.5 All terrain vehicles can be utilized provided,
 - A. The ATV shall incorporate roll over protection by the manufacturer if available.
- 1703.2 Such equipment shall be operated at a speed consistent with conditions which allows stopping short of any hazard.

THIS PAGE
INTENTIONALLY
LEFT BLANK

1800.0 TESTING OF PROTECTIVE COVER UP, AERIAL DEVICES AND SPECIFIC EQUIPMENT

1801.0 General

1801.1 Test dates shall be recorded and filed. The test date shall be placed on each specific item.

1801.2 Electrical test schedules not to exceed current ASTM testing periods:

1801.2.1	Equipment/Tools	Test
1801.2.2	Hot sticks	2 years
	A. Link sticks	
	B. Multiple conductor lifting devices	
	C. Range Poles / Measuring Sticks	
	D. Baker Boards	
1801.2.3	Blankets	1 year
1801.2.4	Rubber gloves	(90 days on shelf)
	A. 1kv	90 days
	B. 17kv (Class 2)	90 days
	C. 26.5kv (Class 3)	90 days
1801.2.5	Rubber Sleeves	180 days
1801.2.6	Booms, Jib Extensions used for live line work, Aerial Devices and Derricks, Back Yard Machine, including hot line hydraulic tools and hoses.	
	A. Dielectric	1 year
1801.2.7	Ground Sets & Mechanical Jumpers	1 year
1801.2.8	Load break and pick up tool	1 year
1801.2.9	Load buster tool	3 years
1801.2.10	Manhole retrieval unit	2 years
	A. And when damaged or used in rescue.	
1801.2.11	Chain Slings	1 year
1801.2.12	Mechanical test schedules not to exceed the listed periods shall be followed:	
	A. Jibs on material handling buckets	1 year

THIS PAGE
INTENTIONALLY
LEFT BLANK



Other

1900.0 COMMUNICATIONS

1901.0 Fiber Optics

1901.1 Do not look into open ends of un-terminated fibers or into parts of fiber equipment.

1901.1.1 Employees shall avoid direct exposure to invisible laser radiation which may radiate from un-terminated fiber connections.

