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Jim Gray
SECRETARY

OFFICE OF THE SECRETARY
OFFICIAL ORDER 113948

SUBJECT: *Safety and Health Administration Guide*

This manual has been prepared to provide information and guidance to personnel of the Kentucky Transportation Cabinet. Its purpose is to establish uniformity in the interpretation and administration of laws, regulations, policies, and procedures applicable to the operation of the Secretary's Office of Safety and its relationship with other units of the Cabinet.

The policies and procedures set forth herein are hereby approved and declared effective unless officially changed.

All previous instructions, written and oral, relative to or in conflict with this manual are hereby superseded.

Signed and approved this 5 day of March, 2025.

DocuSigned by:
9DC832F7B94544E...
Jim Gray
Secretary

Approved as to Legal Form
Signed by:
William Fogle
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Office of Legal Services

SAFETY & HEALTH ADMINISTRATION GUIDE

TEAM KENTUCKY®
TRANSPORTATION CABINET
Secretary's Office of Safety

ISSUED BY

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET

MARCH 2025

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Produced by Organizational Management Branch
Office of Human Resource Management

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ADMINISTRATION GUIDE

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ADMINISTRATION GUIDE

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ORGANIZATION & NUMBERING

Chapters—The subject matter in the guide is divided into chapters (100, 200, 300). The chapter title appears in the upper right corner of the first page of a subject and in the upper left corner of subsequent pages.

Sections—Some chapters are divided into sections. Each section title, instead of chapter title, appears in the upper right corner of the first page of a subject and in the upper left corner of subsequent pages.

Subjects—Chapters and sections are arranged by subjects.

Subject Number—Each subject is assigned a number, which appears in the upper right corner of each page of the subject. For example, Chapter 400 includes Subject 405 followed by Subject 406, which is divided into Sections 406-1 through 406-2.

"SHA" Prefix—Preceding each subject number, this prefix stands for the manual title *Safety and Health Administration Guide*.

Subject Title—The subject title appears in the upper right corner of the first page of a subject and in the upper left corner of subsequent pages.

Date—The latest issuance date of a subject appears at the bottom of each page of the subject. This date agrees with the latest issuance date shown for the subject in the "Table of Contents" (**SHA-01**).

Page Numbering—Each subject has its own page numbering, which appears at the bottom of each page.

LOCATING INFORMATION

Two indexes appear at the front of the guide, and one index appears at the back:

Table of Contents (SHA-01)—This index at the front lists the titles of the guide's chapters and sections and their subjects, as well as other information, in numerical order. It includes the latest issuance dates of all the subjects. As the guide matures, these dates change.

LOCATING INFORMATION (CONT.)

List of Figures & Tables (SHA-02)—This index at the front lists the titles of the guide's figures and tables in numerical order, and their locations within the guide by section number.

Table of Exhibits (SHA-9000)—This index at the back lists the guide's exhibits, including forms, worksheets, diagrams, etc., by number and title.

CROSS-REFERENCES

A boldfaced subject number that appears within the text references the location of more information about the subject.

QUESTIONS

For questions regarding the information or processes contained in this administration guide, contact:

Secretary's Office of Safety
Transportation Cabinet Office Building
200 Mero Street
Frankfort, KY 40622

For questions regarding the online version of this administration guide or to request physical copies, contact:

Organizational Management Branch
Office of Human Resource Management
Transportation Cabinet Office Building, 6th Floor West
200 Mero Street
Frankfort, KY 40622

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Purpose & Overview

PURPOSE & SCOPE

Addressing every possible condition encountered by every class of employees is not within the scope of this manual. Therefore, these rules are intended to outline the fundamental principles which should be observed in carrying out the Kentucky Transportation Cabinet's (KYTC) work in a safe manner. It must be remembered that the direct supervisor and employees are responsible for making "good judgment" decisions in the application of the information contained in this manual.

For any operation or activity not covered in this manual, refer to the following sources:

- Kentucky Administrative Regulations, including 803 KAR 2
- US Code of Federal Regulations
  - 29 CFR 1910, *General Industry*
  - 29 CFR 1926, *Construction*
  - 29 CFR 1915, 1917, 1918, *Maritime*
  - 29 CFR 1928, *Agriculture*
- National consensus standards
- American National Standards Institute (ANSI)
- *Manual on Uniform Traffic Control Devices* (MUTCD)
- KYTC *Standard Drawings*
- Manufacturer-applicable rule, regulation, policy, law, or standard

Note: Within this manual, the term "KYTC safety personnel" refers to safety specialists, safety coordinators, and safety administrators.

AUTHORITY

The *Occupational Safety and Health Act of 1970* requires employers to furnish employees a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm.

The Commonwealth of Kentucky has implemented a statewide Occupational Safety and Health Administration (OSHA) program [Kentucky Occupational Safety and Health (KOSH) Program (KRS 338)] and is responsible for the enforcement of occupational safety and health standards in Kentucky.

AUTHORITY (CONT.)

The KOSH Program incorporates by reference the safety and health standards promulgated in 29 CFR 1910, *General Industry*, and 29 CFR 1926, *Construction*.

101 KAR 2:150, *State Safety Program,* in compliance with KRS 18A.110(7)(i), provides for the development, operation, and enforcement of programs to improve work safety. The Personnel Cabinet's *Commonwealth of Kentucky Safety and Health Manual* expresses and summarizes the state's safety and health program.

In compliance with 101 KAR 2:150, KYTC assigns the Secretary's Office of Safety (SOS) the responsibility to develop, update, oversee, coordinate, evaluate, and administer the KYTC safety and health program. The KYTC safety and health program policy is established in the KYTC *General Administration and Personnel Manual* (**GAP-700**).

KYTC's executive and administrative management are responsible for implementing safety and health rules and regulations in their assigned areas.

SOS MISSION

The SOS's mission is to partner with our employees to prevent injuries and incidents by proactively providing solutions to keep every employee safe and to build trust through planning, training, communication, and service.

SOS OBJECTIVES

The SOS's objectives are as follows:

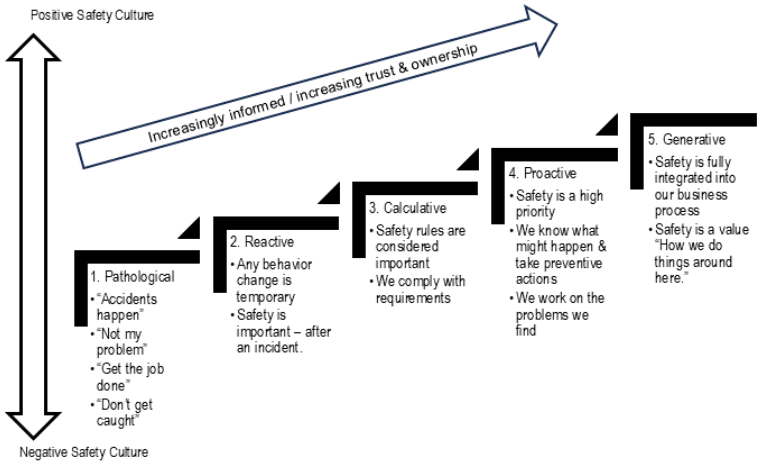
- Eliminate employee injuries by creating a culture of safety through servant leadership that encourages everyone at KYTC to make safe choices.

- Ensure that KYTC workplaces are free from recognized hazards and behaviors that cause, or are likely to cause injuries, illnesses, or damage to property.

An organization's safety culture can be defined as the shared collection of beliefs, perceptions, attitudes, and values that employees share in relation to risks within their organization. The SOS intends to foster growth of a positive safety culture as illustrated in Figure 1.

SOS OBJECTIVES (CONT.)

Figure 1. Positive Safety Culture Growth



SOS CORE VALUES

The SOS's core values include a commitment to safety, integrity, and respect by:

- Continually improving the KYTC safety and health program
- Putting safety first in everything
- Demonstrating a safety-first culture through honest and ethical actions
- Treating everyone in a courteous and professional manner

KYTC SAFETY & HEALTH POLICY

KYTC fully subscribes to the *Occupational Safety and Health Act of 1970* (Act) as adopted in KRS 338 and Kentucky Administrative Regulations, including 101 KAR 2:150, *State Safety Program*. KYTC shall assure, so far as possible, every Cabinet employee a safe and healthy workplace free from recognized hazards that cause or are likely to cause physical harm. The rights and duties of employers and employees as described in the Act shall be included in the rules, policies, and procedures of the Cabinet.

KYTC will diligently pursue full compliance with the Act and will commit resources required to fully perform the duties and responsibilities set forth and assigned pursuant to the Act, as well as conduct all operations in a manner conducive to assuring employee safety and health.

Employees are guaranteed the exercise of their rights under the Act without being subjected to any retaliation whatsoever and are afforded the opportunity to participate fully in the KYTC safety and health program.

PROGRAM PRINCIPLES

The guiding principles of the KYTC safety and health program are based on OSHA's *1989 Occupational Safety and Health Program Management Guidelines* and are incorporated by reference.

The five recognized elements include:

- Management leadership and commitment
- Employee engagement
- Program evaluation and improvement
- Hazard prevention and control
- Safety training and competence

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ADMINISTRATION GUIDE

Chapter

ROLES & RESPONSIBILITIES

Subject

Secretary's Office of Safety

RESPONSIBILITIES

KRS 338.031(a) states:

> *Each employer:*
>
> *1) Shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;*
>
> *2) Shall comply with occupational safety and health standards promulgated under this chapter.*

To fulfill assigned responsibilities, the Secretary's Office of Safety (SOS) shall:

- Develop, update, oversee, coordinate, evaluate, and administer the Kentucky Transportation Cabinet (KYTC) safety and health program.
- Initiate and maintain hazard prevention programs, including proper control procedures for workplace hazards that cannot be eliminated.
- Conduct safety and health observations and audits to monitor and evaluate KYTC's compliance with safety and health policies and applicable laws and regulations.
- Conduct or approve all safety and health training required to maintain compliance with Occupational Safety and Health Administration (OSHA) standards.
- Coordinate the sharing of information and best practices among District Safety Committees, and advise Committees on technical issues or interpretations, policies, and procedural questions.

  Note: Upon request, the branch may collaborate and participate in training activities conducted by other KYTC units.

RESPONSIBILITIES (CONT.)

- Develop and monitor safety data for the use and information of KYTC, including:
  - Statewide accident and injury statistics including, but not limited to, OSHA 300s, incident rates, and lost work days
  - Safety training records of KYTC personnel
  - Review of Incidents, reported close-calls / near-misses, hazards, and safety improvement suggestions
- Maintain the Safety Management Software System (SMSS) for the primary purpose of providing information on key safety metrics to KYTC leadership and employees.
- Issue an annual safety report containing information on KYTC's safety and health program, as well as an analysis of the year's activities and injury records.

EXECUTIVE DIRECTOR

The Executive Director of the Secretary's Office of Safety (SOS) is responsible for the implementation of KYTC's safety and health program at the statewide level under the direction of the Secretary of Transportation.

The Executive Director also serves as technical advisor to management and supervisory personnel and as the liaison between KYTC and other state and federal agencies in safety and health matters.

BRANCH MANAGERS

There are two branches within the SOS: the Safety Training & Program Management Branch and the Injury Prevention & Safety Operations Branch. Both branch managers are primarily responsible for the implementation of KYTC's safety & health program within their respective branch under the direction of the SOS Executive Director.

Branch manager responsibilities may include:

- Assist with administration of budgets, personnel, and resources.
- Oversee the activities of, and provide assistance, guidance, and policy direction to, safety administrators.

SAFETY ADMINISTRATORS

Safety administrators are primarily responsible for the implementation of KYTC's Safety and Health Program at the statewide level under the direction of the SOS Executive Director.

Safety administrator responsibilities may include:

- Oversee compliance with agency safety and health policies and procedures.
- Interpret and apply safety regulations, policies, procedures, and other source materials dealing with safety and health.
- Liaison with and provide support to district safety staff, including:
  - Assist with or perform incident reviews involving employees or equipment.
    - Report review results to appropriate supervisors and managers.
    - Identify root causes and factors.
    - Participate in developing necessary preventative or corrective measures.
  - Identify and resolve district safety program needs.
  - Recommend policy and procedural modifications.
  - Communicate program changes to affected district staff.
- Evaluate jobsite and workplace compliance with occupational safety and health standards for assigned Central Office and District operations and facilities, as needed.
- Review reports of safety hazards, improvement suggestions, close-calls/near-misses, and recommend corrective or preventive measures.
- Review incident data for trend analysis to identify corrective measures and training, as needed.
- Recommend equipment, structure, policy, or program modifications to enhance safety.
- Conduct or assist with necessary safety and health training.
- Respond to programmatic inquiries from district employees, supervisors, and managers.

SAFETY ADMINISTRATORS (CONT.)

- Conduct job safety analyses and personal protective equipment (PPE) assessments, then document findings by updating existing or creating new documents in the Job Hazard Analysis (JHA) library.

- Serve as the primary contact to report workplace fatalities, amputations, in-patient hospitalizations, or the loss of an eye to the Kentucky Labor Cabinet, Department of Workplace Standards, Division of Occupational Safety and Health Compliance, at (502) 564-3070 or 1-800-321-OSHA (1-800-321-6742).

- Manage and monitor the Workers Compensation Program under the direction of the SOS Executive Director and Injury Prevention & Safety Operations Branch Manager.

KYTC WORKERS' COMPENSATION COORDINATOR

The KYTC workers' compensation coordinator responsibilities may include:

- Monitor employee injury and illness reporting through the Safety Management Software System (SMSS), audit to ensure complete reporting, and resolve any errors or omissions.

- Ensure accurate and timely transmission of incident data to the third-party administrator.

- Assist district workers' compensation coordinators with problem resolution, provide policy guidance, and communicate information necessary to ensure program effectiveness.

- Maintain workers' compensation files, electronic and hard copy, as appropriate.

- Monitor program activities and provide executive management with regular, periodic updates of claims activity.

- Collaborate with the third-party administrator to coordinate an employee's return to work.

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Chapter	Subject
ROLES & RESPONSIBILITIES	Management & Supervisors

REFERENCES 29 CFR 1926.32(f)

MANAGEMENT RESPONSIBILITIES

KYTC management responsibilities shall include:

- Communicate safety and health policies, procedures, goals, and objectives to all employees while emphasizing safety's predominant role in all jobs and tasks.
- Consider regular meetings within operating sections to discuss safety issues, needs, and opportunities.
- Encourage open, two-way communication throughout the organization.
- Abide by KYTC's safety and health program policies, guidelines, and requirements in all aspects of job performance.
- Clearly communicate and demonstrate the expectation that all employees shall abide by KYTC's safety and health program policies, guidelines and requirements.
- Delegate appropriate authority and responsibility as needed to effectively manage the safety and health program.
- Hold all KYTC employees accountable for adherence to the safety and health program policies and procedures.

SUPERVISOR RESPONSIBILITIES

In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment.

Supervisor responsibilities shall also include:

- Orient and instruct all employees in the KYTC safety and health program policies and procedures, as well as and safe practices and procedures specific to their assigned duties.

SUPERVISOR RESPONSIBILITIES (CONT.)

- Demonstrate adherence to all safety policies and procedures in all aspects of job performance.
- Promptly address unsafe acts or conditions:
  - Report unsafe acts or conditions.
  - Initiate or complete corrective action to prevent or prohibit the reoccurrence of any unsafe act or condition.
- Implement all aspects of the safety and health program within their area of responsibility.
- Provide employees with the necessary information and training to safely do their job, and give detailed instructions on safety procedures for the tasks being performed.
- Ensure that employees participate in all required safety training offered or facilitated by safety personnel.
- Take defective equipment out of service promptly and report such action to the appropriate authority.

  Note: Equipment is not to be used if it constitutes a hazard to any employee or the public, or when the continued use of the equipment may cause further damage to the equipment itself.
- Complete review of applicable TC 25-156, *Job Safety Analysis & PPE Hazard Assessment*, for each new job assigned to their work crew, and ensure completion of a TC 25-163, *Job Briefing*, prior to the work task (**Exhibit 9001** and **9002**).

  Note: The primary purpose of a job safety analysis is to identify hazards of the particular job or task being performed, identify hazard controls needed, and confirm plans to implement needed control in order to reduce the risk of injury.
- Select and assign workers trained and qualified to do the job in a manner that will be safe for employees and the public.
- Read and comply with the *Employee Safety and Health Manual* and *Safety and Health Administration Guide* to assist supervised employees in understanding and adhering to safety and health requirements.

SUPERVISOR RESPONSIBILITIES (CONT.)

- Promptly post and update KYTC, Occupational Safety and Health Administration (OSHA), Kentucky Occupational Safety and Health (KOSH), and related safety and health information in an area accessible to all employees.

  Note: It is recommended that a portion of the office bulletin board be reserved for KYTC, OSHA, KOSH, and related safety and health information.

- Supervisors shall not ignore, direct, or cause to be directed any activity, task, or operation known to them as being unsafe.

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Chapter	*Subject*
ROLES & RESPONSIBILITIES	District Safety Coordinators

PURPOSE & SCOPE

The Secretary's Office of Safety (SOS) district safety coordinators are primarily responsible for the implementation of the Kentucky Transportation Cabinet (KYTC) safety and health program at the district level under the direction of the chief district engineer.

RESPONSIBILITIES

District safety coordinators shall:

- Ensure compliance with KYTC safety and health policies and procedures.
- Interpret and apply safety regulations, policies, procedures, and other source materials dealing with safety and health.
- Perform ongoing, in-depth analysis of district safety program needs, recommend necessary policy and procedural modifications, and communicate all program changes to employees, staff, contractors, and others as appropriate.
- Review all employee workplace injury, illness, and property damage incident reports to identify direct causes, contributing factors, and required preventive and corrective measures.
- Identify and implement necessary follow-up actions upon review of all district safety opportunity reports. (**SHA-410**)
- Perform jobsite and facility safety observations to ensure compliance with occupational safety and health standards.
- Report required information and respond with requested information in a timely manner to the Secretary's Office of Safety.
- Recommend safety enhancement modifications to equipment or structures.
- Conduct or assist with necessary safety and health training.
- Respond to programmatic inquiries from employees, supervisors, and managers.

RESPONSIBILITIES (CONT.)

- Conduct job safety analyses and personal protective equipment assessments, and certify their completion in writing.
- Oversee and coordinate the district safety committee.

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Chapter	*Subject*
ROLES & RESPONSIBILITIES	Employees

RESPONSIBILITIES

It is impractical to include safety instructions in this manual which cover every detail and all conditions of work performed by the various classes of Kentucky Transportation Cabinet (KYTC) employees.

Generally, the most impactful factors on the workplace safety of every employee are the employee's personal risk assessment, risk tolerance, and individual decision to accept or not accept the associated risk and potential hazards. The policies, programs, and guidance presented in this manual are intended to outline the fundamental principles that should be incorporated into this personal and team decision making process.

For any operation or activity not covered in this manual, refer to the following sources:

- Kentucky Administrative Regulations, including 803 KAR 2
- US Code of Federal Regulations
  - 29 CFR 1910, *General Industry*
  - 29 CFR 1926, *Construction*
  - 29 CFR 1915, 1917, 1918, *Maritime*
  - 29 CFR 1928, *Agriculture*
- National consensus standards
- American National Standards Institute (ANSI)
- *Manual on Uniform Traffic Control Devices* (MUTCD)
- KYTC *Standard Drawings*
- Manufacturer-applicable rule, regulation, policy, law, or standard

KRS 338.031(b) states:

> *Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this chapter which are applicable to his own actions and conduct.*

Employee responsibilities shall also include:

- Comply with applicable occupational safety and health standards, policies, procedures, rules, and orders in the performance of assigned duties.

RESPONSIBILITIES (CONT.)

- Promptly report unsafe acts, conditions, incidents, and injuries to the responsible supervisor.
- Adopt the recommended safe procedure as the best procedure.
- Maintain the highest regard at all times for the safety of fellow employees and the public.
- Report unsafe equipment and working conditions to the immediate supervisor, safety representative, or both.
- Contribute ideas and suggestions for improved safety practices.
- Wear required personal protective equipment for the job being performed.
- Read and comply with the *Employee Safety and Health Manual* and safety and health policies and procedures applicable to the work being performed.
- Attend mandatory safety training.

Employees shall **not**:

- Perform any activity, task, or operation known to be unsafe.
- Engage in horseplay or any behavior that may result in injury.
- Use or be under the influence of drugs or alcohol.

VIOLATION OF POLICY

Any employee found in violation of the requirements of the KYTC safety and health program may be issued a TC 25-105, *Notice of Safety Violation*, which may be grounds for disciplinary action (**Exhibit 9003**).

Employees who violate KYTC safety and health program policies and procedures or commit acts that cause or are likely to cause harm to themselves, coworkers, the public, or property shall be subject to disciplinary action, up to and including dismissal (**GAP-901**).

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Chapter

ROLES & RESPONSIBILITIES

Subject

Safety & Health Committees (SHC)

OVERVIEW

Safety and health committees (SHC) are an essential tool in the prevention of unsafe workplace practices and conditions, thus reducing the risk of employee injuries.

PURPOSE & SCOPE

SHCs shall be established with the following purposes:

- Increase and maintain employee engagement in health and safety issues and outcomes.
- Participate in awareness and training activities that educate managers, supervisors, and employees of their responsibilities for the prevention of workplace accidents and injuries.
- Ensure safety and health activities are an integral part of the organization's operating procedures, culture, and programs.
- Provide opportunities for open discussions of safety and health problems, as well as possible solutions.
- Educate employees and managers about safety and health requirements and standards.
- Eliminate workplace hazards and, subsequently, reduce the risk of workplace injuries, illnesses, and accidents.
- Ensure compliance with Kentucky Occupational Safety and Health (KOSH) Standards.

COMMITTEE STRUCTURE & OFFICER DUTIES

SHCs shall be structured with a chairperson, vice-chairperson, secretary, and general members. The primary duties of each are as follows:

- Chairperson
  - Schedule meetings and set agendas.
  - Coordinate and conduct orderly meetings.
  - Establish deadlines and committee assignments.

COMMITTEE STRUCTURE & OFFICER DUTIES (CONT.)

- Provide appropriate and timely follow-up on recommendations developed by the committee.
- Serve as communication liaison between management and the SHC.
- Display and promote safety and health best practices.
- Be familiar with general principles and concepts of the current safety and health programs and guidelines, as well as applicable KOSH standards.

➢ Vice-chairperson
- Display and promote safety and health best practices.
- Assume leadership of SHC when chairperson is unavailable.
- Chair regular and special-called meetings in absence of the chairperson.

➢ Secretary
- Maintain, record, and disseminate minutes of each meeting.
- Display and promote safety and health best practices.

➢ General members
- Display and promote safety and health best practices.
- General SHC membership should include individuals from various positions, departments, and organizational levels.
- Membership eligibility requirements and terms of service should be established in writing with consideration given to staggered terms to ensure continuity.

MEETINGS

It is recommended that SHC meetings be held monthly or other regular schedule, on a fixed day and time. Newer SHCs may consider meeting more frequently until policies and routines are established.

Committee meeting agendas may include discussion of the following:

➢ Unfinished items from previous meetings or activities

➢ Visits from the chief district engineer or branch manager

➢ Safety inspection reports and corrective actions

➢ Recent accidents and incidents sustained and preventive measures

MEETINGS (CONT.)

