ASSOCIATED ELECTRIC COOPERATIVE INC.
NEW MADRID POWER PLANT

CONTRACTOR SAFETY MANUAL

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INTRODUCTION

One of the major objectives of Associated Electric Cooperative, Inc. is to protect the health and safety of individuals involved in work on AECI property. To attain this goal AECI has established a comprehensive Safety and Loss Control program.

This manual is intended to coordinate job site safety between contractors, subcontractors, delivery personnel, and AECI employees. The efforts outlined in this program require the safety awareness and active cooperation of each person on the job. AECI asks for and expects the help of all contract personnel in making this a safe jobsite.

All contract personnel should become familiar with the contents of this manual and use it as a guide to help perform work as safely as possible.

The best possible efforts have been made to assure compliance with current Federal, State, and Local Regulations. Where inconsistencies are found, current regulations will prevail.

TABLE OF CONTENTS

	Page
I. General Safety Rules	1
II. First Aid and Medical Services	1
III. Hazardous Materials	1
IV. Personal Protective Equipment	2
V. Fall Arrest Systems	2
VI. Fire Protection and Prevention	3
VII. Housekeeping	4
VII. Material Handling	4
VIII. Rigging	4
IX. Hand and Power Tools	5
X. Welding and Cutting	5
XI. Electrical Safety	6
XII. Tagging/Energy Control	7
XIII. Scaffolding	9
XIV. Floor And Wall Openings	9
XV. Cranes, Hoist, Elevators, and Conveyors	9
XVI. Motor Vehicles and Equipment	10
XVII. Excavations and Trenching	11
XVIII. Ladders	11
XIX. Compressed Gas Cylinders	11
XX. Permit Required Confined Spaces Entry	11

I. GENERAL SAFETY RULES

A. Contractor Requirements

1. The Contractor shall provide a work place that is free of hazardous, unsanitary or dangerous conditions for all employees.
2. The Contractor is responsible to initiate and maintain such accident prevention programs, hazardous material programs, and other programs as may be necessary to comply with Federal, State, and Local regulations while performing work on Associated Electric Cooperative Inc.'s (AECI's) property.
3. The Contractor is responsible to assure that all subcontractors and contractor's employees abide by the safety rules and regulations established by AECI while on AECI's property.

II. FIRST AID AND MEDICAL SERVICES

1. The Contractor is expected to provide standard first aid treatment for its own employees. AECI has an on-site ambulance and trained Emergency Medical Technicians (EMT's) to assist with injuries requiring treatment beyond standard first aid, and/or transport.
2. In the event a serious injury occurs requiring medical assistance, the contractor should call the Control Room Operator via Gai-tronics, or by phone (573)-643-2211, extension 200.
3. Do not move the injured person unless absolutely necessary.
4. Do not treat serious injuries yourself. Get advice and treatment from the aid station.
5. If an injury or illness, that is severe enough to warrant the attention of a physician, and it is determined by the Contractor to be work related, the Contractor should supply a copy of an employee injury report to the Safety Office.

III. HAZARDOUS MATERIALS

A. Asbestos

1. Asbestos containing materials are known to exist at the New Madrid Power Plant.
2. No insulating material, packing, or gasket material may be removed or disturbed by any contractor without prior approval from AECI.
3. Only properly trained and qualified individuals may remove asbestos containing materials.
4. All insulating material, packing, or gasket material will be assumed to contain asbestos unless there is documented evidence that it is not asbestos.

B. Lead

1. Lead containing materials are known to exist at the New Madrid Power Plant.
2. No painted structural material may be scraped, cut, heated or welded on by any contractor without prior approval from AECI.
3. Only properly trained and qualified individuals may remove lead coated or containing materials.
4. All painted steel materials or architectural panels shall be assumed to contain lead paint coatings unless there is documented evidence that it is not.