1901.1.2 Do not look into any test equipment or any other laser source.

1901.2 Bare fiber shall be handled with extreme caution and disposed of properly to reduce injury.

1901.2.1 Dispose of bits of fibers in plastic trash bags as work progresses.

1901.3 Safety glasses shall be worn to prevent loose fiber from entering the eyes.

1901.4 Only trained personnel shall cleave and splice fiber cable.

1901.5 Do not smoke or eat food in areas where fiber optic splicing has occurred.

1901.6 Fiber splicing shall not be done in an underground vault while switching is being done.

1901.7 Take extra precautions when working with combustible cleaning agents used in fiber splicing preparation.

1901.8 Fusion splicing shall not be done in areas that restrict flammable materials.

1902.0 Radio Frequency Transmission

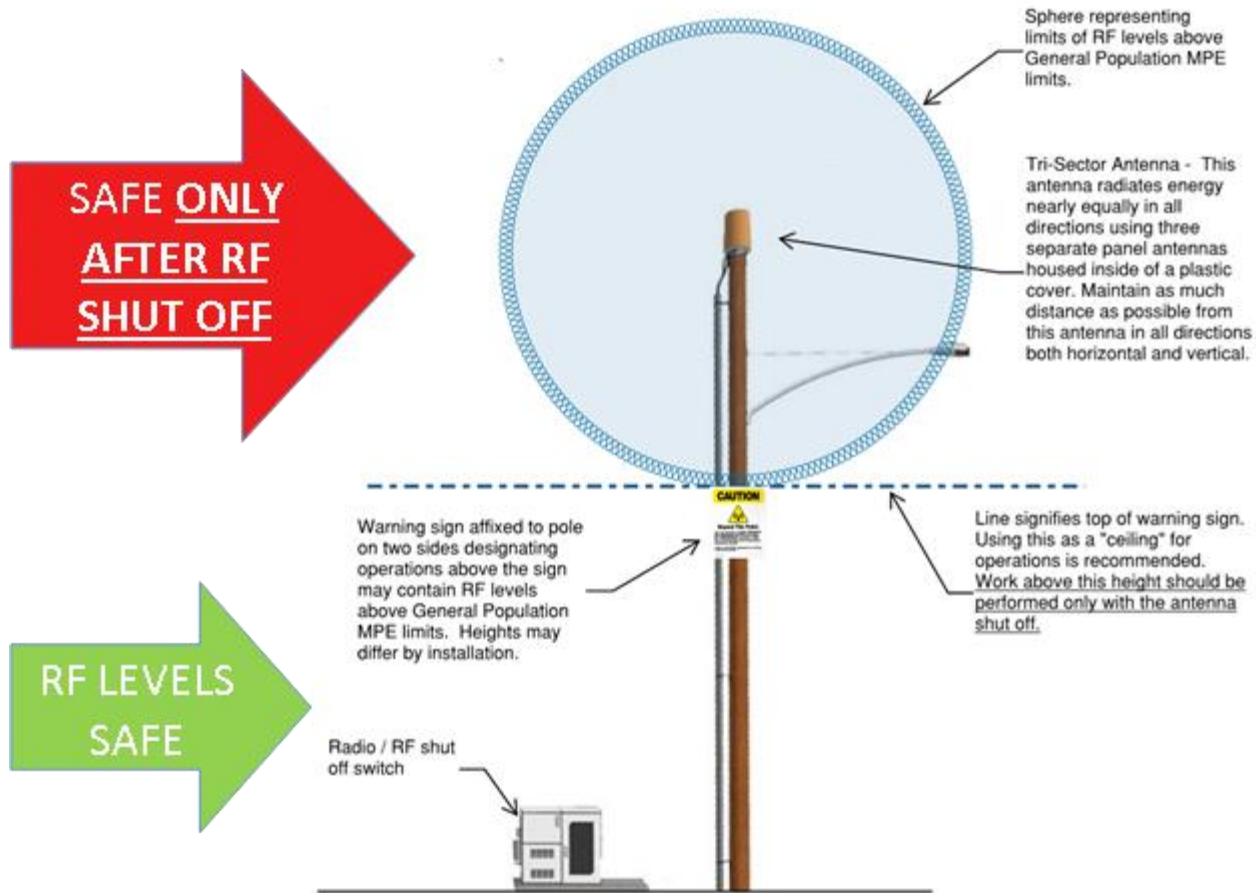
1902.1 Do not operate any RF source unterminated.

1902.2 Operations above the pole mounted warning signs on small cell antenna installations should only be performed with the antenna/ radios shut off. This includes adjacent poles within an area equal to the distance from the top of the warning sign to the top of the antenna in all directions both vertically and horizontally.

1902.2.1 Antenna/ radios shall be shut off at the Radio/RF shut off switch. Pulling the meter or killing the AC service does NOT shut the antenna/ radios off, due to battery backup.

- A. Radio/RF shutoff switch located on side of cabinet shall be placed in the off position (tamper lock can be cut).
- B. When switch is placed in the off position, Installation shall be verified de-energized by both methods listed below:
 - i DC test points shall read 0 volts DC when checked with voltmeter.
 - ii Indicator light is OFF.

- 1902.3 Information tags shall be secured in the lockout hole on the switch with employee name and contact number listed.



1903.0 Communications Towers

- 1903.1 Only trained personnel shall climb towers.
- 1903.2 All climbing personnel shall use climbing harness and safety cable.
- 1903.3 Verify grounding of tower base and guy anchors when work is to be performed.

1904.0 Site Auxiliary Power and Throw Over Units

- 1904.1 When work is to be performed inside ATOs (Automatic Throw Over), a Company issued FR clothing shall be worn.