- Current action plan and training program status
- Outstanding recommendations from outside compliance inspectors
- Future action plans and training programs
- Special activities, such as health fairs or safety conferences
- Recommendations or findings from the monthly loss control committee
- Current construction or real property improvement projects
- New business, future agenda items, projects, and meeting dates

DUTIES

In order to accomplish these objectives, the SHC shall:

- Develop a written mission statement and define the duties and responsibilities of its members.
- Prioritize goals and establish action plans to achieve each goal.
- Include representation from all organizational levels.
- Meet on a regular basis.
- Record and disseminate minutes of each meeting including, but not limited to, the documentation of attendance, safety issues, and any proposed corrective actions.
- Emphasize the importance of meeting attendance by allowing for the removal of members who are repeatedly absent.
- Endeavor to develop new methods for increasing and maintaining safety awareness that result in reduced injuries.
- Organize special quality action teams to address specific issues and activities.
- Communicate the committee's purpose, activities, and accomplishments to all employees, including Central Office.

FUNCTIONS

SHCs shall be involved with the following functions:

- Review policies and procedures that include construction and maintenance activities.
- Review routine safety inspection reports that address:
  - Workplace hazards and unsafe actions
  - Work order request or corrective action follow up
  - Evaluation of current safety and health program effectiveness
  - Identification of safety and health problems and improvements
- Review and recommend required training and educational safety programs for employees.
- Identify trends and problem areas in injury and accident reports.
- Identify high-risk job tasks and review written safe-operating procedures.
- Review TC 25-156, *Job Safety Analysis & PPE Hazard Assessment* (**Exhibit 9001**).

OPTIONAL ACTIVITIES

In addition, SHCs may also further promote safety and health awareness through the use of one or more of the following activities or programs:

- Safety contests, such as best safety slogan of the month
- Poster programs and contests
- Audio-visual presentations
- Special safety and health events, such as luncheons
- Guest speakers, seminars, and training programs
- Employee suggestion programs
- Injury prevention campaigns, such as practicing safe lifting or slip-and-fall awareness
- Special safety recognition awards
- Newsletters and promotional material

OPTIONAL ACTIVITIES (CONT.)

- Health and wellness fairs and activities
- Annual District Equipment Operator Safety Conference/Roadeo
- Annual snow and ice inspection participation

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Section

SAFETY OBSERVATIONS & INSPECTIONS

Subject

Facilities

FACILITY INSPECTIONS

Kentucky Transportation Cabinet (KYTC) safety personnel are to perform facility safety observations of all facilities within their assigned District or Central Office operations to:

- Evaluate the workplace.
- Identify potential hazards.
- Encourage and oversee compliance with applicable occupational safety and health standards and KYTC safety policies and procedures.

Safety personnel should regularly inspect all facilities within their assigned area of responsibility for safety and health hazards and document the inspection by completing a *Facility Safety Observation* report in the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system. In the event that documentation in BOOTS is not feasible, TC 25-159, *Facility Safety Inspection*, may be used as an alternative (**Exhibit 9004**).

Comprehensive annual inspections are required for every facility within the district operation. KYTC safety personnel should maintain documentation of these inspections, follow-up corrections, and abatement verification.

The supervisor or representative of the facility should accompany safety personnel during inspections and sign the inspection form when completed. The supervisor or responsible person located at the facility should be made aware of any hazards, violations, and program deficiencies and be responsible for the corrections.

Corrective actions for identified hazards should be documented and assigned to the responsible party in the Facility Safety Observation tool in BOOTS.

FACILITY INSPECTIONS (CONT.)

Upon completion of a *Facility Safety Observation*, the resulting report should be shared via e-mail with the following:

- Facility supervisor or representative at time of inspection
- Chief district engineer
- Secretary's Office of Safety

INSPECTIONS BY OTHER AGENCIES

When safety inspections are conducted by other agencies, Cabinet personnel shall cooperate with and assist inspectors. Cabinet personnel are to refrain from making personal statements to inspectors concerning matters not within their authority. Authorized inspectors acting within the scope of their jurisdiction shall not be denied entry to KYTC facilities.

If the Kentucky Labor Cabinet, Division of Workplace Standards, opens an inspection of any KYTC unit, the district safety specialist or coordinator and the Secretary's Office of Safety should be promptly notified. If available, the district safety specialist or coordinator should proceed promptly to the location of the inspection to assist the inspector as needed. The Secretary's Office of Safety shall be copied on all written communications related to Kentucky Labor Cabinet inspections

CITATIONS & FINES

The Secretary's Office of Safety must be promptly notified upon receipt of any proposed safety citation or penalty. Fines, abatement, corrective actions, and all necessary paperwork are the responsibility of the district or division receiving the citation.

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Section

SAFETY OBSERVATIONS & INSPECTIONS

Subject

Jobsites

JOBSITE INSPECTIONS

Kentucky Transportation Cabinet (KYTC) safety personnel should regularly perform jobsite and work zone safety observations of all the assigned district field crews to check compliance with applicable occupational safety and health standards, *Manual on Uniform Traffic Control Devices* (MUTCD) requirements, and KYTC safety policies and procedures.

KYTC safety personnel should document each inspection at the time by completing *Jobsite Setup Observation* in the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system. If BOOTS is not accessible, safety personnel should document the inspection on TC 25-110*, Jobsite Setup Inspection* (**Exhibit 9005**).

The supervisor or responsible person located at the inspection jobsite should accompany KYTC safety personnel during the inspection, except when ongoing operations require the supervisor's presence. The supervisor or responsible person located at the jobsite should be made aware of any hazards, violations, and program deficiencies, and should be responsible for prompt corrections.

KYTC safety personnel should email copies of the completed BOOTS *Jobsite Setup Observation* report to the following:

- Crew supervisor at time of inspection
- Chief district engineer
- Secretary's Office of Safety

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Section	SAFETY OBSERVATIONS & INSPECTIONS
Subject	Equipment

PRE-USE INSPECTIONS

Supervisors are responsible for ensuring that their employees complete all required pre-use safety inspections of vehicles or equipment within their assigned crew.

Vehicle and equipment operators shall:

- Conduct a pre-use safety inspection to ensure that vehicles and equipment are in safe operational condition and in compliance with applicable statutes and policies.

- Perform safety inspections of assigned vehicles or equipment during each work shift before putting them into operation. Items to check include, but are not limited to, glass, horn, mirrors, lights, turn signals, brakes, tires and wheels, exhaust system, steering mechanisms, backup alarms, and warning light systems.

  If multiple operators share a vehicle during snow or ice operations on a rotating shift basis, the operator leaving his shift should brief the incoming operator of any known issues encountered with the vehicle during the shift ending. The incoming operator shall perform a pre-trip inspection prior to beginning operation.

  Note: Additional checks are necessary for different types of equipment, and operators should refer to the manufacturer's operation manual for inspection criteria. Commercial vehicles shall have a full Department of Transportation (DOT)-compliant pre-trip inspection completed and documented prior to each use.

- Document inspections by completing TC 74-11, *Operators Daily Check Sheet* or TC 25-168, *Aerial Device Bucket Truck Daily Check Sheet* (**Exhibit 9007**). If problems are identified during inspection and cannot be immediately corrected, the operator shall provide a copy of the completed TC 74-11 or TC 25-168 to the immediate supervisor.

DO NOT OPERATE EQUIPMENT TAGS

The purpose of the DO NOT OPERATE tag is to remove faulty or damaged equipment from service, preventing injuries to employees and the public, as well as financial loss to the state.

Upon receipt of TC 74-11 or TC 25-168 from an operator noting faulty or damaged equipment, the Supervisor shall confirm the report, tag the equipment as appropriate, coordinate the necessary corrections, and determine when the equipment may be returned to service.

In doing so, supervisors shall follow the following process:

- Confirm the presence of a problem on the vehicle or equipment that cannot be immediately repaired.

- Enter the following information on a DO NOT OPERATE tag:
  - Vehicle license plate, state inventory, or equipment number
  - Type of equipment
  - Reason for tagging
  - Signature of person completing tag
  - Date equipment tagged

- Affix the DO NOT OPERATE tag to the vehicle or equipment, removing it from service until repaired.

- Ensure the tagged equipment is scheduled for repair or replacement by qualified personnel, and it is maintained out of service until such repair or replacement is complete.

- Re-inspect the equipment following repair or replacement to ensure it is in safe operational condition and in compliance with applicable statutes and policies.

- Remove, sign, and date the DO NOT OPERATE tag and file a copy of the tag with the original TC 74-11, *Operator's Daily Check Sheet*, or TC 25-168, *Aerial Device Bucket Truck Daily Checklist*. The Supervisor placing the tag is the only personnel authorized to remove the tag allowing it to return to service.

- Maintain documentation of pre-use inspection reports and any associated repair and corrections for a period of 1 year from the latest of either the inspection date or correction date.

SAFETY PERSONNEL INSPECTION AUDITS

Safety personnel should conduct routine audits to ensure the process outlined is being followed and address any deficiencies with the involved supervisor and employees. Audits should be completed jointly with the supervisor for the organizational unit involved.

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Section	*Subject*
SAFETY OBSERVATIONS & INSPECTIONS	Fire Extinguishers

REFERENCES

NFPA 10 Standard for Portable Fire Extinguishers
29 CFR 1910.157, Fire Protection

OVERVIEW

Fire extinguishers play an important role in the Kentucky Transportation Cabinet's (KYTC) effort to protect state employees and property, and to minimize loss. This effort requires communication and cooperation among several areas of KYTC, including the Department of Highways' districts, Office of Support Services, and Secretary's Office of Safety.

Safety personnel or their designees shall ensure that fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times.

TRAINING

Where portable fire extinguishers are provided for employee use in the workplace and where employees are expected to operate fire extinguishers, the Secretary's Office of Safety shall provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage firefighting.

EMPLOYEE USE

Equipment and vehicle operators are responsible for regularly checking vehicle or equipment mounted fire extinguishers. For commercial vehicles, this inspection is a required part of the Department of Transportation (DOT) pre-trip inspection. Defective extinguishers up to 5 lb. should be replaced from the KYTC Division of Equipment's warehouse stock.

Employees who discharge an extinguisher should report the incident requiring the extinguisher (if any) and the discharge immediately to their supervisor so a replacement may be acquired or a recharge can be performed.

SAFETY PERSONNEL RESPONSIBILITIES

Safety personnel or designee responsibilities may include, but are not limited to, the following:

- Ensure all assigned facilities are equipped with appropriate number, type, and rating of fire extinguishers for the facility usage type; extinguishers are located and mounted appropriately; and any necessary signage is present.

- Conduct monthly checks of all fire extinguishers in assigned facilities and document checks on the extinguisher inspection tag. Monthly checks shall include, but are not limited to, ensuring the extinguisher gauge indicates full-charge, and that the extinguisher is undamaged, free of obstruction, and readily accessible.

- Coordinate inspection of all portable fire extinguishers rated 10B or greater by a qualified technician, following requirements of NFPA 10 Standard for Portable Extinguishers, either annually or when extinguisher shows evidence of corrosion or damage.

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Chapter	Subject
TRAINING	Overview

PURPOSE & SCOPE

Under the *Occupational Safety and Health Act of 1970,* employers are responsible for providing a safe and healthy workplace. Delivering appropriate training to all employees is integral in fulfilling this responsibility. Training in safe work practices is also an investment in fewer injuries and illnesses, better morale, and lower insurance premiums.

MISSION

The training mission of the Secretary's Office of Safety is to ensure the protection of workers and prevent work-related injuries, illnesses, and deaths by setting and enforcing standards, communicating clear expectations, and providing training, outreach, education, and assistance.

Occupational Safety and Health Administration (OSHA) standards, which have prevented countless workplace tragedies, often include explicit safety and health training requirements to ensure that workers have the required skills and knowledge to safely do their work.

CHARACTERISTICS OF SUCCESSFUL TRAINING PROGRAMS

Successful training programs should reflect the following characteristics:

- *Accurate.* Training materials should be prepared by qualified individuals, updated as needed, and facilitated by appropriately qualified and experienced individuals employing appropriate training techniques and methods.
- *Credible.* Training facilitators should have a general safety and health background or be a subject matter expert in a health or safety related field. They should also have experience training adults or experience working with the target population. Practical experience in the field of safety and health, as well as experience in training facilitation, contribute to a higher degree of facilitator credibility.
- *Clear.* Training programs must not only be accurate and believable, but also clear and understandable to the participant.

CHARACTERISTICS OF SUCCESSFUL TRAINING PROGRAMS (CONT.)

- *Practical.* Training programs should contain information, ideas, and skills that participants see as directly useful in their working lives. Successful transfer of learning occurs when the participant can see how information presented in a training session can be applied in the workplace.
- *Timely.* Training programs should provide needed information to employees on anticipated or potential hazards and controls for their job positions before they are expected to perform the tasks. Learning after encountering the problem is sometimes too late to prevent injury or illness.
- *Effective*. Training programs should have defined learning objectives that are relevant to employees, means to confirm that the skills and information have been understood, and evaluation of effectiveness.

MANAGER & SUPERVISOR RESPONSIBILITIES

Managers and supervisors are directly responsible for the following:

- Ensure employees receive the appropriate safety training, resources, and information.
- Provide employees with training on safety policies, procedures, and programs so that employees have a clear understanding of their assigned duties and responsibilities.
- Support in-service, interagency, and external safety training programs that contribute to the effective use of human and fiscal resources.
- Ensure employees comply with all applicable safety policies and procedures.

RECORDS

All safety training shall be documented by the instructor or facilitator using TC 25-2, *Training Report* (**Exhibit 9009**), at the time training is conducted. A paper or electronic copy of this completed report should be retained by the instructor as required by the Kentucky State Libraries and Archives Records Retention Schedule.

All safety training shall be entered into the MyPurpose Learning Management System as soon as possible. The instructor is responsible for ensuring TC 25-2, *Training Report*, is provided to the appropriate training coordinator for entry.

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Chapter

TRAINING

Subject

New Employee Safety Orientation

REFERENCES 29 CFR 1910, *General Industry*; 29 CFR 1926, *Construction*

OVERVIEW The first few weeks at a new job can be overwhelming for an employee. It is during this time that the Secretary's Office of Safety and district safety coordinators shall make every effort to address new employees' concerns in order to help them become safe and productive employees.

New employee orientation is conducted in each district office and Central Office on the 1st and 16th of each month when new employees are scheduled to report for work (or on the following Monday when either date falls on a weekend). To ensure uniformity, the Secretary's Office of Safety develops safety training materials, handouts, and checklists, and makes them available to all orientation liaisons. During orientation, new employees learn about the Kentucky Transportation Cabinet's (KYTC) safety values, expectations, policies, and procedures, as well as environmental, health, and safety programs. The *Employee Safety and Health Manual* shall be provided to and reviewed with each new employee on orientation day. A signed TC 12-262, *General Policy Acknowledgement*, shall be kept in the employee's personnel file (**Exhibit 9011**).

TRAINING TOPICS The topics that shall be covered during new employee safety orientation are specified in the KYTC Training Roadmap New Employee Safety Orientation series as detailed in **SHA-304**.

DOCUMENTATION All safety training will be documented on TC 25-2, *Training Report*. Training will be entered into the official online training record for each employee (**Exhibit 9009**).

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TRAINING

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Training Management System

PURPOSE & SCOPE

Training documentation shall be maintained in an enterprise-wide software application for the administration, documentation, tracking, reporting, and delivery of employee development opportunities.

The Secretary's Office of Safety, Kentucky Transportation Cabinet (KYTC) policy, or statutes mandate specific safety training. In order to properly track these training sessions, KYTC has determined that all safety training must use the same class titles in the software application. To accomplish this, a list of specific, standard class titles have been created. Classes must be recorded on TC 25-2, *Training Report*, and in the software application by official class titles (**Exhibit 9009**).

All training must be authorized by the Secretary's Office of Safety and be provided by KYTC safety personnel, an authorized individual using an approved curriculum or program, or an authorized external source. For authorized training providers or programs, employees may reference the *Employee Safety and Health Guidance Manual*, applicable Occupational Safety and Health Administration (OSHA) standards, and best practices.

The training facilitator is responsible for ensuring that training records are entered into the training management system. The actual record entry may be delegated to another individual or group.

ADDITIONAL INFORMATION

OSHA training requirements are available at:

https://www.osha.gov/Publications/osha2254.pdf

Employees may contact the district safety coordinator or the KYTC Secretary's Office of Safety regarding questions about training documentation or training requirements.

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TRAINING

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Safety & Health Training Matrix

The *Safety & Health Training Matrix* is located in the Safety Training Library located on the Secretary's Office of Safety (SOS) intranet site at:

https://business.kytc.ky.gov/work/SOS/Safety_Training_Library/

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Chapter
TRAINING

Subject
Department of Corrections
Inmate Program

PURPOSE & SCOPE

The Kentucky Transportation Cabinet (KYTC) Division of Maintenance Roadside Environment Branch coordinates the Department of Corrections (DOC) inmate program. As part of the Memorandum of Agreement (MOA) between KYTC and DOC or local correctional facilities, KYTC shall provide training for inmate workers and their assigned correctional officer(s) on their initial assignment to a KYTC inmate work crew. Training may be repeated for other crew members at the discretion of the correctional facility or KYTC. The Secretary's Office of Safety is responsible for providing initial and repeat training, as needed.

KYTC PROVISIONS

KYTC shall provide the following to inmates and officers, as necessary:

- Safety equipment and personal protective equipment (PPE) that conforms to current standards for working on and along highways
- Tools, plastic trash bags, equipment, signs, cones, and supplies that comply with the *Manual on Uniform Traffic Control Devices* (MUTCD)

DOC OR LOCAL CORRECTIONAL FACILITY PROVISIONS

The DOC or local correctional facility shall provide the following:

- Inmates to perform work assignments for KYTC
- Correctional officer(s) to monitor inmates at all times, including transportation to and from the worksite

  Note: Inmates are not considered employees or agents of KYTC, and shall be under the custody and control of the DOC at all times.
- Inmate clothing that distinguishes them from KYTC employees or general citizenry
- Needed medical care for inmates

  Note: The DOC or local correctional facility is considered the primary responder during a medical emergency involving inmates.

TRAINING TOPICS & PRESENTATION

The training subject matter is provided by KYTC to the correctional facility and is to be presented with minimal effort and inconvenience at a place and time that is most appropriate for correctional facility operations.

Training topics for correctional facilities may include:

- Work zone and traffic control signing procedures as prescribed by the MUTCD and as appropriate and required for anticipated work by the crew
- Proper and safe use and care of tools and equipment prior to beginning onsite work
- Safety while working near traffic
- Personal protective equipment (PPE)
- Roadside environmental hazards
- Basic string trimmer use and care, including use of brush blades
- Safely working in the vicinity of a chainsaw, tree and limb cutting, and brush chipper operations
- First aid and bloodborne pathogens
- Hazard communication

Note: This topic list and corresponding content are intended to cover typical roadside maintenance projects. KYTC has elected not to allow inmates to operate chainsaws or pole saws, but will permit string trimmer operation with or without brush blades. Inmates are not permitted to operate any vehicles, tools, or machinery unless trained and authorized to do so by KYTC.

TRAINING RECORDS

Training records shall be signed by inmates following training and maintained on file at the correctional facility by the person leading the training.

PROGRAM CONTACT

Contact KYTC's Division of Maintenance, Roadside Environment Branch or the Roadside Environment District Administrator, regarding questions or technical assistance with this program.

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Chapter

WORKPLACE RISK ASSESSMENT & PREVENTION

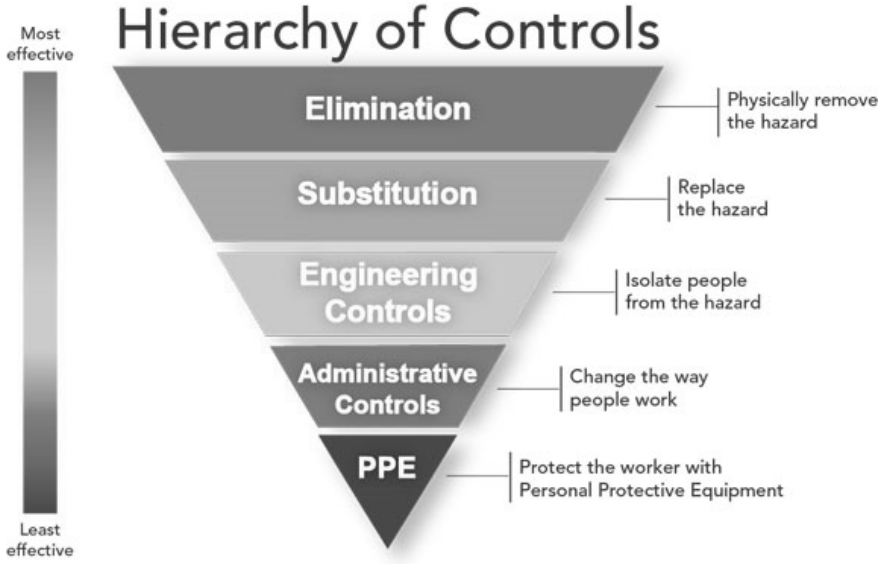
Subject

Hierarchy of Controls

PURPOSE & SCOPE

The Secretary's Office of Safety strongly promotes using the hierarchy of controls model for workplace risk assessment and prevention (Figure 2). Effective controls protect workers from workplace hazards; help avoid injuries, illnesses, and incidents; minimize or eliminate safety and health risks; and provide workers with safe and healthy working conditions.

Figure 2. Hierarchy of Controls Model



Source: National Institute for Occupational Safety and Health (NIOSH)

DEFINITIONS

Elimination - The best way to control a hazard is to eliminate it and remove the danger. This can be done by changing a work process in a way that will get rid of a hazard. For example, moving a toxic substance to a protected location; having workers perform tasks at ground level rather than working at heights; and other methods that remove the hazard all together.

Substitution - The second best way to control a hazard is to substitute something else in its place that would be nonhazardous or less hazardous to workers. For example, a non-toxic (or less toxic) chemical could be substituted for a hazardous one.

DEFINITIONS (CONT.)

Engineering controls - If a hazard cannot be eliminated or a safer substitute cannot be found, the next best approach is to use engineering controls to keep the hazard from reaching the worker. Engineering controls are design choices that function automatically, without any action by workers at risk, to reduce frequency or consequences of exposure to a hazard. For example, a permanently installed ventilation system to remove fumes can be more effective than depending on workers to wear respirators when entering the area.

Administrative controls - If engineering controls cannot be implemented, or cannot be implemented immediately, administrative controls should be considered. Administrative controls involve changes in workplace policies and procedures. They can include such things as warning alarms, labeling systems, reducing the time workers are exposed to a hazard, and training. Back-up alarms on trucks are an example of effective warning systems. However, the use of warning signs in lieu of feasible hazard elimination or substitution is not an acceptable form of hazard control.

Personal protective equipment (PPE) – PPE is the least effective method for protecting workers from hazards. PPE should be used only while more effective controls are being developed or installed, or if there are no other more effective ways to control the hazard.

SELECTION OF CONTROLS

Only the most feasible, effective, and permanent controls should be selected for use, with particular attention given to the following:

- Eliminate or control all serious hazards (those causing or are likely to cause death or serious physical harm) immediately.
- Use interim controls while developing and implementing longer-term solutions.
- Select controls according to a hierarchy that emphasizes engineering solutions first (including elimination or substitution), followed by safe work practices, administrative controls, and PPE.
- Avoid selecting controls that may directly or indirectly introduce new hazards. For example: Do not select hearing protection that prevents the employee from hearing alarms.
- Review and discuss control options with workers to ensure that controls are feasible and effective.
- Use a combination of control options when no single method fully protects workers.

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WORKPLACE RISK ASSESSMENT & PREVENTION

Subject

Job Safety Analysis

REFERENCES

29 CFR 1910 Subpart I, 29 CFR 1926 Subparts C and E

REQUIREMENTS

As part of routine monthly inspections, Kentucky Transportation Cabinet (KYTC) safety personnel shall assess workplace locations using TC 25-156, *Job Safety Analysis & PPE Certification of Hazard Assessment* (**Exhibit 9001**), and include the identification of potential workplace hazards that may necessitate the use of personal protective equipment (PPE).