C. Anhydrous Ammonia

The New Madrid Power Plant has a Selective Catalyst Reduction (SCR) system on each of two units. These systems use liquid anhydrous ammonia to react with a catalyst to remove NO_x from the flue gas before it is emitted into the atmosphere. The New Madrid Power

Plant has the capability to store 480,000 gallons of liquid anhydrous ammonia on site. The New Madrid Power Plant is subject to OSHA's Process Safety Management regulation and EPA's Risk Management Planning regulation. All contractors are required to complete a plant safety orientation at least annually to comply with these regulations

IV. PERSONAL PROTECTIVE EQUIPMENT

A. Head Protection

All contract employees; subcontractors, visitors, and delivery personnel are required to wear protective helmets while on AECI property. These protective helmets shall comply with ANSI Z89.1-1986.

B. Hearing Protection

All contract employees, subcontractors, visitors, and delivery personnel are required to wear appropriate hearing protection to reduce time weighted average exposure levels of noise to within OSHA permissible exposure limits.

C. Eye and Face Protection

All contract employees, subcontractors, visitors, and delivery personnel are required to wear as a minimum; safety eyeglasses with side shields. More specialized eye protection should be required when the work being performed warrants additional protection. All eyewear shall meet ANSI Z87.1-1989 standards.

D. Respiratory Protection

Respiratory protection that conforms to OSHA regulations shall be used when engineering controls are not adequate to protect employee from exposure to air contaminants. No Contact employee may be assigned to wear a negative pressure respirator unless a physician to determine his or her physical ability to wear the respirator has first evaluated him.

E. Foot Protection

Steel toe safety shoes or boots, complying with the ANSI-Z41-1991 standard, are recommended for all workers. Sneakers, sandals or canvas shoes are not permitted.

V. FALL ARREST SYSTEMS

A. Fall Arrest Systems

1. Personal fall arrest systems shall be rigged such that an employee can neither free fall more than 6 feet, nor contact any lower level.
2. When stopping or arresting a fall, personal fall arrest systems shall limit the maximum arresting force on an employee to 1800 pounds (8kN) if used with a body harness (if the total combined weight of the employee and his tools is equal to or less than 310 pounds.)
3. Personal fall arrest systems, when stopping a fall, shall bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet.
4. Anchorages used for attachment of personal fall arrest equipment shall be capable of supporting at least 5,000 pounds (22.2 kN) per employee attached.
5. Personal fall arrest systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.

6. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for use.
7. Personal fall arrest systems shall **not** be attached to guardrail systems.
8. Body belts are **not** acceptable as part of a personal fall arrest system.
9. Safety harnesses, lifelines, and lanyards shall be used only for employee safeguarding.

B. Safety Nets

Safety nets shall be provided when work places are more than 25 feet above the ground, water surface, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines or safety harnesses is impractical.

Note: All fall arrest systems and safety net systems shall meet or exceed all OSHA specifications.

VI. FIRE PROTECTION AND PREVENTION

A. Fire Protection

AECI provides, inspects, and maintains, sufficient fire protection systems and equipment to protect exposures in the permanent plant facilities. AECI employees are trained in the operation and use of these systems and equipment. In addition, AECI has a trained Emergency Response Team (ERT) to provide more comprehensive fire suppression skills.

Contractors working in the permanent plant facility are responsible for the following:

1. Report all fires to the Control Room Operator (CRO), no matter how small, via the plant intercom (Gai-Tronics) or by phone extension 200.

    a. Do not be the first to hang up, allow the CRO to get all necessary information.
    b. Give the exact location of the fire and type of material burning, if known.
    c. If safe to do so, stay in the area and direct trained plant personnel to the fire location.
2. Provide Plant personnel with locations and type of all combustible or flammable materials brought on to AECI property.
3. The CRO announces all fires over the Gai-Tronics by an electronic alarm followed by voice communication. Contract personnel should avoid the area where the fire is located until the CRO announces the all clear.
4. Should a plant evacuation be necessary, the CRO will sound an electronic alarm followed by voice communication. Contract personnel will evacuate immediately to an area designated by AECI. Contract supervision is responsible for a roll call of all personnel, and should report all present, or any missing personnel with last known location to AECI Incident Commander.