1905.0 Propane Tanks

- 1905.1 No smoking is permitted around propane tanks.
- 1905.2 Verify the tank is grounded before filling.
- 1905.3 All leaks shall be reported to the supervisor for repairs after closing the valve.

2000.0 TRANSFORMER REPAIR

2001.0 General

- 2001.1 Only trained employees shall operate overhead hoists, transformer testing and repair equipment.
- 2001.2 Transformer Shop Safe Operating Procedures shall be followed during all operations of transformer repair.
- 2001.3 Approved safety shoes and safety eye wear shall be worn during all phases of transformer servicing and repair operations.
- 2001.4 Employees shall review and comply with all SDS requirements for safe use of chemicals and products utilized in transformer servicing, testing, and repair.
- 2001.5 Approved barricades and barriers shall be in place before electrical testing is performed.
- 2001.6 All oil spills shall be cleaned up immediately and the oil residue properly tested and disposed of according to departmental procedures.
- 2001.7 Chemical resistant gloves shall be worn when performing transformer oil servicing, sampling and testing.
- 2001.8 Employees shall exercise caution when working with transformer oil and avoid contact with eyes, skin and clothing. Hands shall be washed after work is completed and before eating, drinking, or smoking.
- 2001.9 The safe working limit of the hoist shall be clearly indicated on the hoist and shall not be exceeded.

THIS PAGE
INTENTIONALLY
LEFT BLANK

2100.0 TRANSPORTATION

2101.0 Equipment Maintenance

- 2101.1 Employees shall know and comply with the Fleet Tag Out procedures.
- 2101.2 Class 0 Rubber Gloves shall be worn when working on electric/hybrid vehicle systems 50 volts and above.
- 2101.3 Before working beneath raised hoods, tilted cabs or dump truck bodies, mechanical supports shall be checked to assure proper support.
- 2101.4 No employee shall work beneath a vehicle or other piece of equipment supported by a chain hoist or jack. Such equipment shall be supported by stands or otherwise blocked or cribbed to sustain the load.
 - 2101.4.1 All jacks and stands shall bare legible maximum weight limits.
- 2101.5 Spills shall be cleaned promptly and shall not be allowed to accumulate on floors or work surfaces.
- 2101.6 Only approved cleaning fluids shall be used on floors, parts, etc.
- 2101.7 Exhaust fumes shall be vented to the outside if it is necessary to run engines inside a closed garage.
- 2101.8 Tools, parts, hoses, etc., shall not be left in walkways where they can cause a tripping hazard.
- 2101.9 Portable floor fans shall be equipped with a grill or mesh having openings no larger than one-half inch.
- 2101.10 Hands shall be kept clear of the high pressure grease gun nozzle when in use. Employees shall make sure the top of the grease cylinder gun is securely in place, when filling a cylinder with a pressurized system.
- 2101.11 Use approved brake wash methods and appropriate personal protective equipment to minimize airborne dust.
- 2101.12 Observe the manufacturer's safety precautions while using brake pressure bleeders.
- 2101.13 Exercise proper precautions when handling brake fluid.
- 2101.14 In the event of field repairs, mechanics will not proceed with work on a vehicle or equipment until advised by the crew that all electrical hazards have been eliminated.
- 2101.15 Crimp style hose clamps shall be used to secure hose ends to tools, fittings and hose repairs. Worm style clamps are prohibited in these applications.