If such hazards are identified, KYTC safety personnel shall consult **SHA-401** to determine if the hazard can be eliminated or substituted, or if engineering or administrative controls can be implemented. If PPE is the only viable alternative, safety personnel shall complete the following:

- Select and recommend the type of PPE that will protect employees from potential hazards.
- Communicate to affected employees the PPE required for the work being performed.
- Inform supervisors of their assigned responsibility to ensure that employees under their direction obtain and properly utilize the designated PPE.
- If necessary, assist supervisors in providing the required training to affected employees.
- Certify in writing that the required job safety analysis has been performed and maintain a file copy.

When conducting and certifying the job safety analysis, KYTC safety personnel shall utilize the example procedures set forth in 29 CFR 1910 Appendix B of Subpart I – Non-mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection.

If assistance is needed while conducting a hazard analysis and PPE assessment, contact the Secretary's Office of Safety.

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WORKPLACE RISK ASSESSMENT & PREVENTION

Subject

Job Briefing

REFERENCES

29 CFR 1926.952

PURPOSE & SCOPE

A job briefing is a participatory process of creating a safer and healthier work environment by identifying, eliminating, or controlling recognized hazards before commencing a task. Participating in a job briefing can significantly contribute to the prevention of accidents and injuries; therefore, all crew members shall participate in documented job briefings.

POLICY STATEMENT

In continual pursuit of a safe and healthy workplace, the Kentucky Transportation Cabinet (KYTC) has developed and instituted a job briefing program to be followed by all employees.

Benefits include:

- Essential job safety planning guidelines and key elements
- Enhanced compliance with Occupational Safety and Health Administration (OSHA) regulatory requirements
- Enhanced risk control
- Reduced risk of injury
- Enhanced participation of crew members in the safety planning process
- Focused job safety analysis
- Organized approach to identify possible hazards of unfamiliar tasks
- Required personal protective equipment (PPE) identified
- Training in hazard identification and safety procedures for new employees

ADMINISTRATIVE RESPONSIBILITIES

The Secretary's Office of Safety is responsible for the administration of the job briefing program. The day-to-day aspects of policy implementation shall be the responsibility of supervisors and employees when conducting district operations. Personnel participating in the program should contact the Secretary's Office of Safety or their designated safety personnel if further information is needed.

PROCEDURE

Job briefings shall:

- Be held at the start of every work shift since tasks, hazards, and personnel may differ
- Include the components of a job safety analysis
- Be documented on TC 25-163, *Job Briefing* (**Exhibit 9002**), by the person who conducts the briefing, and reviewed by the supervisor

SUPERVISOR RESPONSIBILITIES

The crew leader or supervisor responsibilities may include:

- Conduct a job briefing before engaging in work activity.
- Explain the hazards associated with each job task to work crew members.
- Give work crew members the opportunity to participate in the job briefing.

  Note: Allowing crew members to assist with development and review of the job briefing is an excellent opportunity for crew supervisors to engage the crew in the participatory process, as well as mentor future crew leaders.
- Address safety concerns raised by work crew members prior to or during the work activity, consulting with higher-level management and safety personnel as necessary.
- Complete and sign TC 25-163*, Job Briefing* (**Exhibit 9002**), per the guidelines set forth in this section.

CREW MEMBER RESPONSIBILITIES

Work crew member responsibilities may include:

- Participate in the job briefing by raising questions or safety concerns prior to the work activity.
- Certify participation in and understanding of the job briefing by initialing TC 25-163.
- Remain alert to and advise supervisors promptly of any changes in conditions or the development of events that pose a safety concern.

CONSTRUCTION INSPECTOR RESPONSIBILITIES

Construction Inspector responsibilities should include:

- Participate in the contractor's daily job briefing by raising questions or safety concerns prior to the work activity and emphasizing the importance of safety.
- Remain alert to and advise supervisors promptly of any changes in conditions or the development of events that pose a safety concern.
- Take actions necessary to correct immediate safety hazards, and report all observed safety hazards to the KYTC Project Manager.

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Section

WORKPLACE RISK ASSESSMENT & PREVENTION

Subject

Personal Protective Equipment (PPE)

REFERENCES

29 CFR 1910 Subpart I and 29 CFR 1926 Subpart C; KRS 338.031(2)

PURPOSE & SCOPE

The purpose of the Secretary's Office of Safety personal protective equipment (PPE) program is to protect employees of the Kentucky Transportation Cabinet (KYTC) from exposure to workplace hazards and risk of injury through the use of PPE (**SHA-500**).

This section addresses general PPE requirements, including eye, face, head, foot, leg, hand, arm, and torso protection, as well as protection from drowning. Separate programs exist for respiratory protection (**SHA-406-1**) and hearing protection (**SHA-1803**).

HIERARCHY OF CONTROLS

PPE will be provided, used, and maintained per manufacturer guidelines when it is required to ensure the safety and health of employees and lessen the likelihood of occupational injury and illness.

PPE is the last line of defense when following the Hierarchy of Controls model (**SHA-401**).

SAFETY PERSONNEL RESPONSIBILITIES

The Secretary's Office of Safety personnel are responsible for the development, implementation, and administration of KYTC's PPE program including, but not limited to, the following:

- Conducting job safety analyses (**SHA-402**)
- Selecting and recommending PPE
- Reviewing, updating, and conducting a job safety analysis when:
  - A job's task or location changes
  - New equipment is to be used
  - An accident has occurred
  - A supervisor or an employee requests it

Note: At a minimum, a job safety analysis shall be conducted once per year or any time a new job procedure or piece of equipment is introduced.

SAFETY PERSONNEL RESPONSIBILITIES (CONT.)

- Maintaining records on each job safety analysis, job briefing, PPE assignments, and PPE training
- Training, guiding, and assisting management, supervisors, and employees on the proper use, care, and cleaning of approved PPE
- Periodically re-evaluating the suitability of previously selected PPE
- Reviewing, updating, and evaluating the overall effectiveness of PPE use, training, and policies

SUPERVISOR RESPONSIBILITIES

In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment (PPE).

Supervisors have the primary responsibility for implementing PPE policies and enforcing PPE use in their work areas (**SHA-500**).

This includes, but is not limited to, the following:

- Providing appropriate PPE to employees
- Ensuring that employees are trained on the proper use, care, and cleaning of PPE
- Ensuring that PPE training certification and evaluation forms are signed and given to the safety coordinator/administrator for online training documentation and the employee's personnel file
- Ensuring that employees properly use and maintain their PPE, and follow KYTC PPE policies and rules
- Notifying the Secretary's Office of Safety and the district safety coordinator when new job hazards are introduced or when job processes are added or changed
- Ensuring that defective or damaged PPE is immediately disposed of and replaced
- Ensuring that all supervised employees understand and adhere to safety and health requirements
- Selecting and assigning sufficiently trained and qualified workers to do their assigned job in a manner safe for employees and the public
- Conducting a written job briefing to determine the safest, most economical way to proceed, as well as the physical protections necessary to do the work

EMPLOYEE RESPONSIBILITIES

KRS 338.031(2) states:

> *Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this chapter which are applicable to his own actions and conduct.*

The PPE user is responsible for following the requirements of the PPE policies (**SAFE-204**).

This includes, but is not limited to, the following:

- Properly wearing PPE as required for the job being performed
- Attending required training sessions and job briefings
- Caring for, cleaning, maintaining, and inspecting PPE as required per manufacturer guidelines
- Informing the supervisor of the need to repair or replace PPE
- Reading and complying with the *Employee Safety and Health Manual* on all safety and health policies and procedures applicable to the work being performed.

Employees who repeatedly disregard PPE policies and rules will be subject to disciplinary action up to and including dismissal from KYTC (**GAP-901**).

SELECTION OF PPE

Once workplace hazards have been identified, the Secretary's Office of Safety will determine if the hazards can be eliminated or reduced by control methods other than PPE.

If such methods are not adequate or feasible, the Secretary's Office of Safety will determine the suitability of the PPE presently available or select new or additional equipment as necessary. Care will be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards will be recommended for purchase.

All personal protective clothing and equipment will be designed for the work to be performed and maintained in a sanitary and reliable condition. Only protective clothing and equipment that meet National Institute for Occupational Safety and Health (NIOSH) or American National Standards Institute (ANSI) standards will be procured or accepted for use.

SELECTION OF PPE (CONT.)

Newly purchased PPE must conform to the updated ANSI standards which have been incorporated into the PPE regulations, as follows:

- Eye and Face Protection ANSI Z87.1-1989
- Head Protection ANSI Z89.1-1986
- Foot Protection ANSI Z41.1-1991
  Hand Protection

  Note: There are no ANSI standards for gloves; however, selection must be based on the performance characteristics of the glove in relation to the tasks to be performed.

Affected employees whose jobs require the use of PPE will be informed of the PPE selection and will be provided PPE by KYTC at no charge. Careful consideration will be given to the comfort and proper fit of PPE in order to ensure that the correct size is selected and will be used.

TRAINING

Any worker required to wear PPE will receive training in the proper use and care of PPE before being required to use it. Periodic retraining will be offered to PPE users as needed.

PPE training will include, but not be limited to, the following subjects:

- Necessity
- Types
- Usage, care, and maintenance
- Limitations
- Useful life and disposal

Employees shall demonstrate understanding of proper PPE use or shall repeat training. Supervisors shall document employee training on TC 25-3, *Personal Protective Equipment (PPE) Acknowledgment*, and TC 25-2, *Training Report*, and maintain both files for the duration of the employee's tenure (**Exhibit 9012** and **Exhibit 9009**). Both documents certify that the employee received and understood the required training on the specific PPE he or she will be using.

RETRAINING

Retraining is indicated when:

- An employee's work habits or demonstrated knowledge reflects a lack of understanding, motivation, and skills necessary to use required PPE.
- New equipment is installed.
- Previous training is out-of-date.
- Supervisor requests retraining for reasons noted above.
- The Secretary's Office of Safety determines retraining is necessary after receiving TC 25-105, *Notice of Safety Violation* (**Exhibit 9003**).

CLEANING & MAINTENANCE OF PPE

It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. Employees shall inspect, clean, and maintain their PPE according to the manufacturers' instructions before and after each use. Supervisors are responsible for ensuring that users properly maintain their PPE in good condition.

PPE shall be distributed for individual use whenever possible. If PPE sharing is necessary, equipment shall not be used by a different employee until it has been properly cleaned and sanitized by the original user.

Employee-provided PPE is discouraged, but may be considered in limited cases. Prior to use, employee-provided PPE shall be evaluated by the Secretary's Office of Safety or KYTC safety coordinator. Supervisors, in cooperation with safety personnel, shall ensure that employee-provided PPE is adequate protection for the identified workplace hazards, and that it is maintained in a clean and reliable condition.

Defective or damaged PPE shall not be used and shall immediately be reported, discarded, and replaced. Defective PPE can be worse than no PPE at all since many employees are more likely to engage a hazardous situation if they believe they are protected. Doing so with defective equipment puts them at greater risk for injury.

Contaminated PPE that cannot be decontaminated shall be disposed of in a manner that protects employees from exposure to hazards.

SHA-500 provides additional information regarding specific types of PPE.

SAFETY DISCIPLINARY POLICY

In order to maintain a safe and healthy workplace, KYTC employees must be cognizant of all state and federal safety and health regulations as they apply to specific job duties.

Employees who repeatedly disregard PPE policies and rules will be subject to disciplinary action, up to and including dismissal from KYTC (**GAP-901**).

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Section	Subject
JOB EQUIPMENT	Servicing Multi-Piece & Single-Piece Rim Wheels

REFERENCES

29 CFR 1910.177 Subpart N, Demounting and Mounting Procedures for Tube-Type Truck and Bus Tires Chart (OSHA 3402); Demounting and Mounting Procedures for Tubeless Truck and Bus Tires Chart (OSHA 3401); Multi-Piece Rim Matching Chart (OSHA 3403 – 2011); Servicing Multi-Piece and Single-Piece Rim Wheels Manual (OSHA 3421)

PURPOSE & SCOPE

The purpose of the servicing multi-piece and single-piece rim wheels program is to minimize the risk of injury when multi-piece and single-piece rim wheels are serviced.

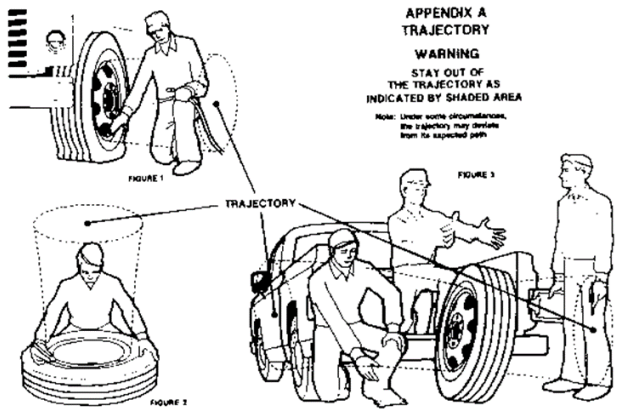
ADMINISTRATIVE RESPONSIBILITIES

The Secretary's Office of Safety is responsible for establishing and implementing the servicing multi-piece and single piece rim wheels program. If additional information regarding the program is needed, participating personnel should contact the Secretary's Office of Safety or their designated safety personnel.

DEFINITIONS

Trajectory – The "trajectory" of the air or rim wheel is any potential path or route (basically along the axis of the rim wheel) that a rim wheel component may travel during an explosive separation, or the area into which the air blast from a single-piece rim wheel may be released.

Figure 3. Trajectory of Air or Rim Wheel



Source: 29 CFR 1910.177 Appendix A: Trajectory

DEFINITIONS (CONT.)

Rim wheel – The component assembly of a wheel (either multi-piece or single-piece), tire and tube, plus other components.

Single-piece wheel – The component of the assembly used to hold the tire, form part of the air chamber (with tubeless tires), and provide the means of attachment of the assembly to the vehicle axle.

Multi-piece wheel – A vehicle wheel consisting of two or more parts, one of which is a side or locking ring that holds the tire and other components on the rim wheel by interlocking the components when the tire is inflated.

SINGLE-PIECE VS. MULTI-PIECE RIM WHEEL INCIDENTS

The primary difference between incidents involving single-piece rim wheels and those involving multi-piece rim wheels is the effect of the sudden release of the pressurized air contained in a single-piece rim wheel.

- Single-piece rim wheel
  - Incidents occur when the pressurized air contained in the tire is suddenly released, either by the bead breaking or by the bead slipping over the rim flange.
  - The principal hazards involve pressurized air which, once released, can either hurl an employee across the shop if the employee is in close proximity to the rim wheel and within the trajectory, or can propel the rim wheel across the workplace and into another worker.
- Multi-piece rim wheel
  - Incidents occur when the wheel components separate and are released from the rim wheel with violent force.
  - The severity of the hazard is related not only to the air pressure, but also to the air volume.

PROGRAM REQUIREMENTS

The following items are required in all facilities where tires are changed:

- A tire safety rack for airing tires with multi-piece rims shall be utilized by all personnel airing safety rim tires. A chain is suggested as an added precaution, but does not substitute for the rack.

PROGRAM REQUIREMENTS (CONT.)

- A clip-on chuck with sufficient hose length to permit the employee to stand clear of the potential trajectory of rim components.

Employees shall follow all OSHA regulations per 29 CFR 1910.177 for servicing multi-piece and single-piece rim wheels.

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Section	JOB EQUIPMENT
Subject	Slope Mower

REFERENCES

Product operation manual, 29 CFR 1926.32(f), **SHA-1621**, and **FOG-701**

SUPERVISOR RESPONSIBILITIES

In accordance with 29 CFR 1926.32(f), supervisors are designated as "competent persons" and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment.

SAFETY PLAN

Employees shall follow all manufacturer guidelines for the safe operation, maintenance, and inspection of slope mowers.

Employees shall follow manufacturer recommendations for equipment servicing and pre-work inspections as recommended in the manufacturer's operation manual, as well as those included in the KYTC *Field Operations Guide* (**FOG-701**).

Note: When using the forestry head for mowing operations, the tractor skid steer or excavator shall be equipped with the appropriate forestry package.

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Section	Subject
JOB ENVIRONMENT	Respiratory Protection

REFERENCES 29 CFR 1910.134; 29 CFR 1926.103; American National Standards Institute (ANSI), Z88.2-1980; **SHA-506**

PURPOSE & SCOPE In continuing pursuit of a safe and healthy workplace, the Kentucky Transportation Cabinet (KYTC) has instituted a respiratory protection program to be followed by all employees required to wear respiratory protection.

ADMINISTRATIVE RESPONSIBILITY The responsibility for the administration of this policy shall lie with the Secretary's Office of Safety. The day-to-day aspects of the policy are the responsibility of the department supervisors, KYTC safety personnel, and the employees to whom respiratory protection is assigned. Other assistance shall be provided as needed by contacting the Secretary's Office of Safety.

SELECTION OF RESPIRATORY PROTECTION The following criteria are used in the selection of a suitable respirator:

- Identification of Hazards

  The Secretary's Office of Safety personnel survey the work environment and identify hazards using the following classifications:

  - Gas/vapor contaminants
  - Particulate/dust contaminants
  - Fume contaminants
  - Mist contaminants
  - Oxygen deficient atmospheres
  - Atmospheres immediately dangerous to life and health
  - Combination of classes

SELECTION OF RESPIRATORY PROTECTION (CONT.)

- Evaluations of Hazards

  - If necessary, the Secretary's Office of Safety will direct qualified persons to take work environment air samples to determine the actual concentration of exposure hazards present.

  - All hazard evaluation methods used are in compliance with Occupational Safety and Health Administration (OSHA) or National Institute for Occupational Safety and Health (NIOSH) sampling methodologies.

  - Air samples requiring laboratory analysis are submitted to an American Industrial Hygiene Association (AIHA)-accredited laboratory.

  - The resulting concentration shall be compared with current OSHA Permissible Exposure Limits (PEL) or American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), whichever is lower, to assist in determining the level of protection required.

- Appropriate Selection and Purchasing

  - The Secretary's Office of Safety or designee completes this step aided by information provided by outside experts specifically trained in occupational health and industrial hygiene.

  - Selection shall consider facial irregularities (such as scars, dentures, and facial hair) and the workload of the employee in comparison with any possible resistance or stress placed upon the employee's respiratory system by the protective device.

  - Only appropriately sized respirators shall be assigned to individuals.

  - Only NIOSH/OSHA approved respirators will be purchased and used. Typical KYTC respiratory protection can be requisitioned from the Equipment Warehouse.

SELECTION OF RESPIRATORY PROTECTION (CONT.)

Note: The Transportation Cabinet has determined that a filtering face mask may be used only for voluntary use in non-hazardous environments. The Cabinet will purchase and provide disposable nuisance dust masks through the equipment garage's stockrooms. Each mask will be distributed with lead awareness information (**Exhibit 9010**).

MEDICAL EVALUATION

Medical examination and testing shall take place prior to an employee using respiratory protection. A *Medical/Occupational History Questionnaire* shall be completed by the employee prior to meeting with the physician (**Exhibit 9031**).

To further ensure the examining physician can render a qualified opinion regarding the employee's use of respiratory protection, the employees section engineer shall complete the *Respirator Information for Physician* (**Exhibit 9033**), and the employee shall provide it to the physician.

The following medical tests shall be completed as set forth in the established service contract:

- Basic physical examination
- Pulmonary function tests
- Respiratory fit test
- Spirometry
- Screening urinalysis
- Complete blood chemistry (CBC)
- Blood chemistry panel
- Lead test, with zinc protoporphyrin test (ZPP)
- Chest X-ray
- Vision screen
- Electrocardiogram (EKG)
- Any other test that the examining physician deems necessary to comply with OSHA standards

Employee medical information shall be treated as confidential information per Health Insurance Portability and Accountability Act (HIPPA) regulation and maintained on file in the Secretary's Office of Safety Central Office. Employees may contact the Secretary's Office of Safety to obtain medical test results completed as part of the employee's respiratory evaluation.

MEDICAL EVALUATION (CONT.)

Prior to performing work requiring the use of approved respiratory protection, the examining physician must provide the Cabinet with the *Physicians Approval for Respirator Assignment* (**Exhibit 9032**) and a statement of fitness attesting that the employee is fit to perform designated work duties.

All employees required to wear respiratory protection shall be re-examined on an annual basis. Follow-up interim evaluations shall include blood, lead, and ZPP tests.

ASSIGNMENT OF RESPIRATORY PROTECTION

All respiratory protective devices will have permanent, durable identification marking(s) attached to them that do not interfere with the performance of the device.

When a respirator is assigned to an employee for his or her exclusive use, records shall be kept by the employee's section engineer or supervisor, as well as the safety coordinator, indicating the employee and the specific respirator assigned.

When necessary, temporary emergency assignment of respiratory protective devices shall be made by the Secretary's Office of Safety personnel who shall:

- Make a good faith effort to collect and maintain a record of the employee's I.D., respirator I.D., description of operation or hazard area, and length of assignment.
- Ensure employees perform the required device inspection and fit testing prior to use.

FIT TESTING

Employees shall have the opportunity to handle the selected respirator, have it fitted properly, test the piece-to-face seal, and wear it in "normal" air. The Secretary's Office of Safety shall choose the most appropriate means of fit testing (qualitative or quantitative) for each employee and type of respiratory protection assigned.

- *Qualitative Fit Testing* involves a test subject responding to a chemical challenge outside the respirator face piece. These tests are fast, easily performed, and use inexpensive equipment; however, reproducibility and accuracy may vary given that they are based on the respirator wearer's subjective response to the test chemical.

FIT TESTING (CONT.)

A negative and positive pressure test must be conducted prior to qualitative fit testing. A qualified person must conduct the qualitative fit testing and appropriately document the method and results.

Three of the most popular methods of qualitative fit testing are:

- ♦ An irritant smoke test
- ♦ An odorous vapor test (isoamyl acetate-banana oil)

  Note: Qualitative fit testing using isoamyl acetate for chemical cartridges and irritant smoke for high-efficiency particulate filters shall be conducted at the time of initial fitting and at least annually thereafter.

- ♦ A taste test (saccharin solution)

➢ *Quantitative Fit Testing* offers more accurate, detailed information than qualitative fit tests on respirator fit. It can involve introducing a harmless aerosol to the wearer while he or she is in a test chamber, measuring ambient particulates in the air, or taking controlled negative-pressure measurements. While the wearer performs exercises that could induce face piece leakage, the air inside and outside the face piece is then measured for the presence of an aerosol, ambient particulates, or pressure change, to determine any leakage into the respirator.

PRESSURE TESTING CARTRIDGE-TYPE RESPIRATORS

A positive and negative pressure test shall be conducted for each negative-pressure, cartridge-type respirator prior to donning.

➢ Negative Pressure Check

1. Don the respirator per the manufacturer's instructions.
2. Seat the mask on the face by moving the head from side-to-side and up and down slowly while taking a few slow, deep breaths.
3. Cover the inlet opening of the respirator's cartridges or filters with the palm of the hand.

PRESSURE TESTING CARTRIDGE-TYPE RESPIRATORS (CONT.)

4. Inhale gently and hold breath for at least 10 seconds.

5. If the face piece collapses slightly and no leakage of air into the face piece is detected, it can be reasonably assumed that the respirator has been properly donned and the exhalation valve and face piece are not leaking.

- Positive Pressure Check

1. After the negative pressure check has been performed, close the exhalation valve.

   Note: For some respirators, this requires that the exhalation valve cover be removed first (see the manufacturer's instruction).