Contractors involved in new construction or construction at a remote location (away from the plant structures area) is responsible to:

1. Comply with A.1 thru 4 above and provide fire protection equipment of the proper type and quantity to protect the construction site, equipment, and materials.
2. If Plant ERT assistance is needed; the contractor should call the CRO, report the fire, and request assistance. This may be done by using the plant intercom system (Gai-Tronics) or by telephone (573) 643-2211, extension 200, or by radio. If using radios, contact the Plant Safety Coordinator for radio frequencies.

B. Fire Prevention

1. All contract personnel shall practice good housekeeping and will not allow combustible scrap or refuse to accumulate in the areas they are responsible for.
2. Obey all posted no smoking areas and do not smoke in areas where combustible or flammable material is in use.
3. Store oily, paint-soaked, or solvent-soaked rags in covered metal containers.
4. Cut or weld only when permitted to do so.
5. Store flammable liquids in proper containers, and use proper bonding and or grounding when transferring fuels.
6. Report all fire hazards to the owner's representative.

VII. HOUSKEEPING

1. Keep aisles clear for safe passage of people and material.
2. Clean up slippery substances, such as grease or oil spilled on floors or other work surfaces. Cover with sand or other non-slip material.
3. Keep tools in boxes, racks, or trays when not in use.
4. Nails, pieces of wood with protruding nails, and other sharp objects should not be left on floors and walkways. Store them where they cannot be stepped on.
5. Keep exits clear.
6. Keep fire extinguishers, fire hose stations, and sprinkler valves readily accessible and free of obstruction.
7. Do not let materials such as scrap lumber; metal, and debris accumulate which might cause a tripping hazard.
8. Dispose of empty bottles, cans, paper, and other containers by depositing them into the receptacles provided.

VIII. MATERIAL HANDLING

1. Use proper lifting techniques when handling materials.
2. Stored materials must not block exits, aisles, fire protection equipment, or passageways.
3. Material stored inside buildings or structures under construction must not be placed within 6 ft. of any hoist way or other inside floor opening or within 10 ft. of an interior wall which does not extend above the top of the material stored.
4. Pipe, conduit, and bar stock should be stored on racks or stacked and blocked to prevent movement.
5. The quantity of materials stored on scaffolds, platforms, or walkways must not exceed what's required for 1 day's operation.
6. Materials must never be thrown or dropped from a distance of more than 20 ft. The drop area must be barricaded to protect personnel from being struck by falling materials. Trash chutes are required for dropping materials from heights above 20 ft.
7. Protruding nails must be bent or pulled when stripping forms or uncrating material.
8. Employees required to work on or in hoppers, bins, silos, tanks, chutes or similar storage areas that contain material subject to engulf or entrap shall be equipped with lifelines.

IX. RIGGING

1. Rigging equipment shall be inspected prior to use on each shift. Defective rigging shall be immediately removed from service.
2. Rigging equipment shall not be loaded in excess of recommended working load limits.
3. Wire rope shall be removed from service if there is a marked reduction in rope diameter, excessive broken wires, kink damage, or other mechanical damage.
4. Never strain wire rope over sharp corners.

5. Remember that increasing the angle between the legs of a sling increases the load on each leg.
6. Do not paint hooks.
7. Only qualified personnel may be assigned to rigging operations.

X. HAND TOOLS AND POWER TOOLS

1. All hand and power tools and similar equipment, whether issued by the employer or furnished by the employee, shall be maintained in safe condition.
2. Wrenches shall not be used when jaws are sprung to the point that slippage occurs.
3. Impact tools, such as drift pins, wedges, chisels, etc. shall be kept free of mushroomed heads.
4. Wooden handles shall be free of splinters, cracks, and be tight in the tool.
5. Electric-powered tools shall either be of the approved double insulated type or grounded in accordance with OSHA requirements.
6. Any power-operated tools designed with guards shall have the guard in place when in use.
7. The use of electric cords for hoisting or lowering tools is not permitted.
8. Only trained employees are allowed to operate powder-actuated tools.
9. All powder-actuated tools shall be tested daily, and all defects are corrected before use.
10. All defective tools and equipment must be reported immediately to your supervisor and tagged “out of service”.
11. Floor stand and bench-mounted grinders shall be provided with properly adjusted work rests and grinding wheel guards.
12. Abrasive wheels and tools shall comply with ANSI B7.1-1970, safety code for use, care, and protection of abrasive wheels.
13. All employee using abrasive wheels shall be protected by eye protection equipment appropriate to the equipment and task being performed.