2102.0 Hydraulics

- 2102.1 Employees shall know and comply with the Tag Out Procedures as defined in departmental procedures.
- 2102.2 Consult manufacturer's maintenance procedures for specific instructions and warnings before attempting any hydraulic repairs.
- 2102.3 Always relieve the pressure in all hydraulic systems before beginning disassembly.
- 2102.4 Do not loosen fittings or lines when hydraulic systems are in operation or under pressure.
- 2102.5 Air pressure shall not be used to remove or cycle the cylinder rod assembly. Only a controlled source of hydraulic pressure shall be used for hard-to-move rod assemblies.
- 2102.6 Always use extreme care when removing plugs or any restriction from a hydraulic system suspected to have entrapped air that may be pressurized.
- 2102.7 Never check for hydraulic leaks with your hand, use a mirror.
- 2102.8 Hydraulic systems with a pressurized tank shall be vented slowly before removing the cap.
- 2102.9 Secure or block in place any component that may fall, close, or present additional hazard upon removal of any hydraulic component.

2103.0 Hydraulic Lifts and Jacks

- 2103.1 Only trained employees shall operate lifts. When directing vehicles over the lifts, employees shall maintain a safe clearance from the vehicle, and be cautious of tripping hazards.
- 2103.2 Before raising a vehicle, loose equipment on the vehicle shall be secured and doors closed. Overhead clearance shall be checked before raising equipment.
- 2103.3 Mechanical positive locking devices shall be used, in all lifts equipped with such devices, before any work is performed under vehicles that are on lifts.
- 2103.4 Loads shall be squarely engaged on lifts and neither the lift nor adapter shall be overloaded.
- 2103.5 Jacks shall be securely positioned on a firm surface.
- 2103.6 No work shall be done under a vehicle supported only by jacks. A vehicle on jacks shall be supported by adjustable stands or otherwise cribbed or blocked before work may begin.
- 2103.7 Each jack shall have its load rating permanently and legibly marked. No jack shall be overloaded.
- 2103.8 Every jack shall be inspected before use. Jacks shall be tested, and inspected during monthly shop inspections. Jacks that are damaged or unsatisfactory shall be tagged out-of-service, and repaired before returning to use.
- 2103.9 After jacking a vehicle up, wheels shall be chocked and brakes set.

2104.0 Tag Out of Trucks and Mounted Equipment

- 2104.1 Only authorized personnel may apply Transportation locks or tags. All other affected personnel shall be properly trained in the purpose and application of these procedures.
- 2104.2 Approved tag out devices shall be the only devices used for tagging vehicles and equipment out of service.
- 2104.3 All information required on the tag shall be properly and legibly entered.
- 2104.4 In the event work cannot be completed by the end of a shift the authorized employee in charge of the outgoing shift must document the information required for the authorized person in charge of the next immediate incoming shift.
- 2104.5 In the event the employee leaves the facility without removing his/her tag from equipment, machinery or vehicles on which work must continue, it cannot be used until the tag is removed.
 - 2104.5.1 If an authorized employee, who applied the tag device, is not available to remove it, and cannot be contacted, the lock or tag may only be removed according to the following procedure:
 - A. The supervisor and authorized mechanic will evaluate the equipment, machinery or vehicle in question to determine the reason for the tag out and any other potential hazards that may result from continuing the maintenance and/or repair, or from restarting that piece of equipment, machinery, or vehicle.

2105.0 Paint and Fiberglass

- 2105.1 Employees shall review and comply with the SDS for all paint and fiberglass products prior to application.
- 2105.2 Employees shall comply with the manufacturers' specifications for the safe application of these products including the appropriate PPE.
- 2105.3 Open flames shall not be permitted in the area where painting is being done.
- 2105.4 Adequate ventilation shall be maintained in enclosed areas where painting is being performed.
- 2105.5 Air pressure on spray guns shall be properly regulated.
- 2105.6 Paint and paint byproducts shall be stored in an approved storage area, with adequate ventilation and no excessive heat.
- 2105.7 Eyewash facilities shall be readily available and in good operational condition.
- 2105.8 Wash hands thoroughly after handling products and before eating or smoking.