2. Exhale gently for at least 10 seconds.

3. The respirator has been properly donned if a slight positive pressure can be built up inside the face piece without the detection of any outward leakage of air between the sealing surface of the face piece and the wearer's face.

TRAINING & EDUCATION

Prior to the assignment of a respiratory protection device, employees shall receive training that includes the following:

- Explanation of KYTC's respirator policy
- Responsibilities of the Secretary's Office of Safety
- Employee's responsibilities
- Explanation of respiratory hazards posed by the operations and regulated areas
- Explanation of current administrative and engineering controls used in conjunction with respiratory protection
- Explanation of the respirator selection process
- Functions, capabilities, and limitations of selected respirator

TRAINING & EDUCATION (CONT.)

- Demonstrations on the donning, fit testing, and proper wearing of the respirator
- Respiratory maintenance, cleaning, and storage
- Federal and state governments' regulatory requirements
- Emergency situations

RESPIRATOR MAINTENANCE & CARE

Employees are responsible for the maintenance, cleaning, inspection, and storage of their assigned respiratory protection device.

- Maintenance
  - When exposed to solvents (MEK, MDI, HDI), cartridge-type respirators are expected to provide 36 hours of use, after which the cartridges should be discarded (based on MEK concentration of 50 PPM). Cartridges should always be changed sooner if breakthrough occurs.

    Note: A pre-filter must be used with cartridges and should be discarded as breathing becomes difficult.

  - When there is exposure to lead dust (no odors, gas, and/or vapors present), HEPA filters (N-100, R-100, or P-100) are to be used and should be changed daily or as breathing becomes difficult.
  - Compressed air or compressed oxygen used for respiration shall be of high quality and at a minimum shall meet the specification for Grade D breathing air.

- Cleaning and Disinfecting
  - All respirators shall be cleaned and disinfected per the manufacturer requirements.
  - Respirators **permanently** assigned to an employee for his or her exclusive use shall be cleaned and disinfected as needed.
  - Respirators assigned on an **emergency or temporary basis** shall be cleaned and disinfected after each use and prior to each assignment to another employee.

RESPIRATOR MAINTENANCE & CARE (CONT.)

- Inspection and Replacement
  - All respirators used under **permanent or temporary assignment** shall be inspected prior to each donning by the assigned employee. The employee shall be responsible for inspection of the following points:
    - Straps
    - Cartridges
    - Face seal
    - Exhaust and inlet valves
    - Air hose connections or blower
    - Batteries
    - Lens
  - **Emergency assigned** respirators shall be inspected at least monthly. All points required by the manufacturer, as well as those listed above for permanent or temporary assignment inspection, shall be included in the emergency respirator inspection process.
  - Respirators shall be replaced in accordance with the manufacturer's recommendations.
- Storage
  - All respirators shall be stored in a clean, contaminant-free environment.
  - At the end of work shift, cartridges shall be removed and disposed of, then face piece wiped with lead wipes and placed in plastic bag to ensure face piece is free from any contaminant.
  - Whenever possible, respiratory protection should be stored in a secured area.

SPECIAL STATEMENT REGARDING LEAD EXPOSURE

In past years, metal on highway bridges may have been painted with lead paint. Bridge coatings may also contain isocyanates, which are sensitizers. When metal covered with lead paint is cut, sanded, ground, heated, burned, or blasted with abrasives, lead dust gets into the air and on environmental surfaces. Spray painting may also require the use of respirators to protect against solvent vapors in paint.

SPECIAL STATEMENT REGARDING LEAD EXPOSURE

Anyone near these activities can get lead poisoning. Therefore, respiratory protection is required when an employee enters a containment area where work activities as stated above are being or have recently been conducted.

A respirator shall also be required if air monitoring reveals a Permissible Exposure Limit (PEL) greater than 50 µg/m^3 for lead. Lead awareness information shall be provided to employees prior to possible exposure (**SHA 406-4**).

PROGRAM EVALUATION

On an annual basis, the Secretary's Office of Safety or their designee shall review all points of the program to ensure effectiveness and workability. Furthermore, all program points shall be reviewed in comparison to current state and federal regulations to ensure proper compliance.

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ADMINISTRATION GUIDE

Section	*Subject*
JOB ENVIRONMENT	Silica Exposure Control

REFERENCES

29 CFR 1926.1153; Occupational Safety and Health Administration (OSHA) Silica Rule; **SHA 406-1**; **SHA 506**

BACKGROUND INFORMATION

According to OSHA, respirable crystalline silica are very small particles (100 times smaller than sand) generated during tasks such as (but not limited to) core drilling, asphalt cutting, concrete cutting, jack hammering, concrete mixing, and sand blasting. Employees exposed to silica are at increased risk of developing serious illnesses. Therefore, it is of utmost importance to limit or, when possible, eliminate employee exposure to silica.

PURPOSE & SCOPE

In continuing pursuit of a safe and healthy workplace, the Kentucky Transportation Cabinet (KYTC) has instituted a silica exposure control plan to be followed by all employees.

ADMINISTRATIVE RESPONSIBILITY

The responsibility for the administration of this policy shall lie with the Secretary's Office of Safety. The day-to-day aspects of the policy are the responsibility of safety personnel and employees who are potentially exposed to silica dust. Other assistance shall be provided as needed by contacting the Secretary's Office of Safety.

COMPETENT PERSON REQUIREMENTS

A competent person should be designated to frequently and regularly inspect job sites, materials, and equipment to implement the silica exposure control plan.

A competent person is someone who:

- Can identify existing and foreseeable respirable crystalline silica hazards
- Is authorized to promptly eliminate or minimize silica hazards
- Has the knowledge and ability to implement the exposure control plan

COMPETENT PERSON REQUIREMENTS (CONT.)

KYTC can designate any employee to be a competent person if the employee is qualified, including the employee who does the work on a jobsite. For example, employees who go to jobsites alone can be designated a competent person if they know how to properly implement controls on the tools they use, can recognize if the controls are not working, and can correct the non-working control.

Specifically designed training is not required for an employee to serve as a competent person. KYTC is responsible for determining the training necessary for an employee to implement the silica exposure control plan. Such training will vary depending on the type of work done.

In some cases, successfully completing the training required by the silica standard and OSHA's Hazard Communication standard will be sufficient. In other cases, additional training may be needed.

For example, a competent person at a small asphalt cutting job might only need training on controls for power tools that they do not typically use to do their own tasks. This is so they could help employees who may have questions about or problems with dust controls on those tools. In contrast, a competent person for heavy equipment tasks may require more specialized training in heavy equipment inspection or in recognizing different hazard types to determine if exposures might be a concern.

GENERAL WORK PRACTICES

Safe work practices include the following:

- Limit Workspace Access

  Schedule the work so that only employees who are actively engaged in the task (cutting, drilling, jackhammering) are in the area.

- Respiratory Protection

  - Silica dust on work surfaces and equipment must be cleaned using wet methods or a HEPA-filtered vacuum (see below).

    Do not use compressed air or dry sweeping for removing dust and debris containing silica from work surfaces.

  - Use a portable fan to exhaust air and prevent the buildup of dust when appropriate.

GENERAL WORK PRACTICES (CONT.)

- Use a respirator with APF of 10 throughout the entire time the task is being performed. (**SHA-406-1** and **SHA-506** provide information on selection, training, proper use, and fit testing requirements.)

➢ Wet Methods

- Ensure that water is being applied at all times when work is in progress.
- Check shrouds and hoses to make sure they are not damaged before starting work.
- Make sure the hoses do not become kinked or bent while working.
- Use equipment with the appropriate, commercially available water supply system or the assistance of a co-worker using a hand-held water supply system at the flow rate recommended by the equipment manufacturer.

➢ HEPA-Filtered Vacuum Use

- Use switch on vacuum to activate filter cleaning at the frequency recommended by the manufacturer.
- Replace vacuum bags as needed to prevent overfilling.
- Dispose of used vacuum bags in a container and keep the container sealed.
- Use the equipment controls according to manufacturer's instructions for reducing the release of visible dust. If visible dust increases, check controls and adjust as needed.
- May use the assistance of a co-worker using a vacuum dust collection system with the following:
  - Filter at least 99% efficient
  - Filter cleaning mechanism

CONSTRUCTION SITE EXPOSURE CONTROL METHODS

29 CFR 1926.1153 addresses occupational exposure to silica on construction sites. Table 1 of this standard, *Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica,* matches common construction tasks with dust control methods so managers know exactly how to limit worker exposures to silica.

The dust control measures listed in Table 1 include methods proven to be effective, such as using water to keep dust from getting into the air or using ventilation to capture dust.

CONSTRUCTION SITE EXPOSURE CONTROL METHODS (CONT.)

In some operations, respirators may also be needed. Managers who follow Table 1 correctly are not required to measure worker exposure to silica and are not subject to the permissible exposure limits (PEL).

29 CFR 1926.1153, including Table 1, is available online at:

https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1153

ALTERNATIVE CONSTRUCTION SITE EXPOSURE CONTROL METHODS

Employers who do not use the control methods in 29 CFR 1926.1153, Table 1, for construction sites must take the following steps to ensure worker safety:

- Measure the amount of silica that workers are exposed to if it may be at or above an action level of 25 µg/m^3 (micrograms of silica per cubic meter of air), averaged over an eight-hour day and recorded on TC 25-167 form, *Air Sampling Report* (**Exhibit 9014**).

- Protect workers from respirable crystalline silica exposures above the permissible exposure limit of 50 µg/m^3, averaged over an eight-hour day.

- Use dust controls to protect workers from silica exposures above the PEL.

- Provide respirators to workers when dust controls cannot limit exposures to the PEL.

CONSTRUCTION SITE STANDARD REQUIREMENTS

Regardless of which exposure control method is used, all construction employers covered by the standard are required to:

- Establish and implement a written silica exposure control plan that identifies tasks involving exposure and methods used to protect workers, including procedures to restrict access to work areas where high exposures may occur.

- Designate a competent person to implement the silica exposure control plan.

CONSTRUCTION SITE STANDARD REQUIREMENTS (CONT.)

- Restrict housekeeping practices that expose workers to silica where alternatives are available.

- Offer medical exams, including chest X-rays and lung function tests, every three years for workers who are required by the standard to wear a respirator for 30 or more days per year.

- Train employees on work operations that result in silica exposure and ways to limit exposure.

- Keep records of workers' silica exposure and medical exams.

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Section	Subject
JOB ENVIRONMENT	Asbestos Awareness

REFERENCES

29 CFR 1910.1001; 29 CFR 1926.1101; Occupational Safety and Health Administration (OSHA); National Institute for Occupational Safety and Health (NIOSH)

BACKGROUND INFORMATION

Asbestos fibers enter the body through breathing or swallowing and can become lodged in the respiratory or digestive systems. Exposure to asbestos can cause many disabling or fatal diseases that may take years to develop, including asbestosis, a chronic lung disease characterized by scarring and stiffening of the lungs. Asbestos-related diseases are typically associated with abnormal lung function, shortness of breath, increased vulnerability to lung infections, and sometimes death.

Exposure to asbestos has been shown to cause lung cancer, mesothelioma, and cancer of the stomach and colon. Mesothelioma is a rare cancer of the thin membrane lining of the chest and abdomen. Symptoms of mesothelioma include shortness of breath, pain in the walls of the chest, and abdominal pain. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

The potential for a product containing asbestos to release breathable fibers depends on its degree of friability. "Friable" means that the material can be crumbled with hand pressure and is therefore likely to emit fibers. The fibrous or fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are considered to be friable, and they readily release airborne fibers if disturbed. Materials such as vinyl-asbestos floor tile or roofing felts are considered nonfriable and generally do not emit airborne fibers unless subjected to sanding or sawing operations. Asbestos-cement pipe or sheet can emit airborne fibers if the materials are cut, sawed, or broken during demolition operations.

Permissible exposure to airborne asbestos fibers may not exceed 0.2 fibers per cubic centimeter of air (0.1 f/cc) averaged over the 8-hour workday.

PURPOSE & SCOPE

The purpose of the asbestos awareness program is to establish guidelines and procedures in the operations and maintenance of asbestos containing materials at Kentucky Transportation Cabinet (KYTC) facilities, and to protect all employees, contractors, visitors, and vendors from potential health hazards of asbestos-related diseases.

This program applies to all buildings and structures owned by KYTC, employees and subcontractors of KYTC, occupants of KYTC buildings, and representatives of external organizations who may come into contact with or disturb asbestos-containing material in KYTC buildings. The program applies to routine work during which an employee may encounter asbestos, as well as work specifically undertaken to repair or remove asbestos-containing material.

This program is intended to address comprehensively the following issues:

- Evaluating and identifying potential sources of asbestos
- Evaluating the associated potential hazards
- Communicating information concerning these hazards
- Establishing appropriate procedures and protective measures for employees

This written program should be communicated to all personnel who are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts.

ADMINISTRATIVE RESPONSIBILITY

Effective implementation of this program requires support from all levels of management. The Secretary's Office of Safety Executive Director, or designee, is responsible for the oversight of all facets of this program and has full authority to make necessary decisions to ensure success of the program. The Secretary's Office of Safety Executive Director, or designee, is authorized to amend this program and shall halt any operation on KYTC property where there is a danger of serious personal injury.

Safety personnel will annually review and revise the asbestos awareness program as necessary, including consideration of the following:

- Regulatory updates
- Current KYTC procedures
- Facility operations
- Accidents or close-calls

PRE-CONSTRUCTION INSPECTION & SAMPLING

Prior to construction activities, the KYTC project manager or designee should ensure that all presumed asbestos-containing material (PACM) has been fully evaluated and verified. If during construction activity a suspect material is discovered, the area will be cordoned off until sampling has been completed and recorded on TC 25-167, *Air Sampling Report* (**Exhibit 9014**).

If the material is PACM:

- KYTC Office of Support Services and the Secretary's Office of Safety shall immediately be notified.
- All employees shall be protected from exposure to asbestos fibers by isolating and controlling access to all affected areas during asbestos removal work.
- All tasks involving the removal or disturbance of asbestos-containing material shall be conducted by a certified asbestos abatement contractor and only after appropriate work controls have been identified and implemented.
- A qualified supervisor shall be available at asbestos controlled work sites during all activities.
- Proper personal protective equipment, vacuums, and HEPA filters shall be used and properly maintained.
- All contractors must provide the appropriate certifications and documentation prior to conducting the work.

PRESUMED ASBESTOS CONTAINING MATERIAL (PACM)

Certain building materials installed prior to 1980 must be presumed to contain asbestos unless proven to be asbestos-free. This is to prevent over sampling or sampling that might trigger an unnecessary remedial response such as thermal insulation, ceiling, and floor tile. Sampling these items would damage them and trigger their replacement. Typically, sampling is only performed on these items when they are already intended to be disturbed or are already damaged.

PRESUMED ASBESTOS CONTAINING MATERIAL (PACM) (CONT.)

PACM such as transite/cement board, thermal insulation, and floor/ceiling tiles, or suspected asbestos-containing materials shall not be:

- Drilled
- Hammered
- Cut
- Sawed
- Sanded
- Broken
- Damaged
- Moved
- Disturbed

When there is reasonable belief that an asbestos hazard exists, the employee should stop work activities and promptly contact his or her supervisor. The supervisor should contact safety personnel or the Secretary's Office of Safety to assess the presence of asbestos.

Should PACM be detected, safety personnel or the Secretary's Office of Safety should follow proper procedures to either abate or render safe the area of concern. The employee will be informed when the worksite is determined to be safe and may then proceed with completion of the assignment.

REPORTING SUSPECTED ASBESTOS CONTAINING MATERIAL (ACM)

When asbestos containing material is suspected, the employee should stop work activities and promptly contact his or her supervisor. The supervisor should contact the safety coordinator or the Secretary's Office of Safety to assess the presence of asbestos.

Should asbestos be confirmed, safety personnel or the Secretary's Office of Safety shall follow proper procedures to either abate or render safe the area of concern.

If there is reasonable doubt about the composition of a friable material, it will be treated as asbestos until confirmed or refuted by testing. If asbestos is confirmed, work will continue to be suspended until levels are below 1%.

REPAIR & MAINTENANCE OF ASBESTOS CONTAINING MATERIAL (ACM)

Cleanup and repair of asbestos-containing material shall only be performed by outside contractors who have been properly trained. KYTC employees are not to be involved in any asbestos repairs, maintenance, or removal operations.

All employees, visitors, vendors, and contractors will be notified in advance when work involving asbestos is to be carried out in any area of KYTC buildings which they occupy.

There are several KYTC buildings that have floor tiles containing asbestos; however, regular washing, waxing, stripping, and buffing of these tiles will not release dangerous levels of asbestos.

To prevent inadvertent release of asbestos from these tiles, employees shall take note of the following:

- Floor tiles shall not be sanded.
- When stripping floors, use low abrasion pads at speeds lower than 300 rpm, and use wet methods.
- Burnishing or dry buffing may be done only when the flooring has enough of a finish that the pad cannot contact the asbestos-containing material.
- Broken and damaged asbestos floor tiles must be removed by asbestos abatement workers.

TRAINING

All custodial and housekeeping employees may not carry out work without first being trained. In addition, all maintenance personnel that may perform duties where they might encounter PACM shall receive awareness training.

Awareness training may be repeated annually and may include:

- Health effects of asbestos
- Locations, signs of damage and deterioration of asbestos-containing materials, and presumed asbestos-containing materials
- Types, properties, and uses of asbestos
- Hazards of asbestos fiber inhalation and ingestion
- Types of activities that could release asbestos fibers, and proper response to such episodes

ASBESTOS EXPOSURE EMERGENCY FIRST AID PROCEDURES

For emergency medical assistance, contact the local emergency number (911). Report all work-related incidents to safety personnel or the Secretary's Office of Safety.

- Eye Exposure

  Wash eye(s) immediately with large amounts of water for at least 15 minutes while occasionally lifting the lower and upper lids. Get medical attention as soon as possible.

- Skin Exposure

  Immediately flush the affected area with copious amounts of water. Remove any contaminated clothing and flush exposed skin areas. Get medical attention as soon as possible.

- Swallowing Exposure

  If asbestos has been swallowed, call 911 immediately.

- Respiratory Exposure

  Get the victim to open, fresh air immediately. Keep the victim warm and at rest. Get medical attention as soon as possible.

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ADMINISTRATION GUIDE

Section	*Subject*
JOB ENVIRONMENT	Lead Exposure Minimization

REFERENCES

29 CFR 1910.1025, *General Industry*; 29 CFR 1926.62, *Construction*; Occupational Safety and Health Administration (OSHA); **SHA-406-1**; **SHA-506**

DEFINITIONS

- *Action level* – Employee exposure, without regard to the use of a respirator, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 µg/m^3) averaged over an 8-hour period.

- *Permissible exposure limit (PEL)* – Employee exposure, without regard to the use of a respirator, to an airborne concentration of lead of 50 micrograms per cubic meter of air (50 µg/m^3) averaged over an 8-hour period. The Kentucky Transportation Cabinet (KYTC) is required to ensure that no employee is exposed to lead at concentrations greater than the PEL.

BACKGROUND INFORMATION

Bridge maintenance painting projects require the disturbance of existing lead-based paints on the structure. Identified operations which disturb or remove lead-based paint include water washing, hand and power tool cleaning, and abrasive blasting. Inhaling elevated levels of lead-containing dust and fumes may lead to serious illness.

PURPOSE & SCOPE

The Kentucky Transportation Cabinet (KYTC) lead exposure minimization program applies to potential hazardous exposures employees may encounter within the scope of their job duties as inspectors on bridge painting projects. It addresses the levels of exposure and the methods that will be used to minimize employees' exposure to the identified hazards associated with the removal and application of lead-containing coatings on steel bridges and structures in accordance with 29 CFR 1910.1025.

INITIAL EXPOSURE DETERMINATION

The Secretary's Office of Safety shall determine if any employee may be exposed to lead at or above the action level.

INITIAL EXPOSURE DETERMINATION (CONT.)

This initial determination will be made based upon a representative sample of the exposed employees who KYTC reasonably believes may be exposed to the greatest airborne concentrations of lead. Air samples shall be recorded on TC 25-167, *Air Sampling Report* (**Exhibit 9014**).

Initial determinations shall be made for each of the operations producing exposures to lead (for example, water washing, hand and power tool cleaning, and abrasive blasting). Acceptable sampling and analysis methods with an accuracy (to a confidence level of 95%) of not less than plus or minus 20% for airborne concentrations of lead equal to or greater than 30 µg/m^3 shall be used.

During the process of making an initial determination, employees shall use respiratory protection if there is a suspected exposure risk in accordance with the KYTC respiratory protection program and applicable OSHA standards. (**SHA-406-1**, **SHA-506**)

If an initial determination shows the possibility of employee exposure to lead at or above the action level, KYTC shall conduct monitoring that is representative of the exposure for each employee in the work area. If an initial determination shows that no employee is exposed to airborne concentrations of lead at or above the action level, no further action is required unless changes occur that may result in a suspected increase in lead levels. (See "Repeat Monitoring Frequency" in this section for additional information.)

The Secretary's Office of Safety is required to keep all records of exposure monitoring for airborne lead. These records shall include the name and job classification of employees measured, details of the sampling and analytic techniques, sampling results, and the type of respiratory protection being worn by the person sampled. Air samples shall be recorded on TC 25-167, *Air Sampling Report* (**Exhibit 9014**).

The Secretary's Office of Safety is also required to keep all records of biological monitoring and medical examination results. These shall include the names of the employees, the physician's written opinion, and a copy of the results of the examination. All of the above records must be kept for 40 years, or for at least 20 years after termination of employment, whichever is longer [29 CFR 1910.1025(n)].

REPEAT MONITORING FREQUENCY

- If the initial monitoring reveals employee exposure to be **below the action level**, measurements will be repeated if:
  - There is a production, process, control, or personnel change that may result in new or additional exposures to lead.
  - The employer has reason to suspect a change that may result in new or additional exposures to lead.

- If the initial determinations or subsequent monitoring reveals employee exposure to be **at or above the action level but below the PEL**, KYTC should:
  - Repeat monitoring at least every 6 months.
  - Continue monitoring every 6 months until at least two consecutive measurements, taken at least 7 days apart, are below the action level.

    Note: At that time, KYTC shall discontinue monitoring for that employee except as noted above.

- If the initial determination or subsequent monitoring reveals employee exposure to be **at or above the PEL**, KYTC should:
  - Repeat monitoring every 3 months.
  - Continue monitoring every 3 months until at least two consecutive measurements, taken at least 7 days apart, are below the PEL but at or above the action level.

    Note: At that time, KYTC shall repeat monitoring for that employee at least every 6 months for the duration of the employee's placement in that job.

EMPLOYEE NOTIFICATION OF MONITORING RESULTS

KYTC should notify employees within 5 working days after the receipt of monitoring results. Each employee within the affected area shall be notified in writing of the results which represent that employee's exposure. If the results indicate that the representative employee exposure, without regard to respirators, exceeds the PEL, KYTC should include in the written notice a statement that the PEL was exceeded and a description of the corrective action taken (or to be taken) to reduce exposure to or below the PEL.

IMPLEMENTATION OF CONTROLS

If an employee is exposed to lead above the PEL for more than 30 days per year, KYTC shall implement engineering, administrative, and personal protective equipment (PPE) controls (**SHA-401**) to reduce and maintain employee exposure to lead below the PEL.

Engineering Controls

- Contractors using **abrasive blasting** for removal of lead-based coatings shall:
  - Provide appropriate containment ventilation.
  - Monitor air movement within the containment.
  - Verify that negative pressure within the containment is achieved and maintained.
  - Document air velocities to effectively control worker exposure.
  - Provide records of monitoring procedures and quarterly or more frequent test data to KYTC's representative when requested.
  - Monitor the system's effectiveness in controlling exposure within 5 days of any change in production, process, or controls that might result in a change in employee lead exposure.