XI. WELDING AND CUTTING AND OTHER “HOT” WORK

No “HOT” work is permitted at the New Madrid Power Plant in the presence of flammable or combustible materials. AECI uses the “Hot Work” permitting system for all heat or spark producing operations except in those areas designated by AECI as safe areas. **No “Hot Work” shall be permitted in any coal handling area without a “Hot Work” permit.**

A. Hot Work Permits

1. Hot work permits are required for any temporary operation involving open flames, or producing heat and/or sparks. This includes, but is not limited to, brazing, cutting, grinding, soldering, thawing pipe, torch applied roofing, and welding. (See attached Appendix A – AECI Hot Work Permit.

B. Gas Welding and Cutting Safety

1. Valve protection caps shall be in place when moving, transporting, and storing compressed gas cylinders.
2. Cylinders shall be secured on a cylinder truck by chain or other steadying device while in use.
3. Cylinders containing oxygen, acetylene, or other fuel gas shall not be taken into confined spaces.
4. No defective or damaged cylinders shall be used.
5. Fuel gas hose and oxygen hose shall be easily distinguishable from each other, without defects, and fitted with rotary motion disconnect fittings.
6. Torches shall be inspected at the beginning of each work shift. Defective torches shall not be used.

7. All torches shall be fitted with approved flashback control devices.
8. Torches shall only be lighted by friction lighters or other approved devices, and not by matches or from hot work.

C. Arc Welding and Cutting

1. Welding cables and connectors:
   a. All welding, cutting cables and connectors shall be on a completely insulated and flexible type capable of handling the maximum current requirements of the work in progress.
   b. Only cable free from repair or splices for a minimum of 10 ft. from the end to which the electrode is connected shall be used, except that insulated connectors or splices whose insulating quality is equal to that of the cable are permitted.

   Note: Any faulty or defective machines, cables, or electrode holders must be removed from service and reported to the supervisor.

XII. ELECTRICAL SAFETY

A. General Requirements

1. All construction electrical installations and temporary wiring shall be made in accordance with the National Electric Code ANSI/NFPA latest edition.
2. Temporary lights will be equipped with guards. Broken or burned out bulbs should be replaced.
3. Temporary electric cords must be covered or elevated. They must be kept clear of walkways where they may be exposed to damage or create tripping hazards.
4. All temporary electrical circuits shall be periodically inspected and properly maintained.

B. Safety Related Work Practices

1. No employer shall permit an employee to work in such proximity to any part of an electrical power circuit that the employee could contact the electrical power circuit in the course of work unless the employee is protected against electrical shock by de-energizing the circuit and grounding or guarding it effectively by insulation or other means.
2. In work areas where the exact location of underground electrical cables is unknown, employee using jackhammers, bars, or other hand tools, which may contact a line, shall be provided with insulated protective gloves. All insulated protective gloves must be tested prior to use, in accordance with the National Electric Code.
3. Before work is begun the employer shall ascertain by inquiry, direct observation, or instruments, whether any part of an energized electrical power circuit, exposed or concealed is located so that the performance of the work may bring any person, tool, or machine into physical contact with the circuit. The employer shall post and maintain proper warning signs where such a circuit exists. The employer shall advise employees of the location of such line, the hazards involved, and the protective measures to be taken.

   NOTE: AECI is subject to the Power Generation and Transmission OSHA Standard 29 CFR 1910.269. Contractors working on AECI premises may also be subject to portions of this regulation.