- 2105.9 Paint waste and empty containers shall be properly disposed of in accordance with SDS information.
- 2106.0 Parts Washers
- 2106.1 Comply with all manufacturers' operating instructions when using any parts washer.
- 2106.1.1 Lids on parts washers shall be closed when not in use.
- 2106.2 Do not reach inside a cabinet type washer with the turntable moving.
- 2106.3 Keep the floor clean and dry around parts washers to reduce the risk of slipping or falling.
- 2106.4 Unplug or disconnect the parts washer from the power supply before attempting any maintenance.
- 2106.5 Do not operate a parts washer if it is damaged, malfunctioning, partially disassembled, or has broken parts, including a damaged cord or plug.
- 2106.6 Use only approved cleaning solutions in any parts washer.
- 2106.7 Do not introduce toxic materials, solvents, or combustible materials with a flash point below 300 degrees into an automatic cabinets parts washer utilizing heated water or solvent for cleaning. Flash points of products may be found by referring to the SDS.
- 2106.8 For cabinet type washers, allow heated parts time to cool before handling.
- 2107.0 Tires
- 2107.1 Only trained employees shall repair tires.
- 2107.1.1 Comply with all manufacturer's specifications and industry instructional materials when changing or servicing tires.
- 2107.2 Only use approved tire tools for dismounting and mounting tires.
- 2107.3 A tire shall be completely deflated before dismounting from the rim.
- 2107.4 All tires mounted on two-piece bolted rims, such as forklift tires, shall be fully deflated before removing the tire from the hub.
- 2107.5 Tires mounted on two-piece bolted rims shall not be inflated to more than 50% of the rated psi prior to mounting on a hub.
- 2107.6 Bent, broken, or damaged tire rims shall not be used and shall be disposed of properly.
- 2107.7 Do not weld, heat, or braze any rim parts for any reason.
- 2107.8 Do not use starting fluid, ether, gasoline, or other explosive material to lubricate, seal, or seat the beads of a tubeless tire.
- 2107.9 Never inflate beyond 5 psi before placing the tire/ rim in an approved restraining device (cage).

- 2107.10 Use a clip-on air chuck with gauge while inside the restraining device (cage). Do not rest or lean any part of the body against the restraining device (cage) during inflation.
- 2107.11 Never inflate beyond inflation pressure specified on the tire.
- 2107.12 Inspect proper seating of all parts before removing from restraining device (cage).
- 2107.13 If a tire must be changed in the field, wear appropriate PPE and ensure the vehicle shall be a safe distance from passing traffic. Reflectors, flares, or other warning devices shall be used in addition to a traffic cone taper to alert oncoming traffic.
- 2107.14 If work must be done on a vehicle near energized lines, all instructions of a qualified person in charge shall be followed, consistent with safe work practices.
- 2107.15 Internal plug patches shall be used as a permanent repair for on road vehicles. Externally installed plugs may only be used for off road vehicles.
- 2107.16 "Fix-A-Flat" or other tire chemical inflators shall not be used to repair or re-inflate flat tires.
- 2108.0 Automotive Batteries
- 2108.1 Only trained employees shall jump start a vehicle.
- 2108.2 Charging Batteries and Battery Charging Stations
 - 2108.2.1 Battery charging shall only be performed by trained employees.
 - 2108.2.2 Battery charging areas shall be designated as such and shall have:
 - A. Emergency eyewash facilities
 - B. Facilities for flushing and neutralizing spilled electrolyte
 - C. Fire protection
 - D. Ventilation for fume dispersal
 - E. Protection for charging apparatus from vehicle damage.
- 2109.0 Generators and Inverters
- 2109.1 Truck mounted electrical generators and inverters shall have:
 - 2109.1.1 The noncurrent carrying parts and equipment grounding conductors bonded to the generator or inverter frame.
 - 2109.1.2 The frame of the generator or inverter bonded to the frame of the vehicle.
 - 2109.1.3 The neutral conductor bonded to the generator or inverter frame.
 - 2109.1.4 All receptacles shall be permanently affixed to the generator, inverter or the truck.

THIS PAGE
INTENTIONALLY
LEFT BLANK