  Note: If the vacuum or air flow provided does not adequately remove the airborne particulate from the containment (for example, downdraft and cross draft velocities do not produce negative pressure within the containment), the contractor shall cease abrasive blasting operations until appropriate corrective measures are taken, and the containment exhaust system is working properly.

- Contractors using **hand and power tools** to remove lead-based coatings shall clean all surfaces using vacuums fitted with appropriate HEPA filters after completion of work and prior to inspection.

- Contractors using water washing to remove lead-based coatings shall clean all debris from containment using vacuums fitted with appropriate HEPA filters to prevent an increase in respirable airborne particulate after the debris has dried.

  Note: Initial air monitoring data for KYTC inspectors shall be used to determine if additional engineering or administrative controls are necessary for this operation.

IMPLEMENTATION OF CONTROLS (CONT.)

Administrative Controls

- Contractors shall:
  - Establish a clearly marked, regulated area on all lead paint projects to limit access to areas of lead exposure high enough to require the use of a respirator and other protective measures.
  - Furnish appropriate area monitoring and documentation of lead levels used to establish the boundaries of the designated regulated area.
- KYTC shall make a good faith effort to ensure that the painting contractor posts the following warning signs as required by 29 CFR 1910.1025(m)(2)(i) in each work area where the PEL is exceeded:

DANGER

LEAD MAY DAMAGE FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM. DO NOT EAT, DRINK, OR SMOKE IN THIS AREA.

  These signs shall be illuminated and cleaned as necessary so that the legend is readily visible. The employer may use additional signage as required by other statutes, regulations, or ordinances.

- All KYTC employees working as inspectors or having direct responsibility for specific operations on the project shall:
  - Be provided with the appropriate annual training and PPE for entering regulated areas
  - Maintain and replace as needed all PPE in accordance with applicable OSHA standards
- KYTC employees shall not enter a regulated area:
  - Unless properly trained and made aware of the lead-related hazards
  - While an abrasive blast operation, hand or power tool removal of rust and existing coatings, or water washing is ongoing
  - For inspection until cited operations have ceased, the area has been appropriately vacuumed, and the contractor's quality control representative has inspected the cleaned surfaces
- If all feasible engineering controls are in place and working properly, KYTC supervisors shall establish a job rotation schedule for any KTYC employee exposed to lead concentrations at or above the PEL.

IMPLEMENTATION OF CONTROLS (CONT.)

Personal Protective Equipment (PPE) Controls

- Respiratory Protection

KYTC shall supply the appropriate respirators and fit-testing for all employees required by this section to wear respiratory protection.

KYTC employees shall be required to wear respiratory protection during:

- Periods necessary to install or implement engineering and work practice controls
- Operations for which engineering and work practice controls are not sufficient to reduce employee exposures to or below the PEL
- Periods when an employee requests a respirator

Respirator selection, use, maintenance, and training will be performed in accordance with the KYTC Respiratory Protection Program (**SHA 406-1**).

- Protective Work Clothing & Equipment

If an employee is exposed to lead above the PEL (without regard to the use of respirators) or where the possibility of skin or eye irritation exists, KYTC shall:

- Provide protective work clothing and equipment at no cost to the employee, including (but not limited to) coveralls or similar full-body work clothing, gloves, hats, disposable shoe coverlets (where feasible), and safety glasses or other appropriate protective equipment which complies with 29 CFR 1910.133 and 29 CFR 1926 Subpart E.
- Ensure the employee uses appropriate protective work clothing and equipment. Employees refusing to wear required protective clothing or equipment will be subject to disciplinary action up to and including dismissal from KYTC.

KYTC shall also:

- Provide the personal protective clothing required in 29 CFR 1910.1025(g)(1) in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200ug/m3 of lead as an 8-hour TWA.

IMPLEMENTATION OF CONTROLS (CONT.)

- Provide for the cleaning, laundering, or disposal of protective clothing and equipment.

- Repair or replace required protective clothing and equipment as needed to maintain their effectiveness.

- Ensure that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose.

- Ensure that contaminated protective clothing to be cleaned, laundered, or disposed of, is placed in a closed container in the change room which prevents dispersion of lead outside the container and shall not be worn off site under any circumstance.

- Inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

- Ensure that labels of bags or containers of contaminated protective clothing and equipment include the following information:

  DANGER: CLOTHING AND EQUIPMENT CONTAMINATION WITH LEAD. MAY DAMAGE FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM. DO NOT EAT, DRINK, OR SMOKE WHEN HANDLING. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

- Prohibit the employee's removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

If the instituted engineering, administrative, and personal protective equipment (PPE) controls are not sufficient to reduce employee exposure to or below the PEL, KYTC shall reduce exposures to the lowest feasible level and supplement those reductions with the use of respiratory protection that complies with KYTC's respiratory protection program. (**SHA-406-1**, **SHA-506**)

HYGIENE FACILITIES & PRACTICES

Food, beverages, tobacco products, and cosmetics shall not be present or used in areas where employees are exposed to lead above the PEL (without regard to the use of respirators), except in the following locations:

- Change Rooms

  KYTC employees shall be permitted to use clean change rooms provided by the contractors for their employees on the jobsite. Change rooms shall be equipped with separate storage facilities for protective work clothing and equipment and for street clothing to prevent cross contamination. When working in areas where they are exposed to lead above the PEL, employees shall remove all contaminated protective work clothing at the end of the work shift and change to street clothing prior to leaving the jobsite.

  All contaminated protective work clothing shall be placed in the specified closed container in the change room to prevent dispersion of lead outside the container. This container shall be labeled as follows:

  CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH LOCAL, STATE, OR FEDERAL REGULATIONS.

  Contaminated work clothing shall be contained, laundered, and~~/or~~ disposed of with other abatement waste in accordance with the provisions of 29 CFR 1910.1025(g).

- Showers

  KYTC employees shall be permitted the use of the showers provided by the contractors for their employees on the jobsite. When working in areas where they are exposed to lead above the PEL, KYTC employees should shower at the end of the work shift prior to leaving the jobsite. These employees should not leave the jobsite wearing any clothing or equipment worn during the work shift.

- Lavatories (Hand Wash Stations)

  KYTC employees shall be permitted the use of the hand wash stations provided by the contractors for their employees on the jobsite. When exiting a lead-exposed work area, employees should wash their face and hands prior to eating, drinking, using tobacco products, or applying cosmetics.

HYGIENE FACILITIES & PRACTICES (CONT.)

- Lunchrooms

  KYTC employees shall be permitted the use of lunchroom areas provided by the contractors for their employees on the jobsite. When exiting a lead-exposed work area, employees should wash their face and hands prior to eating, drinking, using tobacco products, or applying cosmetics. Employees should not enter the lunchroom facilities with protective work clothing or equipment unless surface lead dust has been removed by vacuuming or other appropriate cleaning method.

MEDICAL SURVEILLANCE & BIOLOGICAL MONITORING

KYTC shall institute a medical surveillance and biological monitoring program for all employees who are or may be exposed to lead above the action level for more than 30 days per year.

All medical examinations and procedures shall be performed by or under the supervision of a licensed physician. KYTC will provide the required medical surveillance (including multiple physician review) without cost to employees and at a reasonable time and place.

The Secretary's Office of Safety shall coordinate the scheduling of physicals, fit-tests, and blood sampling tests or blood draws when notified by the Division of Construction of employees needing this service.

All medical surveillance and biological monitoring shall be performed under the current contract and meet all applicable OSHA requirements. In addition, the Secretary's Office of Safety shall maintain all medical surveillance, biological monitoring, and air monitoring records for employees of the Division of Construction covered by this program.

MEDICAL REMOVAL PROTECTION

KYTC shall remove an employee from work having an exposure to lead at or above the action level on each occasion as follows:

- Periodic and follow-up blood sampling tests indicate the employee's blood lead level is at or above 50 µg/ 100 g of whole blood.

- Final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition placing him or her at increased risk of health impairment from lead exposure.

MEDICAL REMOVAL PROTECTION (CONT.)

Recordkeeping is required for employees temporarily removed from their job under the medical removal protection program. This record shall include the employee's name and social security number, date of removal and return, how the removal was or is being accomplished, and if the reason for the removal was an elevated blood lead level. The employer is required to keep each medical removal record for the duration of an employee's employment. Medical records shall be deemed confidential information.

RETURN FROM MEDICAL REMOVAL PROTECTION

KYTC shall return an employee removed due to a blood lead level at or above 50 µg/ 100 g to former job status when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 40 µg/ 100 g of whole blood, or it is determined the employee no longer has a detected medical condition which places the employee at increased risk of health impairment from lead exposure.

KYTC may return the employee to former job status, end any special protective measures provided to the employee, and remove any limitations placed upon the employee consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status with the following two exceptions:

- Initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician.

- Employee has been on removal status for the preceding 18 months due to an elevated blood lead level.

If either of these two exceptions applies, then KYTC shall await a final medical determination to identify the appropriate course of action.

EMPLOYEE INFORMATION & TRAINING

KYTC shall:

- Provide employees with information on medical removal protection benefits as defined in 29 CFR 1910.1025.
- Inform all employees who could be exposed to airborne lead at any level of the content of Appendices A and B of 29 CFR 1910.1025.

EMPLOYEE INFORMATION & TRAINING (CONT.)

- Institute a training program for and ensure the participation of all employees who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists.
- Provide initial training prior to the time of initial job assignment and repeat the training at least annually thereafter for each employee covered by this standard.

The training program shall include at least the following information:

- Content of 29 CFR 1910.1025, including appendices.
- Specific nature of the operations which could result in exposure to lead above the action level.
- Purpose, proper selection, fitting, use, and limitations of respirators.
- Purpose and description of the medical surveillance program and the medical removal program, including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females).
- Engineering controls and work practices associated with the employee's job assignment.
- Contents of any compliance plan in effect.
- Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

TEAM KENTUCKY
TRANSPORTATION CABINET
Secretary's Office of Safety

ADMINISTRATION GUIDE

Section	Subject
JOB ENVIRONMENT	Confined Spaces

REFERENCES 29 CFR 1910.146; 29 CFR 1926 Subpart AA; 803 KAR 2:200; KRS 338.015

DEFINITIONS

- *Confined Space* – According to OSHA 29 CFR 1910.146(b), a confined space is defined as follows:
  - Large enough and so configured that an employee can enter and perform assigned work
  - Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits)
  - Not designed for continuous employee occupancy

- *Entry* – The action by which a person passes through an opening into any confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

- *Entry permit (permit)* – Written or printed document provided by the employer to control entry into a confined space and that contains the information specified in paragraph 1910.146(f) of the Occupational Safety and Health Administration (OSHA) Regulation Standard. (Exhibit 9015)

- *Non Permit-Required Confined Space* – Meets the definition of a confined space but does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

- *Permit-Required Confined Space* – Meets the definition of a confined space but has one or more of the following characteristics:
  - Contains or has the potential to contain a hazardous atmosphere
  - Contains a material that has the potential for engulfing an entrant
  - 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
  - Contains any other recognized serious safety or health hazard

DEFINITIONS (CONT.)

To assist in determining if a confined space meets the criteria of a "permit-required confined space," personnel may complete the *Permit Required Confined Space Checklist* in the Boosting Occupational Outcomes in Transportation (BOOTS) safety management system.

BACKGROUND INFORMATION

According to OSHA 29 CFR 1910.146(b), confined spaces can be hazardous for several reasons:

- *Hazardous atmospheres.* The nature of many confined spaces can cause them to have poor atmospheres such as a lack of oxygen, flammable gases, and toxic gases.
- *Engulfment or entrapment.* Confined spaces oftentimes have the potential for employees to be trapped or buried.
- *Restricted entry.* Confined spaces are not made for continuous occupancy by humans and may have limited entry and exit.
- *Amplification of occupational hazards.* For example, noises are louder because they cannot escape into the atmosphere. Heat builds up quickly, as well, and can lead to heat exhaustion.

PURPOSE & SCOPE

This policy provides procedures for the safe entry and work practices in confined spaces and applies to all employees who enter them. Confined spaces are dangerous work environments and should always be treated with extreme caution; however, there are some confined spaces so dangerous that they may not be appropriate for any entry. Therefore, the Secretary's Office of Safety shall be notified before any confined space is accessed.

ADMINISTRATIVE RESPONSIBILITIES

Supervisors shall notify the Secretary's Office of Safety before any confined space is accessed, and shall note any questions or concerns regarding the confined space, assigned employees, or the project at this time, as well.

Supervisors should stay alert to changes in confined space status as work is being performed; some non permit-required spaces may change to permit-required spaces according to the task.

Any bids for contracts must specify that the bidder will furnish a copy of their confined space program and documentation that the individuals working in the area have received the proper training. A copy of this information should be forwarded to the Secretary's Office of Safety for record retention.

NON PERMIT-REQUIRED CONFINED SPACES

Unless the confined space is clearly marked as a non permit-required confined space, it shall be treated as a permit-required confined space until designated otherwise by a competent person. Therefore, KYTC employees must receive approval from their designated safety coordinator prior to entering a non permit-required confined space unless it is clearly marked.

Employees should also keep in mind that the status of a confined space is subject to change, and that non permit-required spaces may become permit-required spaces as the work is being performed. For example, welding in a non permit-required confined space can create a hazardous atmosphere, thus making it a permit-required confined space.

PERMIT-REQUIRED CONFINED SPACES

Areas requiring a confined space permit prior to entry may include, but are not limited to, the following:

- Drainage culvert /manhole inspections
- Bridge inspections with enclosed cable ways and access compartments
- Lift pump station inspections
- Ferry boat/vessel compartment maintenance and inspections
- Ventilation system maintenance and inspections
- Tank or storage bin maintenance with limited means for entry and exit

PRIOR TO ENTERING ANY CONFINED SPACE

All employees who may enter, attend, or supervise employees entering either non permit-required or permit-required confined spaces must have attended a confined space training program or refresher course within the past year, and hold current First Aid and CPR certification [29 CFR 1910.146(G) and 29 CFR 1910(K)(2)(iii)]. New employees who will participate in confined space entry shall be trained prior to entering a confined space. Rescue and recovery training shall be completed annually.

The Secretary's Office of Safety shall be notified before an employee enters any confined space. Questions or concerns regarding the confined space, assigned employees, or the project shall be noted at this time, as well.

Any employee who expresses feeling unsafe or uncomfortable entering a confined space cannot be forced to enter the space and perform the work. Some employees are claustrophobic and have a fear of confined spaces, or the employee may fear the spaces for other reasons.

PRIOR TO ENTERING A PERMIT-REQUIRED CONFINED SPACE

As previously stated, unless the confined space is clearly marked as a non permit-required confined space, it shall be treated as a permit-required confined space until designated otherwise by a competent person.

Prior to entering a permit-required confined space, a BOOTS *Confined Space Entry Permit* shall be completed. If BOOTS is not available, TC 25-161, *Confined Space Entry Permit* (**Exhibit 9015**), shall be completed in addition to the following:

- Equipment operating in the confined space should be shut down and locked out/tagged out according to the KYTC lockout/tagout program (**SHA-406-7** and **SHA-407-6**).
- Any standing water or liquid shall be removed to a depth of less than 2 feet. Preferred removal should be accomplished by an intrinsically safe method.
- Air will be tested using a calibrated direct reading gas monitor to ensure that the atmosphere is within OSHA limits for human occupancy.
  - Test results will be logged on TC 25-167, *Air Sampling Report* (**Exhibit 9014**).
  - Personnel conducting atmospheric testing shall be certified or have demonstrated knowledge and proficiency in the type of meter being used. Further review of the procedures shall be conducted by a certified industrial hygienist or registered safety engineer based on the evaluation of the hazard.
  - To be considered safe for entry, the following samples must be taken in the following order and reveal results within acceptable ranges:
    1. *Oxygen.* Level must be between 19.5% through 23.5%. An atmosphere containing less than 19.5% oxygen by volume is considered an oxygen deficient atmosphere. An atmosphere containing more than 23.5% oxygen by volume is considered an oxygen enriched atmosphere.
    2. *Lower Flammable Level.* Flammable gases, vapors, or mists must be below 10% of the lower flammable limit (LFL).

PRIOR TO ENTERING A PERMIT-REQUIRED CONFINED SPACE (CONT.)

3. *Toxic Gases.* No presence of toxic gases is allowed. If any of these conditions exist, **do not** enter the confined space. Mechanical ventilation may be used to correct most hazardous atmospheres. <10 PPM Hydrogen Sulfide based on an 8-hour time weighted average must be achieved, as well as < 25 PPM Carbon Monoxide.

- If an entrapment or engulfment hazard exists, proper blocking procedures must be used to isolate the hazard.

- Rescue equipment shall be staged on site and ready to be employed if needed. A non-entry rescue by means of a mechanical tri-pod, winch, or cable and harness is preferred.

- An Escape Self-Contained Breathing (ESCB) apparatus with at least a 10-minute air supply, or other NIOSH-approved self-rescuer device, shall be available for use as necessary.

- Emergency communication equipment shall be available at the site and shall be no less than a two-way radio.

- First aid and bloodborne pathogen kits shall be easily accessible.

- A trained attendant shall be:
  - Proximal to the confined work space and ready to assist entrants as needed
  - Able to see and communicate with the employees the entire time they are in the confined space
  - Authorized to order the employees out of the space if he or she loses sight of them, loses communication, or has reason to believe the employees are in danger
  - Included by name on the entry permit

- All entrants must be trained in the work to be completed. Entrants' names must be included on the entry permit.

- Supervisor must review, sign, and approve of the entry to the permit-required confined space prior to employee entry.

PRIOR TO ENTERING A PERMIT-REQUIRED CONFINED SPACE (CONT.)

- The completed and signed confined space permit must be posted at the entrance of the confined space.

- Employees who are expected to enter the confined space have a right to review and observe all checks on the confined space prior to entering the space. Additionally, any employee who expresses feeling unsafe or uncomfortable entering a confined space cannot be forced to enter the space and perform the work.

ENTERING A PERMIT-REQUIRED CONFINED SPACE

Once the confined space permit is fully executed, the authorized entrants may enter the confined space.

The attendant should retest the air periodically while the employees are in the confined space to ensure that atmospheric conditions are acceptable. If air tests are not acceptable, the attendant is authorized to order entrants to exit the confined space.

The authorized entrants must maintain communication with the attendant throughout the duration of the work. If any condition inhibits this communication, the attendant is authorized to order the entrants to exit the confined space.

Entrants shall be trained in the use of and be equipped with atmospheric monitoring equipment which sounds an audible alarm in addition to its visual readout.

EXITING AND RE-ENTERING A PERMIT-REQUIRED CONFINED SPACE

Whenever employees exit the space, including for breaks or lunch, the permit shall be canceled. A new permit and air testing will be completed each time before re-entry.

FOLLOWING WORK COMPLETION

After work in the confined space is completed, the supervisor shall:

- Ensure that all workers and all equipment are out of the confined space.

FOLLOWING WORK COMPLETION (CONT.)

- Remove any ventilation devices.
- Close the access cover to the confined space.
- Remove locks and tags from devices locked out.
- Reenergize equipment.
- Return all canceled permits to the corresponding district safety personnel who shall forward a copy to the Secretary's Office of Safety.

TEAM KENTUCKY
TRANSPORTATION CABINET
Secretary's Office of Safety

ADMINISTRATION GUIDE

Section	Subject
JOB ENVIRONMENT	Excavation & Trenching

REFERENCES

29 CFR 1926 Subpart P; 29 CFR 1910.120(b)(1)(iii); KAR Title 803; OSHA 2226 Publication Revised

DEFINITIONS

- *Competent person* – An individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

  Only someone receiving special training, having experience in the field with the ability to recognize potential hazards, and having the authority to correct hazards or abate operations shall be qualified as a competent person.

  Additional information on competent persons may be found online at:

  https://www.osha.gov/competent-person

- *Excavation* – Any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

- *Trench (trench excavation)* – A narrow (in relation to its length) excavation made below the surface of the ground. In general, the depth of a trench is greater than the width, but the width of a trench as measured at the bottom is not greater than 15 feet (4.6 meters).

BACKGROUND INFORMATION

The Occupational Safety and Health Administration (OSHA) requires that workers in trenches and excavations be protected, and that safety and health programs address the variety of hazards they face.

The following hazards cause the most trenching and excavation injuries:

- No protective system
- Failure to inspect trench and protective systems
- Unsafe spoil-pile placement
- Unsafe access or egress

BACKGROUND INFORMATION (CONT.)

All excavations are hazardous because they are inherently unstable. If the excavation is also a restricted space, it carries the additional risks of oxygen depletion, toxic fumes, and water accumulation. If protective systems or equipment are not being used in trenches or excavations, employees are in danger of suffocating, inhaling toxic materials, fire, drowning, or being crushed by a cave-in.

PURPOSE & SCOPE

In our continuing pursuit of a safe and healthy workplace, the Cabinet has instituted an excavation and trenching program to be followed by all employees exposed to excavation and trenching operations.

The purpose of the excavation and trenching program is to establish minimum guidelines to protect all employees engaged in outdoor or indoor work activities that expose them to potential hazards from excavation and trenching operations.

ADMINISTRATIVE RESPONSIBILITIES

The Secretary's Office of Safety is responsible for the administration of this program. The day-to-day aspects of policy implementation shall be the responsibility of district operations, the competent person, supervisors, and employees engaged in this type of work. Personnel in the program shall contact the Secretary's Office of Safety or their designated safety coordinator if further information is needed.

PRE-TRENCH & EXCAVATION PLANNING

Trenching and excavation pre-planning is vital to accident-free work environments. Safety cannot be improvised as work progresses.

The competent person shall:

- Evaluate soil conditions and select appropriate protective systems (29 CFR 1926, Subpart P, Appendix A; and 29 CFR 1926, Subpart P, Appendix F).
- Construct protective systems in accordance with the standard requirements (29 CFR 1926.652).
- Contact utility companies, as well as "Call 811," to locate underground gas, electric, or water lines.
- Plan for traffic control, if necessary.
- Determine proximity to structures that could affect the choice of protective system.

PRE-TRENCH & EXCAVATION PLANNING (CONT.)

- Test for low oxygen, hazardous fumes, and toxic gases (especially when gasoline engine-driven equipment is running or the dirt has been contaminated by leaking lines or storage tanks).
- Ensure adequate ventilation or respiratory protection, if necessary.
- Provide safe access into and out of the excavation.
- Provide appropriate protections if water accumulation is a problem.
- Inspect the site at the start of each shift, following a rainstorm, or after any other hazard-increasing event.
- Keep excavations open the minimum amount of time needed to complete operations.

TRENCH & EXCAVATION GENERAL SAFETY GUIDELINES

Employees shall observe the following trench and excavation general safety guidelines:

- Any excavation **greater than 4 feet deep** shall be:
  - Provided with an adequate exit every 25 feet if employees are expected to enter the excavated area
  - Tested for hazardous gases or oxygen deficiency if such conditions are likely to exist
  - Inspected prior to and during the work shift by a competent person

  Note: If a trench is less than 5 feet deep, a competent person may determine that a protective system is not required.