XIII. TAGGING/ENERGY CONTROL

A. AECI's Tagging/Energy Control Procedure

1. Controls that are to be deactivated during the course of work on equipment or circuits, shall be tagged in accordance with AECI's Tagging/Energy Control Procedure.
2. Equipment or circuits de-energized shall be rendered inoperative and shall have tags attached at all points where such equipment or circuits can be energized.
3. The primary purpose of the Tagging/Energy Control Procedure is to provide protection to employees working on mechanical and/or electrical equipment. It is a method to remove or withhold equipment from service thereby:
    a. Preventing switches, valves, or other devices from being operated which could cause injury to employees working on de-energized equipment.
    b. Identify the boundary of the cleared zone.
    c. Preventing damage to equipment.
    d. Preventing all persons who are not signed on tagging from entering the protected area.

B. Responsibilities – Definitions

1. The Supervisory Authority is designated by the plant manager to be responsible for plant tagging protection.
2. The Operating Authority is a supervisor authorized by the Supervisory Authority to issue, place and remove tags. The Operating Authority may assign qualified personnel to place or remove tags.
3. The Official Tagging List, available in the control room and coal yard office, contains the names of persons authorized to request tagging from the Operating Authority.

C. Description of Tags and Forms

1. A **Clearance Tag Listing** is the approved form that contains the work description, tagging directives, and lines for authorized persons to sign on and off tagging protection.
2. A **Group Tagging Form** is the approved form used as a supplement to the Clearance Tag Listing. It provides alternative means for groups of workers to sign on the tagging protection. Group Tagging forms will be issued to all personnel designated by the Supervisory Authority.
3. A **Danger Tag** (White with Red Stripe) is issued to permit work on electrical and/or mechanical equipment that has been de-energized, or by means of the operation being blocked.
4. A **Caution Tag** (Yellow) is used for precautionary information only, and provides no personnel protection.
5. Only approved tags with a non-reusable self-locking attachment device shall be used.

D. Tagging Requests and Placement

1. Authorized persons, requiring protection, shall request tagging from the Operating Authority.
2. The Operating Authority provides the Clearance Tag Listing form and required tags. Each person working on tagged equipment must legibly sign his or her name, and AECI ID # or contractor name, on the Clearance Tag Listing or Group Tagging Form. Additionally, the employee shall legibly sign his or her name, and AECI ID # or contractor name on the Employee Responsible line of the Group Tagging form.
3. The Operating Authority or designated person will hang the tags and initial the "Posted By" box on the clearance Tag Listing form. At least one authorized person who will be signing on the Clearance Tag Listing form shall visually verify the equipment is isolated

and that tags are properly placed, and initial the "Verified Box" on the Clearance Tag Listing form. All personnel who sign on tagging are authorized and will be allowed to verify tagging protection. The Group Tagging form is the responsibility of the person to whom it is issued and shall be signed by all members.
4. After all tags are verified, work may begin.

E. Removing Tagging Protection

1. When work in the protected zone is completed, each authorized person shall sign off the Clearance Tag Listing form on the line opposite his signing on line. He cannot re-enter the protected work area for any reason, unless he again signs on a new entry line.
2. Before tagging protection is removed:
    a. The Operating Authority shall check that all authorized persons who signed on the Clearance Tag Listing form and any affiliated Group Tagging forms have signed off; and
    b. The Operating Authority (or designate) shall inspect the work area to ensure that all persons have been safely positioned or removed, that non-essential items have been removed, and that machine or equipment components are operationally intact.
3. If an authorized person is not available to sign off his name, the Supervisory Authority must direct the release of the tagging protection in accordance with OSHA standards.
4. Tags will be removed by the Operating Authority (or designate).
5. All tags will be returned to the Operating Authority. He shall check each tag against the Clearance Tag Listing, and then destroy all used tags. Tags shall not be reused. Tagging protection forms, including Clearance Tag Listing and Group Tag will be maintained for one year.

F. New Facility Construction

1. The contractor may use any form of lock-out/tagging that complies with OSHA standards for new facility construction that is outside of, and not connected to permanent facilities, until such equipment or facilities are accepted by AECI.
2. Warranty work or modifications performed after acceptance will be performed under AECI tagging protection.
3. Final connections whether mechanical or electrical will be made under AECI tagging protection procedures.

XIV – SCAFFOLDING

1. All scaffolds shall be erected in accordance with appropriate OSHA standards for the type and application used.
2. The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement.
3. Guardrails, mid rails, and toe boards must be installed on all open sides of scaffolds 10 feet or more in height. Guardrails must be 2 X 4 inches or equivalent, supported at intervals of not more than 8 feet. Toe boards shall be a minimum of 4 inches in height.
4. Where persons are required to work, or pass under, the scaffolds shall be provided with a screen between the toe board and rail, extending along the entire opening, consisting of #18 gauge U.S. standard wire ½ inch mesh or equivalent.
5. Overhead protection shall be provided if employee working on scaffolds is exposed to overhead hazards.
6. Scaffold and its components shall be capable of supporting without fail at least 4 times the maximum load intended.
7. Any scaffolding including all accessories, damaged or weakened from any cause shall be immediately repaired or replaced.

8. All planking shall be scaffold grade as recognized by approved grading rules for the species of wood used, and of full 2 X 10 thickness.
9. An access ladder or equivalent safe access shall be provided.
10. Scaffold planks shall extend at least 6 inches but no more than 12 inches over the end of the support.
11. All scaffolds must be two planks wide; no employee may work from a single plank.
12. Scaffold planks must be visually inspected before use. Damaged planks must be removed from service.
13. Scaffold must be tied to the building or structure at intervals, which do not exceed 30 feet horizontally, and 26 feet vertically.

XV. FLOOR AND WALL OPENINGS

1. A standard rail and toe board or cover shall guard floor openings. In general the railing shall be provided on all exposed sides, except at entrances to stairways.
2. All openings from which there is a drop of more than 4 feet and the bottom of the opening is less than 3 feet above the working surface will have a standard guardrail.
3. Open sided floors or platforms 6 feet or more above the adjacent floors or ground level and runways 4 feet or more above the ground floor level shall be provided with standard handrails and toe boards.
4. Stairways having four or more risers shall be equipped with standard stair railing on both sides.

XVI. CRANES, HOISTS, ELEVATORS & CONVEYORS

A. Cranes

1. All cranes must be operated and maintained in accordance with established standards, specifications, and limitations.
2. Rated load capacities and recommended operating speeds, special hazard warnings, or instruments shall be conspicuously posted.
3. Cranes shall be inspected prior to use each shift. Records of inspections shall be kept as required by law.
4. Hand signals to crane operators shall be according to ANSI standards for the type of crane in use.
5. Accessible areas within the swing radius must be barricaded.
6. Do not ride hook or load.
7. Safety latches are required on all crane hooks.
8. Do not operate crane or bring its loads within 10 feet of electrical distribution lines.
9. The use of a crane to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling or conventional means of reaching the work site would be more hazardous or is not possible because of structural design or work site conditions. The following precautions are required when using cranes to hoist personnel:

    a. Hoisting of the personnel platform shall be performed in a slow, controlled manner with no sudden movements of the crane platform.
    b. Load lines shall be capable of supporting without failure at least ten times the maximum intended load.
    c. A trial lift with the unoccupied personnel platform loaded at least to the anticipated lift weight of personnel and material shall be made from the ground level with full crane operational tests. The trial lift shall be repeated prior to hoisting personnel any time the crane is moved and set up in a new location or returned to a previously used location. In every case, the trial lift must be conducted at the beginning of every shift.
    d. Work Practices

1) Employees shall keep all body parts inside the platform during raising, lowering, or positioning.
2) Employees being hoisted shall remain in continuous sight of and direct communication with the crane operator.
3) Employees occupying the personnel platform shall use a body harness system with the lanyard attached to the lower load block, overhaul ball or structural member within the platform.
4) Hoisting of employees while the crane is traveling is prohibited.

B. Elevators

1. Elevators provided by the contractor for material or personnel shall be installed and operated in accordance with all applicable Local, State and Federal regulations.
2. Contractors may use AECI provided elevators for hoisting personnel and material with the following regulations:
    a. Posted weight limits must not be exceeded.
    b. No loads or material may extend through elevator maintenance hatchways at any time.
    c. Do Not attempt to escape from stuck or stopped cars. Call the Control Room Operator (CRO) on the plant intercom phone in the car. Notify him/her of your situation and wait until the CRO sends assistance.