- Any excavation **greater than 5 feet deep** shall:
  - Meet the conditions for an excavation greater than 4 feet deep (see above)
  - Have an adequate means of protection
  - Be inspected prior to and during the work shift by a competent person
  - Require a protective system unless the excavation is made entirely in stable rock

- Trenches **20 feet (6.1 meters) deep or greater** require a protective system that is either of the following:
  - Designed by a registered professional engineer
  - Based on tabulated data prepared or approved by a registered professional engineer [29 CFR 1926.652(b) and (c)]

TRENCH & EXCAVATION INSPECTIONS

Per 29 CFR 1926.650, trench and excavation inspections shall be conducted by a competent person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Inspections shall be documented by completing an *OSHA Excavation & Trenching Inspection Checklist* in the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system. If documentation in BOOTS is not feasible, TC 25-158, *Daily Excavation & Trench Inspection*, may be used as an alternative (**Exhibit 9016**).

If trenches and excavations are not inspected daily for evidence of possible cave-ins, hazardous atmospheres, failure of protective systems, or other unsafe conditions, employees will be in danger.

Therefore, trenches and excavations shall be inspected by a competent person at the following times as required by 29 CFR 1926.652:

- Before construction begins
- Daily before each shift
- As needed throughout the shift
- Following rainstorms or other hazard-increasing events (such as a vehicle or other equipment approaching the edge of an excavation)

SPOIL-PILE PLACEMENT

Excavated material (spoils) can be hazardous if set too close to the edge of a trench or excavation. The weight of the spoils can cause a cave-in, or spoils and equipment can fall back on top of workers causing serious injury or death.

Set spoils and equipment at least 2 feet back from the edge of the trench or excavation. Where the site does not permit a 2-foot set back, spoils may need to be temporarily hauled to another location. Use retaining devices, such as a trench box that extends above the top of the trench, to prevent equipment and spoils from falling backwards.

ACCESS & EGRESS

To avoid fall injuries during normal entry and exit of a trench or excavation, ladders, stairways, or ramps are required.

For any trench 4 feet deep or more, a safe means of egress shall be provided and maintained within 25 lateral feet of any worker.

ACCESS & EGRESS (CONT.)

When two or more components form a ramp or runway, they must be connected to prevent displacement and be of uniform thickness. Cleats or other means of connecting runway components must be attached in a way that would not cause tripping.

Structural ramps used in place of steps must have a non-slip surface. Structural ramps used for access or egress of equipment must be designed by a competent person qualified in structural design [29 CFR 1926.651(c)(1)(i)].

Earthen ramps may be used as a means of egress only if a worker can walk them in an upright position, and only if they have been evaluated by a competent person.

PROTECTIVE SYSTEMS OR EQUIPMENT

There are different types of protective systems:

- Benching

  A method of protecting workers from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels.

  Note: Benching cannot be done in Type C soil. Most soils in Kentucky are classified as "C."

- Sloping

  Involves cutting back the trench wall at an angle inclined away from the excavation. Sloping shall be implemented as follows:

  - Type A soil, ¾ to 1 (53-degree angle)
  - Type B soil, 1 to 1 (45-degree angle)
  - Type C soil, 1½ to 1 (34-degree angle)

- Shoring

  Installation of aluminum, hydraulic, or other types of supports to prevent soil movement and cave-ins.

- Shielding

  Protects workers by using trench boxes or other types of supports to prevent soil cave-ins.

PROTECTIVE SYSTEMS OR EQUIPMENT (CONT.)

Protective systems must be designed in consideration of soil classification, depth of cut, water content of soil, changes caused by weather or climate, surcharge loads (such as spoil or other materials to be used in the trench), and other operations in the vicinity.

Protective systems or equipment that may be used include the following:

- Monitoring water removal equipment and operations [29 CFR 1926.651(h)(2)]
- Inspecting excavations subject to runoff from heavy rains to determine need for diversion ditches, dikes, or other suitable protection [29 CFR 1926.651(h)(3)]
- Determining cave-in potential to assess need for shoring or other protective system [29 CFR 1926.652(a)(1)]
- Examining damaged material or equipment used for protective systems to determine its suitability for continued use [29 CFR 1926.652(d)(3)]
- Classifying soil and rock deposits, by both visual analysis and by testing, to determine appropriate protection and re-classifying, if necessary, based on changing conditions [29 CFR 1926 Subpart P Appendix A]
- Determining the appropriate slope of an excavation to prevent collapse due to surcharge loads from stored material or equipment, operating equipment, adjacent structures, or traffic, and assuring that such slope is achieved (29 CFR 1926 Subpart P Appendix B)

Additional information on required protective systems may be located online at:

https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.652

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ADMINISTRATION GUIDE

Section	Subject
JOB ENVIRONMENT	Lockout/Tagout Procedures for Stored or Residual Energy

REFERENCES 29 CFR 1910.147; 29 CFR 1926.417; **SHA-407-6**

DEFINITIONS

- *Stored (Residual) Energy* – Energy that resides or remains in the power supply system.
- *Zero Energy State* – The point at which equipment has been safely isolated from any changes of re-energization or release of residual energy.

PURPOSE & SCOPE

This procedure establishes the minimum requirements for the lock out of energy-isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or the release of stored energy could cause injury. **SHA-407-6** provides additional information.

SEQUENCE OF LOCKOUT

The following sequence of steps shall be followed when locking out energized devices:

1. The supervisor shall notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

2. The supervisor or authorized employee shall:
   a. Refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes.
   b. Understand the hazards of the energy.
   c. Know the methods to control the energy.

SEQUENCE OF LOCKOUT (CONT.)

3. If the machine or equipment is operating, shut it down by the normal stopping procedure (such as, depress stop button, open switch, or close valve).

4. Deactivate the energy-isolating devices so that the machine or equipment is isolated from the energy sources. Locate all energy sources that power the piece of equipment to be maintained.

   Always look for hidden energy sources. Some machines may have more than one source of power.

5. Lock out the energy-isolating devices with assigned individual locks. Make absolutely sure the power cannot be supplied without the authorized employee knowing about it. If several people are needed to work on a piece of equipment, each one must apply his or her own lock. This prevents any accidental start-ups while another employee may still be working on the machinery. In this case, a multiple lockout device shall be used that can accommodate several locks at once.

   Employees shall not use another employee's lock or lend their own lock to someone else.

6. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure) must be dissipated or restrained by methods such as grounding, repositioning, blocking, or bleeding down. Equipment must be at zero energy state before servicing or maintenance work can begin.

   Employees shall ensure that equipment is disconnected from the energy sources by verifying that personnel are not exposed, and that equipment is isolated and will not operate.

   Caution: Return operating controls to neutral or "off" position after verifying the isolation of the equipment.

7. The machine or equipment is now locked out.

Confirming that key measures are in place may be assisted by completing *Lockout/Tagout LOTO Inspection Checklist* in the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system.

SEQUENCE OF RESTORING EQUIPMENT TO SERVICE

When the servicing or maintenance has been completed, and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken by the supervisor or authorized person:

1. Check the machine or equipment, as well as the immediate area around the machine or equipment, to ensure that nonessential items have been removed and that the machine or equipment components (including machine guards) are operationally intact.
2. Check the work area to ensure that all employees have been safely positioned or removed from the area.
3. Verify that the controls are in neutral.
4. Remove the lockout devices and reenergize the machine or equipment.

   Note: The removal of some forms of blocking may require re-energization of the machine before safe removal.
5. Notify affected employees that the servicing or maintenance has been completed and the machine or equipment is ready for use.

Figure 4. Lockout Tag Example
(See also SHA-411.)

COMPLIANCE

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out. The authorized employees are required to perform the lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment that is locked out to perform servicing or maintenance, shall not attempt to start, energize, or use that machine or equipment.

Disciplinary action, in accordance with personnel rules and regulations, will be taken against any employee found to be in violation of this program.

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Section	Subject
ELECTRICAL SAFETY	Overview

REFERENCES

29 CFR 1910(S), *Electrical*; 29 CFR 1926(K), *Electrical*; 803 KAR 2:318; NFPA 70: *National Electrical Code*; NFPA 70E: *Standard for Electrical Safety in the Workplace – 2018*; NFPA Article 130, *Work Involving Electrical Hazards*; NFPA Table 130.7(C)(14), *Standards on Protective Equipment*

BACKGROUND INFORMATION

Electrocutions are the fourth leading cause of traumatic occupational fatalities in the workplace. As the Occupational Safety and Hazard Administration (OSHA) has noted, all employees must be aware of possible electrical hazards. Of course, engineers, electricians, and other professionals who directly work with electricity must stay hazard aware. However, office workers and other employees who work indirectly with electricity may also be exposed to electrical hazards.

DEFINITIONS

- *Qualified person* – An employee who has demonstrated skills and knowledge related to the construction and operation of electrical equipment and installations and has received safety training to identify the hazards and reduce the associated risk. This person may also be referred to as a *qualified electrical worker* (QEW).
- *Unqualified person* – Any person who does not meet the definition of a qualified person as defined above.

PURPOSE & SCOPE

The following practices and procedures are intended to address and enhance the electrical safety requirements that are necessary for the practical safeguarding of Kentucky Transportation Cabinet (KYTC) employees in their workplaces.

Electrical safety in the workplace is a priority to persons exposed to electrical hazards and it is their responsibility to comply with all applicable safety standards including Kentucky Occupational Safety and Health (KOSH), National Fire Protection Association (NFPA), OSHA, and other appropriate governmental and industry-accepted guidelines, codes, and standards. These practices cover the installation and maintenance of electrical systems, premise wiring, traffic signals, and street lighting. Electrical safety is ultimately the responsibility of each employee.

QUALIFIED PERSON RESPONSIBILITIES

A qualified person is responsible for:

- Keeping unqualified persons away from areas where electrical work is being performed
- Following the applicable TC 25-156, *Job Safety Analysis & PPE Certification of Hazard Assessment*, and safety rules (**Exhibit 9001**)
- Knowing the appropriate personal protection equipment (PPE) and tools for each assigned task and how to inspect them before beginning work
- Remaining knowledgeable and current on the applicable safety procedures and rules applying to their job

Only qualified persons may work on energized electrical circuit parts or equipment. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

UNQUALIFIED PERSON RESPONSIBILITIES

An unqualified person shall:

- Always be aware of possible electrical hazards, even when their tasks do not involve electrical work (such as, the operation of mobile equipment, use of ladders, or handling materials).
- Remain outside the limited approach boundary as defined by OSHA unless escorted by a qualified person.

Unqualified employees shall not:

- Conduct any electrical repairs.
- Operate equipment in the presence of an electrical hazard.
- Allow electrical equipment or components to contact water.
- Use cords or plugs missing the “ground” prong.
- Overload electrical receptacles.

Even low-voltage electricity can be physically harmful. Employees are responsible for the immediate reporting of electrical safety hazards to a supervisor, acquiring proper training and authorization prior to working on electrical equipment, and inspecting equipment prior to using it.

UNQUALIFIED PERSON RESPONSIBILITIES (CONT.)

Before starting each job, the employee in charge shall complete TC 25-163, *Job Briefing*, and TC 25-156, *Job Safety Analysis & PPE Certification of Hazard Assessment* (**Exhibits 9002** and **9001**).

BASIC ELECTRICAL SAFETY RULES

The following electrical safety rules apply to both qualified and unqualified persons:

- Report all electrical hazards to the supervisor before attempting any electrical repairs.
- Do not operate equipment if an electrical hazard is or may be present.
- Do not allow electrical equipment or components to contact water.
- Remember that even low-voltage electricity can be physically harmful.
- Do not use cords or plugs that are missing the ground prong.
- Do not overload electrical receptacles.

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Section
ELECTRICAL SAFETY

Subject
Risk Controls for Electrical Hazards

OVERVIEW

Employees shall identify electrical hazards specific to the task being performed. Risks associated with the hazards shall be assessed and risk control methods shall be adopted in accordance with those listed below. Human factors shall be considered.

ENGINEERING CONTROLS

The following engineering risk control methods, in conjunction with the National Fire Protection Association (NFPA) 70, *National Electrical Code*, shall be used to prevent occurrence of electricity-related incidents:

- All electrical distribution panels, breakers, disconnects, switches, and junction boxes shall be completely enclosed.
- Water-tight enclosures shall be used if electrical components could possibly be exposed to moisture.
- Structural barriers shall be used to prevent accidental damage to electrical components.
- Conduits shall be supported for their entire length; non-electrical attachments to conduits are prohibited.
- Non-rigid electrical cords shall have strain relief wherever necessary.

ADMINISTRATIVE CONTROLS

The following administrative risk control methods shall be used to prevent occurrence of electricity-related incidents:

- Only trained, authorized, and qualified electrical workers (QEWs) may repair or service electrical equipment. (**SHA-407-1**)
- Contractors shall be licensed to perform electrical work.
- Physical barriers shall be used to prevent unauthorized persons from entering areas where electrical work or operations (such as, new installation or repair of electrical components or equipment) are being performed.

ADMINISTRATIVE CONTROLS (CONT.)

- Only trained and authorized QEWs may enter electrical distribution rooms.
- All electrical control devices shall be labeled properly.
- Senior facility management shall pre-authorize work on energized electrical circuits through an energized electrical work permit (**Exhibit 9017**) or safe operating procedure.

PPE & WORK PRACTICE CONTROLS

The following personal protective equipment (PPE) and work practice risk control methods shall be used to prevent occurrence of electricity-related incidents:

- *Lower Voltage (under 600 volts)*
  - Employees covered under this policy shall wear electrically-rated safety shoes.
  - Only tools that are properly insulated shall be used.
  - Non-conductive gloves shall be made available for use during work on electrical equipment.
  - Electrically-rated matting shall be placed in front of all electricity distribution panels.
- *Higher Voltage (above 600 volts)*
  - All electrical work and operations will be performed by a qualified high voltage electrical contractor.
  - All employees shall maintain at least 10 feet from high voltage circuits and overheads up to 50kV. For voltages above 50kV, add 4 inches for every 10kV.

    Caution: The electric utility shall be contacted if workers have not confirmed the voltage of the overhead power line. (See **MAIN-302** for additional information on working around power lines.)

EXCEPTIONS

Any exception to this policy requires an energized electrical work permit (**Exhibit 9017**) approved by the location manager.

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Section	Subject
ELECTRICAL SAFETY	Electrical Traffic Control Device Inspections

REFERENCES

SHA-411, *Incident Prevention Tag System*; TO-607, *Electrical Traffic Control Devices – Inspections*; TO-608, *Electrical Traffic Control Devices – Maintenance*.

PREVENTATIVE MAINTENANCE

Preventative maintenance should be performed by qualified electrical workers (QEWs) yearly and include the following (NFPA 70B):

- Clean the interior of the cabinet and replace the air filter.
- Seal the cabinet and conduits to prevent animals and insects from entering.
- Inspect the service and verify the installation of warning stickers.
- Replace the conflict monitor and verify the program.
- Visually inspect detection systems and verify the operation of pedestrian detection.
- Test the fan and thermostat.
- Visually inspect the support structures and span attachments.
- Visually inspect overhead equipment.
- Inspect the grounding and bonding.
- Verify that red-fail cable, if used, is properly installed.

GENERAL HAZARD CONTROLS

To eliminate or minimize potential hazards during electrical traffic control device inspections, risk controls such as, but not limited to, the following may be implemented. (See SHA-401 for the hierarchy of risk controls.)

- Doors and hinged panels shall be secured to prevent them from swinging into an employee and causing that employee to contact exposed energized parts.

- Metal measuring tapes or steel scales shall not be used near exposed energized parts.

- Only qualified electrical workers (QEW) may perform testing work on electric circuits or equipment (SHA-407-1).

GENERAL
HAZARD CONTROLS
(CONT.)

- Test instruments and equipment and all associated test leads, cables, power cords, probes, and connectors shall be visually inspected by the QEW for external defects and damage before the equipment is used.

- If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item shall be removed from service and no employee shall use it until it has been repaired, tested, and found to be safe (**SHA-411**).

- Test instruments, equipment, and their accessories shall be rated for the circuits and equipment to which they will be connected and shall be designed for the environment in which they will be used.

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	Section ELECTRICAL SAFETY
	Subject Electrical Personal Protective Equipment (PPE)

REFERENCES

29 CFR 1910 Subpart I
National Fire Protection Association (NFPA) 70E
ASTM International standards

PURPOSE & SCOPE

Electrical personal protective equipment (PPE) provides the last line of defense against inadvertent contact with energized parts or burns resulting from electrical arcs.

The purpose of this section is to ensure personnel have an adequate understanding of potential electrical hazards and the knowledge to select and wear the proper PPE based on the hazards. The Kentucky Transportation Cabinet (KYTC) shall provide electrical PPE, as well as other PPE as needed, for use by employees working in areas where they could be exposed to electrical hazards.

REQUIREMENTS FOR & USE OF ELECTRICAL PPE

Electrical PPE requirements apply to all persons exposed to potential electrical shock or arc flash hazards.

Employees are required to observe the following procedures:

- Use only PPE designed for the work being performed.
- Inspect and test all PPE prior to use.
- Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) shall not be worn near exposed energized parts unless they are rendered nonconductive by covering, wrapping, or other insulating means.
- Where energized work is being performed that has the potential to expose employees to an arc flash, employees shall wear arc-rated (AR), flame-resistant (FR) clothing and AR PPE based on the incident energy exposure associated with the specific task.

REQUIREMENTS FOR & USE OF ELECTRICAL PPE (CONT.)

- At a minimum, all persons exposed to potential electrical shock or arc flash hazards shall wear an untreated, long sleeve, natural fiber shirt, long pants, hardhat, and safety glasses with side shields and electrical hazard (EH)-rated shoes free of notable wear and debris.

- Employees shall wear protective clothing buttoned in the front and at the sleeves with shirts tucked to avoid heat and flames from entering under the clothing. When work covered by NFPA 70E is performed, garments shall conform to the NFPA 70E requirements.

- For the purposes of labeling, it is preferred that an arc flash hazard assessment be completed using an engineering calculation method. However, the NFPA 70E task tables and related guidelines are acceptable (see below).

- Use a protective outer cover if the work being performed might damage the PPE's insulation (such as rubber insulating gloves used with leather over-protectors).

- Wear non-conductive headgear, such as a Class E (20kV) rated hard hat, if there is a danger of electrical burns or shock from contact with exposed, energized equipment.

- Wear eye and face protection (such as arc-rated face shields and safety glasses equipped with side shields and non-metalic frames) if there is a danger of flying objects, flashes, or electrical arcs produced by an electrical explosion.

- It is preferred that employees use dual-substrate insulating tools that indicate dielectric wear or damage.

- The soles of EH shoes shall be free of notable wear and debris.

NFPA 70E ARTICLE 130 TABLES

Employees conducting work covered under NFPA 70E should be familiar with and follow PPE standards listed in the Article 130 Tables:

- Table 130.7(C)(15)(a), *Hazard/Category Classifications and Use of Rubber Insulating Gloves and Insulated and Hand Tools-Alternating Current Equipment*

NFPA 70E
ARTICLE 130 TABLES
(CONT.)

- Table 130.7(C)(15)(b), *Hazard / Category Classifications and Use of Rubber Insulating Gloves and Insulated and Hand Tools-Direct Current Equipment*

- Table 130.7(C)(16), *Hazard/Risk Category, Protective Clothing and Personal Protective Equipment* (Refer to the most recent edition of the NFPA 70E.)

Abbreviations for Table 130.7(C)(16) are as follows:

- AN - as needed (optional)
- AR - as required
- SR - selection required

Notes for Table 130.7(C)(16) are as follows:

- Arc rating for a garment or system of garments is expressed in cal/cm^2.
- If rubber insulating gloves with leather protectors are required, additional leather or arc-rated gloves are not required. The combination of rubber insulating gloves with leather protectors satisfies the arc flash protection requirement.
- The FR shirt and pants used for Hazard/ Risk Category 1 shall have a minimum arc rating of 4.
- FR coveralls (minimum arc rating of 4) is an alternate to FR shirt and FR pants.
- FR shirt and FR pants used for Hazard/Risk Category 2 shall have a minimum arc rating of 8.
- FR coveralls (minimum arc rating of 8) is an alternate to FR shirt and FR pants.
- A face shield with a minimum arc rating of 4 for Hazard/Risk Category 1 or 8 for Hazard/Risk Category 2, with wrap-around guarding to protect not only the face, but also the forehead, ears, and neck (or, alternatively, an arc-rated arc flash suit hood), is required.
- An alternative is to use a total FR clothing system and hood with a minimum arc rating of 25 for Hazard/Risk Category 3.

ADDITIONAL RISK CONTROLS

Shock protection shall also include, but not be limited to, using the following:

- Insulated tools or equipment when working on exposed energized conductors or circuit parts
- Insulated fuse-handling equipment when removing or installing fuses as fuse terminals are energized
- Non-conductive ropes and hand lines when near exposed energized parts
- Protective shields, barriers, or insulating materials as protection from shock, burns, or other electrically-related injury while working near exposed energized parts.

MAINTENANCE & STORAGE

When not in use, PPE shall be maintained in a safe, reliable condition and shall be periodically inspected or tested. Examples of such maintenance and storage are as follows:

- Electrical rubber gloves shall be:
  - Visually inspected and air tested prior to first use each day.
  - Dielectrically tested at a test laboratory according to the appropriate ASTM guides every six months from first use.

- Unopened electrical rubber gloves may be stored for a maximum of twelve months under climate-controlled conditions.

- Rubber electrically insulated products other than gloves (such as mats and sleeves) shall be tested every twelve months and inspected before each use.

- Rated insulated tools (1000V AC) shall be visually inspected prior to each use. All portable electrical test meters (such as voltmeters, multi-meters, clamp-on ammeters) shall comply with UL–IEC 61010 Category III or IV classification.

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Section	Subject
ELECTRICAL SAFETY	Training

REFERENCES

29 CFR 1910.331 to 1910.339; National Fire Protection Association (NFPA) 70E

DEFINITIONS

See **SHA-407-1** for the definitions of qualified and unqualified electrical workers.

FREQUENCY

At a minimum, qualified electrical workers (QEWs) shall receive initial training in safe electrical work practices when hired and refresher training every 3 years, as required by National Fire Protection Association (NFPA) 70E. QEWs who perform tasks less than once per year shall be required to have retraining before performing those tasks again.

At a minimum, unqualified electrical workers who are exposed to electrical hazards and are at risk of injury from electric shock or arc flash shall receive general electrical safety training when first hired and refresher training every 3 years.

QEW TRAINING CONTENT

Training required by NFPA 70E, Article 110.2(A), shall be classroom, on-the-job, or a combination of the two. The type and extent of the training provided shall be determined by the risk to the employee. Given such variances in training, a person can be considered a QEW with respect to certain equipment and methods, but still be an unqualified electrical worker for others.

Training for QEWs shall include:

- NFPA 70E, Article 105, *Application of Safety-Related Work Practices*
- Kentucky Occupational Safety and Health (KOSH) Standard 29 CFR 1910.331 to 1910.339
- Overview of construction and operation of equipment, including specific work methods
- Recognition and avoidance of electrical hazards inherent to such equipment and work methods

QEW TRAINING CONTENT (CONT.)

QEWs shall also be trained on the proper use of special precautionary techniques and electrical personal protective equipment (PPE) including, but not limited to, arc-flash, insulating and shielding materials, and insulated tools and test equipment (**SHA-407-4**).

Persons permitted to work within the limited approach boundary of exposed energized electrical conductors and circuit parts operating at 50 volts or more shall, at a minimum, be additionally trained in the following:

- Selection and use of an appropriate voltage detector, including the following skills:
  - Demonstrate verification of the absence of voltage using a detector.
  - Interpret indications provided by the detector.
  - Express understanding of the limitations of the specific voltage detector used.

- Skills and techniques necessary to distinguish exposed energized electrical conductors and circuit parts from other parts of electrical equipment, and determine their nominal voltage

- Methods of releasing victims from contact with exposed energized conductors or circuit parts

- Approach distances and corresponding voltages to which the qualified person will be exposed

- Necessary decision-making processes used to determine the degree and extent of hazards, as well as the PPE and job planning necessary to perform the task safely

Note: Employees who are undergoing on-the-job training and who are under the direct supervision of a QEW, shall themselves be considered QEWs, if – during the course of training – they have demonstrated an ability to perform duties safely at their level of training.

UNQUALIFIED ELECTRICAL WORKER TRAINING CONTENT

Unqualified electrical workers who are required to do specific electrical tasks shall be trained according to the NFPA 70E requirements for that specific task and shall be certified as “Task Qualified.”

UNQUALIFIED ELECTRICAL WORKER TRAINING CONTENT (CONT.)

Unqualified electrical workers who are unauthorized to perform work on electrical equipment and components will be trained in general electrical safety precautions and hazard awareness.

ADDITIONAL TRAINING & RETRAINING

An employee shall receive additional training (or retraining) under any of the following conditions:

- Supervision or annual inspections indicate the employee is not complying with safety-related work practices.
- New technology, equipment, or changes in procedures necessitate the use of safety-related work practices different from those normally used.
- Assigned tasks have been performed less than once per year.
- Safety-related work practices are not those normally used during regular job duties.
- Job duties change.

TRAINING DOCUMENTATION

Training documentation shall be maintained by the crew supervisor and safety coordinator reflecting each employee's name and training dates, including when the employee demonstrated the work practice. Training documentation shall be maintained for the duration of the employee's tenure. Employment records indicating an employee has received the required training are acceptable means of meeting this requirement.

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	Section ELECTRICAL SAFETY
	Subject De-Energized Parts (Electrical Logout/Tagout)

REFERENCES

See **SHA-406-7** and **SHA-411** for additional information regarding lockout/tagout procedures.

OVERVIEW

Live electrical parts shall be de-energized before the employee works on or near them unless the supervisor can demonstrate that de-energizing introduces additional or increased hazards or is unfeasible due to equipment design or operational limitations (**SHA-407-9**, **Exhibit 9017**).

DE-ENERGIZING DEVICES

The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices such as push buttons, selector switches, and interlocks may not be used as the sole means for de-energizing circuits or equipment.

A qualified person shall disconnect circuits and equipment in the following sequence:

1. Stored electric energy that might endanger personnel shall be released, capacitors shall be discharged, and high capacitance elements shall be short-circuited and grounded. If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

2. Stored non-electrical energy in devices that might re-energize electric circuit parts shall be blocked or relieved to the extent that the circuit parts cannot be accidentally energized by the device.

3. A lock and a tag shall be placed on each disconnecting means that is used to de-energize circuits and equipment. The lock is attached to prevent persons from easily operating the disconnecting means. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

   Note: A tag may be used without a lock if a lock cannot be applied, or if the supervisor can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock.

DE-ENERGIZING DEVICES (CONT.)

4. A qualified person shall use test equipment to test the circuit elements and electrical parts of the equipment that employees will be exposed to and shall verify that the circuit elements and equipment parts are de-energized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back-feed even though specific parts of the circuit have been de-energized and presumed to be safe.

   Note: When test instruments are used to confirm the absence of voltage on conductors or circuit parts operating at 50 volts or more, the operation of the test instrument shall be verified before and after the absence-of-voltage test is performed.

RE-ENERGIZING DEVICES

Before re-energizing a device, a qualified person shall conduct tests and visual inspections necessary to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed and that the circuits and equipment can be safely re-energized. Employees exposed to hazards associated with re-energizing the circuit or equipment shall be warned to stay clear of the circuits and equipment.

Each lock and tag shall be removed by the employee who applied it or under his or her direct supervision. If the employee is absent from the workplace, the lock or tag may be removed by a qualified person who has been designated to perform this task.

The following conditions must be met before the lock or tag may be removed by the designated qualified person:

- The supervisor has confirmed that the employee who applied the lock or tag is not available in the workplace at the time of removal.
- The supervisor has ensured that the employee who applied the lock or tag has been advised of the lock or tag removal before he or she resumes work.
- A visual determination has been made that all employees are clear of the circuits and equipment.

WORKING ON LIVE PARTS

It is not required that live parts operating at less than 50 volts to ground be de-energized if there will be no increased exposure to electrical burns or to explosion due to electrical arcs.

When working below 50V, workers shall remain vigilant of possible contact with surrounding energized parts operating at > 50V. Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

Examples of work that may be performed on or near energized circuit parts because of the unfeasibility of de-energizing due to equipment design or operational limitations include, but are not limited to, the following:

- Testing of electric circuits that can only be performed with the circuit energized
- Work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

Qualified employees shall take the following control measures when working on live parts:

- Ensure that all precautions as outlined above have been followed.
- Carefully complete work in a slow, considered manner.
- Follow all safe working procedures.
- Assume that all exposed conductors or equipment are live.
- Use work practices suitable for the condition under which the work is to be performed and the voltage level of the live parts or equipment.
- Keep a safe working distance.

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Section	ELECTRICAL SAFETY
Subject	Work Practices to Minimize Risk

REFERENCES

NFPA 70E, *Electrical Safety in the Workplace*

PURPOSE & SCOPE

The work practices listed below are general safety measures to be taken by employees when working with energized equipment. These measures are not a comprehensive list of all safety measures that may be taken, but are some of the most frequently applied.

ALERTING TECHNIQUES

When working in open areas where energized equipment must be exposed, appropriate alerting techniques shall be established. Signs, barricades, symbols, or accident prevention tags shall be used as a warning of electrical hazards. Such alerting techniques shall be placed at the greater of either the limited approach boundary or arc flash protection boundary.

Barricades shall be used in conjunction with safety signs where necessary to prevent or limit access to work areas exposing people to uninsulated energized conductors or circuit parts. Conductive barricades may not be used where they might cause an electrical contact hazard.

If signs and barricades do not provide sufficient warning of electrical hazards, an attendant shall be stationed to warn and protect persons from the potential hazard.

ELECTRICAL PANEL LABELING NOMENCLATURE

All electrical equipment installations shall include permanent labels as described below:

- Label all disconnecting means, panel boards, and control panels to indicate what they disconnect, the voltage, arc flash boundary, arc flash incident energy at a working distance or personal protective equipment (PPE) category, and where they originate (the next upstream disconnect).

ELECTRICAL PANEL LABELING NOMENCLATURE (CONT.)

- Label circuit breakers located in panels (<= 240V) with what they control. This can be on a circuit directory located on the face or inside panel door.
- Provide arc flash hazard information for circuit breaker panels on one label on the enclosure.
- Include a permanent label indicating the minimum working space for all electrical equipment operating at 600 volts nominal or less and likely to require examination, adjustment, servicing, or maintenance while energized. The floor shall also be taped or painted to indicate the working area required.
- Place labels on electrical equipment that are suitable for the environment, with consideration to chemicals and sunlight.

OCCASIONAL USE OF FLAMMABLE OR IGNITABLE MATERIALS

Electric equipment capable of igniting flammable materials (such as gases, vapors, liquids, dust, fibers, or filings) shall not be used where those materials are present unless measures are taken to prevent hazardous conditions from developing.

HOUSEKEEPING DUTIES

Employees may not perform housekeeping duties in proximity to areas where live parts present an electrical contact hazard unless adequate safeguards such as insulating equipment or barriers are provided.

Electrically conductive cleaning materials (including conductive solids, such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed that will prevent electrical contact.

PORTABLE EQUIPMENT

The following precautions shall be taken when working with portable equipment:

- Portable AC electrical power tools shall be double-insulated construction or grounded. In addition, all 120-volt AC power tools used for construction and maintenance must be used with ground fault circuit interruption (GFCI) protection originating at the wall receptacle. Permanent GFCI receptacles or portable GFCIs are acceptable.

PORTABLE EQUIPMENT (CONT.)

- Portable, plug-connected tools and extension cords shall be visually inspected before each use by the user. Damaged tools, plugs, or cords shall not be used and shall be removed from service. Visual inspection shall be performed to check for external defects (such as loose parts, deformed and missing pins, or damage to outer jacket or insulation) and evidence of possible internal damage (such as pinched or crushed outer jacket).

- Cord- and plug-connected equipment, as well as extension cords that remain connected once they are put in place and are not exposed to damage, shall be visually inspected before relocating them. If inspection reveals a defect or evidence of damage that might expose an employee to injury, the equipment or extension cord must be removed from service, and no person may use it until it has been repaired, tested, and found to be safe.

- Appliances used at the location shall have a manufacturers' nameplate and shall be listed by an appropriate product safety testing and certification organization. If the appliance has exposed metal parts, only a 3-wire cord with a grounded plug is allowed. There should be no exposed electrical hazards.

- All extension cords must be used with GFCI protection at all times. Extension cords shall not be used as a substitute for permanent wiring.

- Portable electric power strips are permitted in compliance with the manufacturer's instructions.

- A flexible cord used with grounding type equipment shall contain an equipment grounding conductor.

- Attachment plugs and receptacles may not be connected or altered in a manner that would prevent proper continuity of the equipment grounding conductor where plugs are attached to receptacles. Additionally, those devices may not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the current-carrying conductors.

- Adaptors that interrupt the continuity of the equipment grounding connection may not be used.

PORTABLE EQUIPMENT (CONT.)

- Portable equipment shall be handled in a manner that will not cause damage.

- Flexible electric cords attached to equipment may not be used to raise or lower the equipment and may not be fastened with staples or otherwise hung in such a way that could cause damage to the outer jacket or insulation.

- Employees' hands may not be wet when plugging or unplugging flexible cords and cord- and plug-connected equipment.

- Electrically-rated insulating protective equipment such as gloves must be used if handling a plug or receptacle that could provide a conducting path to the employee's hand (for example, a cord connector that is wet from being immersed in water).

- Locking type connectors shall be properly secured after connection.

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Section	Subject
ELECTRICAL SAFETY	Electrical Hazard Analysis

PURPOSE & SCOPE

Appropriate safety-related work practices shall be determined by an electrical hazard analysis before any person approaches exposed live parts operating at 50 volts or more that are within the limited approach boundary and are not de-energized or locked out (**SHA-406-7** and **SHA 407-6**). Such work practices shall protect each employee from arc flash and direct or indirect bodily contact with live parts.

DEFINITIONS

- *Shock hazard analysis* – Determine the voltage to which personnel will be exposed, boundary requirements, and the personal protective equipment necessary in order to minimize the possibility of electrical shock to personnel.

- *Flash hazard analysis* – Determine the flash protection boundary and the personal protective equipment required to be used within the boundary.

PROTECTION BOUNDARY

Shields, barriers, or insulating materials shall be used to protect employees from shock, burns, or other electrically related injuries while working near exposed energized parts that might be accidentally contacted or where dangerous electric heating or arcing might occur. Normally enclosed live parts that are exposed for maintenance or repair shall be guarded to protect unqualified persons from contact with the live parts.

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Section	*Subject*
ELECTRICAL SAFETY	Energized Electrical Work Permit (EEWP)

EEWP REQUIRED

An energized electrical work permit (EEWP) (**Exhibit 9017**) shall be required when work is permitted in accordance with NFPA 70E, Article 130.2(A), and takes place under either of the following conditions:

- Within a restricted approach boundary
- Conductors or circuit parts are not exposed, but an increased likelihood of injury from an arc flash hazard exists

EEWP CONTENTS

The EEWP shall include, but not be limited to, the following:

- Description and location of the circuit and equipment
- Work to be performed
- Justification for performing the work in an energized condition
- Safe work practices to be employed
- Results of the shock assessment
  - Voltage to which personnel will be exposed
  - Limited approach boundary
  - Restricted approach boundary
  - Personal protective equipment (PPE) and other protective equipment required by the standard to protect against shock hazard
- Results of the arc flash risk assessment
  - Available incident energy at working distance or arc flash PPE category
  - PPE and other protective equipment required by the standard to protect against arc flash hazard
- Means employed to restrict the access of unqualified persons from the work area
- Evidence of a job briefing, including discussion of job-specific hazards
- Energized work approval with signatures (**Exhibit 9017**)

EEWP EXCEPTIONS

According to NFPA 70E, electrical work shall be permitted without an EEWP if a qualified person is provided with and uses appropriate safety work practices and PPE during any one of the following activities or conditions:

- Testing, troubleshooting, or voltage measuring
- Thermography, ultrasound, or visual inspections without crossing the restricted approach boundary
- General housekeeping or miscellaneous non-electrical tasks without crossing the restricted approach boundary

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Section	*Subject*
ELECTRICAL SAFETY	Working Around Power Lines

REFERENCES 29 CFR 1910, KRS 367, American National Standards Institute (ANSI)

GENERAL OPERATIONS & PRECAUTIONS

Employees shall survey the area for overhead and underground lines before work begins ("Kentucky 811").

The supervisor shall contact the power company to have the lines disconnected, de-energized, or properly protected prior to work beginning when lines are too close to work safely or the exact location of underground lines is unknown.

Employees shall use the following table to determine minimum clearance distances while working near distribution lines:

Table 1. Minimum Clearance Distance Per Power Line Voltage

Normal Voltage (Phase to Phase)	Minimum Required Clearance
up to 50,000 volts	10 feet
Over 50,000 to 200,000 volts	15 feet
Over 200,000 to 350,000 volts	20 feet
Over 350,000 to 500,000 volts	25 feet
Over 500,000 to 750,000 volts	35 feet
Over 750,000 to 1,000,000 volts	45 feet
Over 1,000,000 volts	*

**As established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.*

Caution: Under the right conditions, electrical current can arc through the air to an equipment boom or other ground.

Kentucky Transportation Cabinet (KYTC) employees shall not**:**

- Remove any objects contacting live distribution lines.
- Work near live distribution lines or electrical circuits.

GENERAL OPERATIONS & PRECAUTIONS (CONT.)

The power company shall be notified and shall do one of the following prior to work commencing:

- Disconnect or remove the distribution line.
- De-energize the distribution line.
- Guard the distribution line with insulation sleeves.

Overhead electrical and other overhead utilities should be considered energized until verified as de-energized by the utility company. Any trees or limbs in the roadway or near trimming operations should be assessed for potential electric line involvement before any contact.

Employees shall not perform any work on trees that are within ten feet of any kind of overhead wires.

When performing tree trimming operations, employees shall:

- Observe the ten-foot rule.
- Follow all 29 CFR 1910 standards and American National Standards Institute (ANSI) recommendations for tree care work.

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Section	*Subject*
ELECTRICAL SAFETY	Audit Requirements

REFERENCES

National Fire Protection Association (NFPA) 70E

See **SHA-406-7** and **SHA-407-6** for additional information on lockout/tagout procedures.

LOCKOUT/TAGOUT PROCEDURES

An audit of lockout/tagout procedures shall:

- Be conducted at least annually by a qualified person as directed by safety personnel.
- Cover at least one lockout/tagout in progress.
- Be representative of the types of devices and energy sources that employees are exposed to in routine and non-routine work.
- Be designed to correct deficiencies in the procedure or in employee understanding and implementation.

LOW VOLTAGE ELECTRICAL DISTRIBUTION

Random audits of employee compliance with procedures applicable to working with and around low voltage electrical distribution (50-600 volts) should be conducted annually as directed by the supervisor or safety personnel. Audits may be performed internally or by using a qualified consultant and shall include compliance with all applicable OSHA standards and NFPA 70E.

On completion of the audit, corrective actions shall be developed to correct or repair any code deficiencies, and training provided as required on these rules and NFPA 70E.

PROGRAM REVIEW

An internal review of the Kentucky Transportation Cabinet's (KYTC) electrical safety program shall be conducted every three years with appropriate revisions made to ensure the program is current. The documented reports shall be audited to ensure that remedial actions are in line with root causes, and actions are effectively implemented.

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Section	*Subject*
FALL PROTECTION	Overview

REFERENCES

29 CFR 1926 (M) and 29 CFR 1910.140

PURPOSE & SCOPE

Pursuant to 29 CFR 1926.500-503, all employees shall be protected when engaged in work or inspection of work at heights greater than 4 feet on elevated work surfaces, platforms, lofts, decks, floor holes, stairs, tanks, bridges, leading edges, pick boards, one- and two-point suspension scaffolds, scaffold towers, fixed ladders in excess of 20 feet (not applicable to work performed on portable, extension, or step ladders), crane booms, excavations, trenches, aerial lifts, ramps, bucket trucks, snoopers, man baskets, radio or microwave towers, roofs, cliffs, rock ledges of roadway cuts, or any other areas where there is moving machinery or other hazards below the work area.

In the Kentucky Transportation Cabinet's (KYTC) continuing pursuit of a safe and healthy workplace, KYTC has developed a fall protection program to be followed by all employees engaged in outdoor or indoor work activities that expose them to potential falls.

ADMINISTRATIVE RESPONSIBILITY

The Secretary's Office of Safety is responsible for the administration of this policy. The day-to-day aspects of policy implementation shall be the responsibility of district operations, supervisors, and employees assigned a personal fall arrest system (PFAS). Districts and divisions shall designate a fall protection coordinator to assist with program implementation and compliance.

Specific fall protection plans are to be developed prior to any work being performed. (Contractors may use existing, compliant plans when inspections are being performed on contract projects.) The use of PFAS shall be determined by the task or job to be completed, as noted below.

Prior to beginning work, the fall protection plan shall be reviewed and evaluated for procedures related to the prompt rescue of employees in the event of an accident, the availability of rescue equipment and personnel, and alternate rescue plans in place with local emergency services.

ENGINEERING CONTROLS

Guardrail systems shall be used as the primary engineering controls to protect employees from fall hazards. Employees shall be aware of work areas requiring fall protection and check for appropriate guardrail systems before beginning work.

A guardrail system shall be constructed of wood, metal, or wire rope and shall include the following:

- Top rails of 42 inches, +/- 3 inches above the working level, and shall withstand a force of 200 pounds downward and outward
- Mid-rails located halfway between the working level and top rail
- Toe boards 3 ½-4 inches in vertical height from the working level
- Support posts spaced at intervals not to exceed 8 feet

PERSONAL PROTECTIVE EQUIPMENT (PPE) AND WORK PRACTICE CONTROLS

While working at heights greater than 4 feet, employees shall utilize personal fall arrest systems (PFAS) if guardrail systems are not in place. PFAS shall only be used for the purpose intended and in accordance with the manufacturer's guidelines.

Note: PFAS shall be utilized when working from any height on lift platforms, buckets, or other lift devices that may have standard railing.

- Required PFAS Components
  - Anchorage – a secure point of attachment for the fall arrest system
  - Body Support – a full body harness with connection points for the fall arrest system
  - Connectors – devices used to connect the body support to the anchorage system (such as shock absorbing lanyards and self-retracting lifelines)

- PFAS Selection

  All PFAS shall be evaluated and approved by the district's or division's fall protection coordinator in conjunction with the Secretary's Office of Safety following the supervisor's, employee's, or safety personnel's survey of potential fall hazards based on the environment and work to be performed.

  The supervisor or designee, aided by a competent person, shall consider the fall hazards that have been identified and the protective devices necessary to protect employees from these hazards.

PERSONAL PROTECTIVE EQUIPMENT (PPE) AND WORK PRACTICE CONTROLS (CONT.)

- Selected PFAS shall:
  - Be appropriately sized and rated for the employees using them
  - Have permanent, durable identification markings attached to them that do not interfere with the performance of the device
  - Be KYTC-approved

  Note: A current list of KYTC-approved PFAS may be obtained from the Secretary's Office of Safety. KYTC employees shall not purchase or use non KYTC-approved PFAS.

- Assignment of PFAS
  - Whenever possible, PFAS shall be assigned to an individual for his or her exclusive use.
  - When PFAS is assigned to an employee for his or her exclusive use, the designated fall protection coordinator shall maintain a record of the employee and the specific equipment assigned.
  - Temporary emergency assignment of PFAS shall be made by the supervisor.

- PFAS Storage
  - Follow manufacturer's recommendations for equipment storage.
  - A PFAS shall not be stored with other tools, in storage containers not specifically meant for it, directly on the ground, or where it will be exposed to outside elements.
  - Always hang PFAS in a cool, dry location in a manner that will ensure it retains its shape.

- PFAS Training and Education

  Training shall be conducted by a competent person and documented on TC 25-2, *Training Report* (**Exhibit 9009**). A permanent record shall be maintained by the designated fall protection coordinator.

  Employees shall receive training on the following topics prior to the assignment of fall protection equipment:

  - Safe use of PFAS and the role of the employees involved in the fall protection plan
  - Application limits
  - Proper anchoring and tie off techniques

PERSONAL PROTECTIVE EQUIPMENT (PPE) AND WORK PRACTICE CONTROLS (CONT.)

- ♦ Estimation of free fall distance, including determination of deceleration distance
- ♦ Total fall distance to prevent striking lower level
- ♦ Methods of use, including storage and inspection
- ♦ Opportunity to handle selected harnesses
- ♦ PFAS proper fit, including instructions on donning and doffing
- ♦ Proper maintenance, use, limitations, and storage

➢ PFAS Inspections

Prior to each use, PFAS shall be inspected by the employee in consultation with the *Inspection Checklist Guide* (**Exhibit 9018**) for damage, wear, and other deterioration; recorded on TC 25-157, *Fall Protection Equipment Inspection Log*; and maintained on file (**Exhibit 9019**).

Annual inspections shall be completed by a competent person in accordance with 29 CFR 1926.503(a)(2), found online at:

https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.503

Defective components shall be removed from service. Components involved in a fall shall be removed from service immediately.

ACCIDENT & INCIDENT REVIEW

All worker incidents and injuries shall be reported and reviewed, regardless of their nature, including near misses (**SHA-410**). A review of the fall protection plan shall determine if additional practices, procedures, or training are required in order to prevent future incidents or injuries. Equipment involved in a fall incident shall be removed from service immediately. See **SHA-206-3** for information on affixing "DO NOT OPERATE" equipment tags.

ENFORCEMENT & DISCIPLINE

Employees who do not conform to the fall protection program policies and procedures may be subject to disciplinary action. The supervisor is the designated individual responsible for the proper use of all PPE, including PFAS.

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Section	*Subject*
FALL PROTECTION	Ladders & Scaffolds

REFERENCES

29 CFR 1910.23, 1910.27; and 29 CFR 1926.1053, Subpart L

DEFINITIONS

- *Competent person* – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

  Additional information on competent persons may be found online at:

  https://www.osha.gov/competent-person

- *Qualified person* – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

LADDER USE PRECAUTIONS

Prior to use (or each day), employees shall perform an inspection of all ladders. The inspection shall be documented by completion of a *Ladder Inspection Checklist* in the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system. If completion of the BOOTS form is not possible, employees may use the printable *Ladder Inspection Checklist* available on the Secretary's Office of Safety (SOS) intranet site.

Employees should review the following general precautions before using a ladder:

- Ladders shall be well-constructed, with the rungs inset in the side rails. The bottom of the ladder shall have rubber safety feet. Ladders shall be used in accordance with manufacturer's recommendations.
- When ladders are positioned, they shall not be too straight or at too great an angle. The best angle for ladder placement is when the distance from the wall to base of the ladder is approximately one-fourth of the overall length of the ladder.

LADDER USE PRECAUTIONS (CONT.)

- Ladders should always have firm footing and should be properly tied off with a rope or heavy string to prevent shifting.
- Only fiberglass ladders shall be used for repairs to electrical equipment or energized lines.
- Ladders shall be stored away from traffic areas where damage or injury could occur.
- All ladders used to access overhead storage areas or roofs must extend at least 3 feet above the point of support.
- Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
- Employees should not utilize a ladder without first being trained on the proper use, care, maintenance, and transport of a ladder.

SCAFFOLD USE PRECAUTIONS

Prior to use (or each day), a competent person should perform an inspection of all scaffold assemblies. The inspection shall be documented by completing a *Scaffolding Inspection Checklist* in BOOTS.