C. Conveyors

1. Conveyors must be provided with a means of stopping the motor at the operator's location.
2. Conveyors must be provided with an audible warning signal to be sounded prior to starting the conveyor.
3. If the operator's station is a remote location, stop switches shall be provided that will stop the motor. The conveyor switches must be so arranged that the conveyor may not be restarted until the actuating switch has been reset.
4. All conveyors in use shall meet the applicable requirements for design, construction, inspection, testing, maintenance, and operation as prescribed in the ANSI B20.1-1957.

XVII. MOTOR VEHICLES AND EQUIPMENT

A. Contractors may not drive privately owned vehicles on AECI property unless the vehicles are covered by the contractor's liability insurance. Proof of coverage must be provided to the Protective Services Department prior to vehicle entry to AECI property.

1. The parking brake must be set whenever the vehicle is parked. Equipment parked on an incline must have the wheel chocked.
2. Seat belts must be provided and used on all vehicles and equipment on AECI property.
3. Do not ride on the bed of trucks containing materials that are not properly secured to prevent movement.
4. All personnel are prohibited from riding on loads, fenders, running boards, and tailgates or with arms or legs dangling over the side.
5. Drivers must not move vehicles until riders comply with all safety rules.
6. Do not back up vehicles when the view to the rear is obstructed unless:
    a. It is equipped with an audible back up alarm, which is audible above the surrounding noise for a distance of 200 feet.
    b. An observer signals it is safe to do so.
7. Obey posted speed limits.

XVIII. EXCAVATIONS AND TRENCHING

A. All excavations and trenching operations must conform to established regulations and standards.
B. Sides of excavations in unstable or soft material or more than 5 feet in depth shall be shored, sloped, or otherwise supported.
C. When employees are required to work in trenches 4 feet or more deep, an adequate means of egress shall be provided so as to require no more than 25 feet of lateral travel for employees.
D. Never pile soil or material closer than 2 feet from the edge of excavations.
E. Walkways with standard guardrails must be provided where employees are required to cross over excavations or trenches.
F. Daily inspections of excavations shall be made by a competent person for evidence of a situation that could result in cave-ins, indications of protective systems, failures, hazardous atmospheres, or other hazardous conditions. Inspections shall also be conducted after every rainstorm or other hazard-increasing occurrence. These inspections are only required when employee exposure can be reasonably expected.

XIX. LADDERS

A. All ladders shall be inspected for defects prior to use. Any defective ladder should be removed from service and reported to your supervisor for repair or replacement.
B. Portable ladders shall be placed on a substantial base on a 4:1 pitch, have clear access at top and bottom, and extend at least 36 inches above the landing and be secured against movement when in use.
C. Always face the ladder and use both hands when climbing up or down. If you have to raise or lower tools, use a line.
D. Do not use metal ladders for electrical work or where they may contact electrical conductors.
E. Do not use stepladders as straight ladders.
F. Avoid over reaching when working from ladders.

XX. COMPRESSED GAS CYLINDERS

A. The protective caps of gas cylinders must be kept on all cylinders when not in use.
B. All cylinders must be properly secured to prevent tipping.
C. All gas cylinders whether in use or in storage must be secured in an upright position by some substantial means such as chains or ropes.
D. Oxygen and fuel gas cylinders in storage must be separated from each other by a separation of 20 feet or by a 5-foot high barrier wall that has a minimum 1-hour fire rating.
E. Compressed gas cylinders shall not be taken into confined spaces.

XXI. PERMIT-REQUIRED CONFINED SPACES

A. Contractors shall not enter spaces designated as permit required confined spaces, except under the following conditions:

    1. A written entry permit is obtained from the contract administrator.
    2. Only contract employees who have been trained in compliance with OSHA confined space standard 29 CFR 1910.146 may enter permit required confined spaces.
    3. Only trained attendants shall be used to monitor permit required confined spaces while authorized entrants are inside.

4. Should confined space rescue or emergency services be needed, they may be obtained by calling the Control Room Operator on the plant intercom system (Gai-tronics) or by calling (573) 643-2211, ext. 200.