Employees should review the following general precautions before using a scaffold:

- Scaffolds shall be erected, moved, dismantled, or altered only under the supervision of a competent person.
- Scaffolds shall be constructed as follows:
  - Plumb and level
  - Able to support four times the maximum intended load
  - With solidly-planked platforms, a minimum of 18 inches wide, made of scaffold-grade lumber
- Free-standing scaffolds shall be anchored to the structure every 26 feet vertically and every 30 feet horizontally.
- Safe and convenient access shall be provided to the platform level by ladder, stair, or other recognized method.
- Scaffold suspension rope shall be free of splices and be capable of supporting six times the intended load.

SCAFFOLD USE PRECAUTIONS (CONT.)

- Catenary (picks), one-point or two-point suspension, and boatswain chair scaffolds that require fall protection shall be independent of the scaffold or scaffold supports.
- Persons working from scaffolds shall utilize a personal fall arrest system (PFAS) and comply with the KYTC's fall protection program. See **SHA-408-1** for PFAS information.
- Employees must attend required safety briefings by competent persons prior to entering scaffolds.
- Scaffolds must be designed by a qualified person and must be constructed, loaded, and inspected daily by a competent person in accordance with that design before use.
- Adequate sills for scaffold posts and base plates must be used.
- Open sides and ends of scaffolds more than 6 feet (1.8 meters) above the ground must have the following:
  - A top rail approximately 42 inches (1075 millimeters) high and capable of withstanding 200 pounds of downward force
  - A mid rail
  - A toe board

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Section

FALL PROTECTION

Subject

The 3-Points of Contact Rule

DEFINITION

Three (3) points of contact – In the context of this manual, "3-points of contact" means the operator should always have at least three points of contact with the equipment: two hands and one foot, or one hand and two feet, as shown in Figure 5.

Figure 5: 3-Points of Contact

PURPOSE & SCOPE

The Occupational Safety and Health Administration (OSHA) recommends the 3-points of contact rule for employees when entering and exiting a vehicle or piece of equipment. Following the 3-points of contact rule will provide workers with the most stability, therefore reducing the risk of slips and falls.

RELATED PRECAUTIONS

In addition to the 3-points of contact rule, employees should periodically review the following precautions for entering or exiting a vehicle or piece of equipment:

- Do not mount and dismount when equipment is in motion.
- Face towards the machine, unless the manufacturer notes otherwise.
- Do not break the 3-points of contact until the destination (ground, vehicle cab, platform) is reached.

RELATED PRECAUTIONS (CONT.)

- Keep movements slow and steady.
- Be extra cautious in wet, muddy, snowy, or icy conditions.
- Wear appropriate footwear with adequate support, traction, and slip resistance for the weather conditions and the equipment surfaces.
- Avoid loose or bulky clothing as it could get caught in the equipment or interfere with contact points.
- Do not step on tires or wheel hubs.
- Do not use the door frame or edge as a handhold.
- Look for obstacles on the ground before exiting the vehicle.
- Never jump off equipment.

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Chapter

WORKPLACE RISK ASSESSMENT & PREVENTION

Subject

Hazard Communication Standard (Workplace Chemicals)

REFERENCES

29 CFR 1910.1200 (h)

PURPOSE & SCOPE

KYTC management is committed to complying with all applicable federal and state health and safety rules. Under this program, employees are informed of the contents of Occupational Health and Safety Administration (OHSA) Hazard Communication Standard [29 CFR 1910.1200(h)], the hazardous properties of chemicals with which they work, safe handling procedures, and measures to protect themselves from hazardous chemicals.

LABELING CONTAINERS OF HAZARDOUS CHEMICALS

The labeling system used by KYTC shall follow the requirements set out in the OSHA Hazard Communication Standard (Rev. 2024) and consistent with the United Nations Globally Harmonized System (GHS) of Classification of Labeling of Chemicals.

The label on the chemical is intended to convey information about the hazards posed by the chemical through the standardization label elements, including symbols, signal words, and hazard statements.

The supervisor of each KYTC facility shall ensure that all hazardous chemical containers have the original manufacturer's label that includes the following:

- A product identifier
- An appropriate signal word
- Hazard statements
- Pictograms
- Precautionary statements
- Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

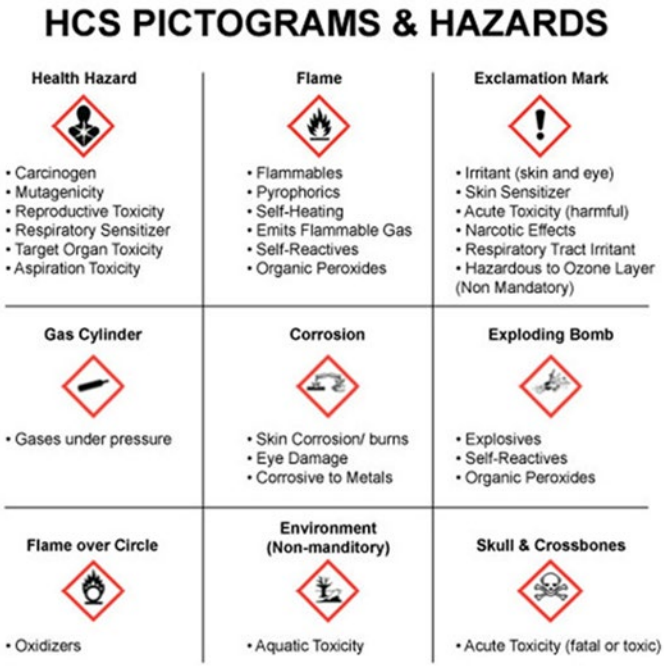
Workplace labeling (legible and in English) shall include the product identifier and words, pictures, symbols, or combination that provides at least general information regarding the hazards of the chemicals.

LABELING CONTAINERS OF HAZARDOUS CHEMICALS (CONT.)

Small quantities of hazardous chemicals intended for immediate use may be placed in a temporary container without a manufacturer's label, provided:

- The employee using the chemical must keep it in his or her possession at all times.
- The product is depleted during the work shift or properly disposed of at the end of the workday.
- The temporary container shall be marked with its contents.

Figure 6. OSHA Hazard Communication Standards Labeling System



Source: Occupational Safety and Health Administration

SAFETY DATA SHEETS (SDS)

When any hazardous chemical is purchased locally, the supervisor shall ensure that a safety data sheet (SDS) containing specific, detailed information about the chemical's hazard is obtained from the distributer or supplier at the time of purchase.

SDSs shall be made readily available to all employees during their work shifts. Employees can review SDSs for all hazardous chemicals used at each location by requesting them from the location supervisor or safety coordinator.

SAFETY DATA SHEETS (SDS) (CONT.)

For facilities with employees who do not have access to electronic safety data sheets, supervisors shall print SDSs for each chemical used at that facility and place them in an SDS file.

The SDSs shall be updated and managed by the facility supervisor. SDSs and chemical inventory shall be reviewed annually for accuracy. If an SDS is not immediately available for a hazardous chemical, employees may obtain a copy by contacting the district safety coordinator.

TRAINING

Employees should not be exposed to hazardous chemicals in their work area at the time of their initial assignment or when a new chemical hazard is introduced into the work area, until they receive training including, but not limited to, categories of hazards (such as flammability and carcinogenicity) or specific chemicals. Chemical-specific information shall be made available through labels and SDSs.

Employees shall attend a hazard communication training that covers the following topics:

- An overview of the requirements in OSHA's Hazard Communication Standard
- Hazardous chemicals present in the employee's workplace
- A review of operations in the employee's workplace where hazardous chemicals are used
- The location of the written hazard communication plan and where it may be reviewed
- How to understand and use the information on labels and SDSs
- Physical and health hazards of chemicals in the employee's work area
- Methods used to detect the presence or release of hazardous chemicals in the employee's work area
- Steps taken to prevent or reduce the employee's exposure to hazardous chemicals
- How employees can protect themselves from exposure to hazardous chemicals through the use of engineering controls, work practices, and personal protective equipment
- An explanation of any special labeling present in the workplace, such as pictograms, signal words, hazard statements, and precautionary statements
- Emergency procedures to follow if an employee is exposed to hazardous chemicals

TRAINING

The Secretary's Office of Safety is responsible for managing the Hazard Communication Standard training program, and the district safety coordinator is responsible for delivering the training to ensure that each employee is aware of the program. After attending the training, employees will sign TC 25-2*, Training Report,* verifying that they understand the training topics and how they are related to KYTC's hazard communication program (**Exhibit 9009**).

INFORMING EMPLOYEES WHO DO SPECIAL TASKS

Before employees perform non-routine tasks that may expose them to hazardous chemicals, their supervisors shall advise them of the chemicals' hazards. Supervisors shall also inform employees of exposure control methods and emergency procedures. The supervisor will evaluate the task's hazards and provide appropriate controls, including personal protective equipment and additional training as required.

INFORMING CONTRACTORS & OTHER EMPLOYEES

If an employee of an employer other than KYTC may possibly be exposed to hazardous chemicals at a KYTC workplace (for example, contract employees of janitorial staff at rest areas), the district safety coordinator – once notified – shall provide those employees and their employers with the following information:

- The identity of the chemicals
- How to review the SDSs
- Explanation of the container labeling system
- Safe work practices to prevent exposure

Facility supervisors will also obtain an SDS for any hazardous chemical a contractor brings into the work area.

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WORKPLACE RISK ASSESSMENT & PREVENTION

Subject

Safety Opportunity Report

REFERENCES

OSHA Recommended Practices for Safety and Health Programs available online at:

https://www.osha.gov/safety-management

BACKGROUND INFORMATION

To be effective, any safety and health program needs the meaningful participation of employees. Participation means that employees are involved in establishing, operating, evaluating, and improving the safety and health program. Employees have much to gain from a successful program and the most to lose if the program fails. They also often know the most about potential hazards associated with their jobs. Successful programs tap into this knowledge base.

Employees are often best positioned to identify safety and health concerns and program shortcomings, such as emerging workplace hazards, unsafe conditions, close calls or near misses, and actual incidents. By encouraging reporting and following up promptly on all reports, KYTC can address issues before someone gets hurt or becomes ill.

It is key to involve employees in finding solutions to reported issues.

PURPOSE & SCOPE

The *Safety Opportunity Report* establishes a process for any Kentucky Transportation Cabinet (KYTC) employee to report close calls or near misses, hazards, and other safety and health concerns.

Anonymous reporting is available to reduce an employee's fear of reprisal; however, identifying the specific district is highly encouraged to ensure the Secretary's Office of Safety may respond promptly and document findings.

Additionally, employees are advised that it is illegal for employers to take any action against employees in reprisal for exercising their rights to report safety issues.

PURPOSE & SCOPE (CONT.)

A *Safety Opportunity Report* enables any employee to report the following:

- Near-miss or close-call situations where there is an event that did not result in injury, illness, or property damage, but had the potential to do so.
- Ideas for improving safety and health outcomes for employees
- Concerns about hazardous procedures or conditions

A *Safety Opportunity Report* is part of a participatory process of creating a safer and healthier work environment. Completing a *Safety Opportunity Report* can significantly contribute to the prevention of future accidents and injuries.

ADMINISTRATIVE RESPONSIBILITY

Secretary's Office of Safety is responsible for the administration of this program. Personnel may contact the Secretary's Office of Safety or the designated safety coordinator if further information is needed.

REPORTING PROCEDURE

Safety Opportunity Reports may be submitted by any employee by any of the below methods:

- Online through the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system (preferred):
  - Computer – Use the URL **https://bit.ly/kytc-boots**
  - Mobile device – Scan the QR code below.

Figure 7. BOOTS QR Code Access

REPORTING PROCEDURE (CONT.)

- Telephone – Call 1-833-ESH-KYTC (374-5982) toll free 24 hours per day, 7 days per week, and leave a voice message.

Figure 8. BOOTS Reporting Flyer

Regardless of the method used, employees may submit a *Safety Opportunity Report* anonymously, if preferred; however, employees are advised that it is illegal for employers to take any action against employees in reprisal for exercising their rights to report safety issues.

FOLLOW-UP PROCEDURE

Each *Safety Opportunity Report* submitted will be acknowledged and reviewed for possible further action following the process detailed in **SHA-709**.

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Subject

Incident Prevention Tag System

PURPOSE & SCOPE

Pursuant to Kentucky Occupational Safety and Health (KOSH) regulations, the Kentucky Transportation Cabinet (KYTC) must have an incident prevention tag – or red tag – system.

The purpose of the red tag system is to remove faulty or damaged equipment from service and, by doing so, prevent injuries to both state employees and the public, as well as financial loss to the state.

TAGGING PROCEDURE

The following information shall be entered by the authorized inspector on any tag affixed to state equipment:

- State inventory or equipment number
- Type of equipment
- Reason for tagging
- Signature of person completing tag
- Date tag affixed

Figure 4. Lockout Tag Example
(See also SHA-406-7)

The supervisor responsible for the equipment shall be notified of the equipment being tagged out of service and will have the equipment repaired, replaced, or maintained out of service until repairs are made by qualified personnel.

TAGGING PROCEDURE (CONT.)

Tags shall only be removed once appropriate repairs have been made and the person placing the tag has inspected the equipment to be placed back into service. The authorized inspector placing the tag is the only person authorized to remove the tag allowing it to return to service.

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Subject

Underground Utility Precautions

REFERENCES KRS 367.4903 to 367.4917; Kentucky 811

DEFINITIONS

- *Excavation* – Any activity resulting in the movement, placement, probing, boring, or removal of earth, rock, or other material in or on the ground by the use of any tools or equipment, including the discharge of explosives, or by harvesting timber using mechanized equipment. Forms of excavation may include auguring, backfilling, digging, ditching, drilling, driving, grading, piling, pulling-in, ripping, scraping, trenching, and tunneling.

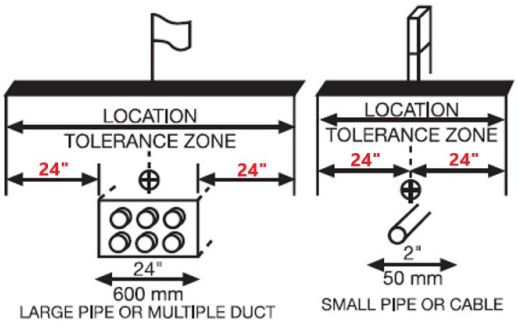
  Note: Driving wooden stakes by hand tools to depths of six (6) inches or less does not constitute excavation.

- *Emergency* – Any situation where there exists the substantial likelihood that loss of life or property, the inability to restore interrupted utility service, an imminent danger to health or the environment, or the blockage of public transportation facilities.

- *Nonintrusive Excavating* – Excavation using hand tools or equipment that use air or water pressure to break up soil for removal.

- *Tolerance Zone* – Area equal to the width of the underground facility + 24 inches on each side. If no width is given by the utility, assume 2 inches.

Figure 9. Excavation Tolerance Zone Calculation Example



PURPOSE & SCOPE

This policy establishes guidelines for underground utility precautions in achieving safe excavation and preventing damage, and applies to all Kentucky Transportation Cabinet (KYTC) employees, contractors, and sub-contractors who may encounter the hazards of underground utilities during excavation.

ADMINISTRATIVE RESPONSIBILITIES

KYTC project managers and supervisors are responsible for planning excavation work, establishing dig times, contacting 811 to initiate locate requests to affected utility operators (members and non-members), and ensure completion of locate requests.

- All locate requests *must* be made at least 2 business days before digging to allow adequate response time from utility operators and owners. This excludes Saturdays, Sundays, and legal holidays, per KRS 367.4903(12).

- To submit a locate request, contact the one-call center by dialing 8-1-1 or 800-752-6007, or submit your request online at:

  https://www.kentucky811.org/

- KYTC project managers and supervisors must retain locate request ID numbers for the full duration of the job, and are responsible for ensuring that multiple crews at the same site are informed of each other's locates.

TEMPORARY MARKERS

Temporary markers consist of paint, chalk, flags, stakes, or combination thereof, and conform to the American Public Works Association uniform color code: [KRS 367.4909 (B)J]

Table 2. American Public Works Association Uniform Color Code

RED	Electric Power Lines, Cables, Conduit and Lighting Cables
YELLOW	Natural Gas, Oil, Steam, Petroleum, Gaseous Materials
ORANGE	Communication, Alarm or Signal Lines, Cables, Conduit
BLUE	Potable Water
PURPLE	Reclaimed Water, Irrigation and Slurry Lines
GREEN	Sewers and Drain Lines
PINK	Temporary Survey Markings
WHITE	Proposed Excavating

Remarking shall be requested by the supervisor every 21 days during excavation.

SAFE DIGGING

KYTC employees are responsible for digging safely and taking every reasonable precaution to protect the public and underground facilities from damage.

- Employees *must* check to verify markings before attempting to dig.

  Warning: Do not proceed if markings are unclear or not present, even if you see evidence of digging or surface indicators of unmarked utilities.

- Kentucky law requires observance of the tolerance zone during excavation. Digging methods in specified tolerance zones shall be non-intrusive, such as hand digging, pot holing, and vacuum excavation, to avoid potential damage. If damage occurs, excavation or demolition shall cease immediately, and all affected utility operators shall be notified of the damage.

- If required to dig within the tolerance zone, employees shall hand-dig or use non-intrusive means to avoid potential damage.

- Employees shall hand dig when within 24 inches of either side of the underground utility line.

EMERGENCY WORK

Activities *must* meet the definition of "emergency" to be exempt from notification requirements. Routine road maintenance is not emergency work.

Authorized persons responding to emergency situations may not be required to comply with excavator and operator notification requirements per KRS 367.4905 to 367.4917.

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Work Near or Over Water

REFERENCES 29 CFR 1926.106; **SHA-1611**

"DANGER OF DROWNING" DEFINED

The Occupational Safety and Health Administration (OSHA) has not established a minimum depth of water that constitutes a "danger of drowning." Rather, several factors are to be considered when determining whether a danger of drowning exists.

These include the body of water type (pool, river, canal), depth, presence or absence of a current, workplace height above the water surface, and worker use of fall protection where the fall height is great enough to cause injury or unconsciousness.

Water conditions sufficient to present a danger of drowning include, but are not limited to, the following:

- Moving and has a depth of 2 feet or more
- Still (or with minimal current) and is chest deep or greater
- Contains observed or has the potential for the presence of exposed or submerged objects such as rocks, debris, or entanglement hazards

RISK CONTROLS NEAR OR OVER WATER

Employees working near or over water where the danger of drowning exists shall not begin work until the protective requirements below are implemented:

- Hazard and capability assessment
- Fall prevention through guardrail, safety net, or personal fall restraint/arrest system

RISK CONTROLS NEAR OR OVER WATER (CONT.)

Employees on a walking or working surface with an unprotected side or edge must be protected by use of a guardrail system, safety net system, or personal fall arrest system with 100 percent tie-off where either of these conditions exists:

- ♦ At a height of 4 feet or greater, even if no danger of drowning is present
- ♦ At any height if a danger of drowning is present

➢ Personal flotation devices if risk of fall or drowning is not removed by fall prevention

Unless fully enclosed in a continuous guardrail system or utilizing fall-arrest system incorporating 100 percent tie off (without exception), it is required that employees wear U.S. Coast Guard-approved personal flotation devices (life jackets). (**SHA-1611**)

➢ Emergency preparedness and rescue plan, including equipment

➢ Job safety and emergency action briefing

RISK CONTROLS ON OR FROM A VESSEL

Vessels or watercraft are any boat, kayak, canoe, either motorized or non-motorized. If operated on navigable waterways motorized vessels or watercraft are also subject to compliance with applicable U.S. Coast Guard requirements.

Personal flotation devices are required for any person launching, retrieving, or using a vessel or watercraft and shall be U.S. Coast Guard-approved (**SHA-1611**).

It is recommended that any operator of a motorized vessel complete the Kentucky Department of Fish & Wildlife Resources Boater Education course and possess a Kentucky boating license.

If operating onboard a vessel operated by a contractor or other entity, employees are required to comply with all safety requirements of the vessel operator or master.

RISK CONTROLS ON SHORE ADJACENT TO WATER

Work on shore adjacent to water where a danger of drowning exists should be treated in the same way as work over water if the slope is 2:1 or greater, or if the walking surface is rocky or slick. The same protective requirements for work over water would be required.

EMERGENCY PREPAREDNESS

A first aid kit including supplies for rescue breathing and CPR, as well as least one trained responder, shall be on standby on site where employees are exposed to a danger of drowning.

Ring buoys with at least 90 feet of line shall be readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

At least one lifesaving skiff (vessel) shall be available at locations where employees are working over or adjacent to water. This requirement applies at all times regardless of water depth *unless* the water depth where employees are working has a depth shallow enough to allow rescuers to walk in or would result in vessel grounding.

At all times there must be a plan and means to retrieve an employee from the water within four (4) minutes from the time they enter the water. However, if there are additional hazards (such as very cold water or downstream hazards) appropriate measures should be in place to complete retrieval of an employee before they sustain injuries as a result of those additional hazards.

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Chapter

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Subject

Overview

REFERENCES

29 CFR 1910 Subpart I; 29 CFR 1926 Subpart C

PURPOSE & SCOPE

The purpose of the Secretary's Office of Safety personal protective equipment (PPE) program is to protect employees of the Kentucky Transportation Cabinet (KYTC) from exposure to workplace hazards and risk of injury through the use of PPE. This PPE program is part of a workplace risk assessment and prevention program (**SHA-404**).

All personnel shall follow KYTC's policy requiring the proper use of all safety equipment, including PPE. Any deviation from the policy may result in disciplinary action (**GAP-801**).

ADMINISTRATIVE RESPONSIBILITIES

The Secretary's Office of Safety shall approve the purchase of all PPE to ensure items meet Occupational Safety and Health Administration (OSHA) requirements, specific task requirements, and KYTC specifications.

In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons for the purposes of this section and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personal protective equipment.

KYTC safety personnel shall:

- Conduct job hazard analyses to determine the appropriate PPE and shall certify the assessment in writing (**SHA-402**).
- Ensure the use of PPE identified on the Safety Data Sheet when working with hazardous chemicals (**SHA-409**).
- Evaluate and approve employee-owned PPE prior use in the workplace.

PURCHASES

Questions concerning uniform or PPE availability shall be directed to the district or division purchasing point of contact. Supervisors and employees may also consult the Office of Budget and Fiscal Management, Division of Purchases found online at:

https://transportation.ky.gov/BudgetFiscalManagement/Pages/Purchases.aspx

MEDICAL ACCOMMODATIONS

Medically-related deviations from PPE requirements on either a temporary or permanent basis may be granted on a limited basis. The procedure for reporting, review, and approval of these medical accommodations are detailed in **GAP-304**.

Key elements include:

- ALL requests for accommodation are to be submitted to the KYTC Office of Human Resource Management, Employee Compliance Branch (ECB), for review and decision on accommodation.
- Per GAP-304, the employee must submit a completed TC 12-201, *Request for Reasonable Accommodation,* either directly or through their supervisor to the ECB.
- The requesting employee's management shall consult with the ECB to determine if a medical provider report is required.
- If a medical provider report is required, the requesting employee must have their medical provider complete the report, and is responsible for submitting the report to management for forwarding to ECB.

Note: If related to footwear, the employee must comply with existing footwear requirements until the ECB provides confirmation of their decision on the request.

This procedure for reporting, review, and approval of PPE medical accommodations has been established to ensure consistency and objectivity in the review and approval criteria, establish any limitations or conditions on the accommodation, protect the employee from harm, reduce liability exposure, and ensure compliance with policy and statutes.

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Chapter	PERSONAL PROTECTIVE EQUIPMENT (PPE)
Subject	Head Protection

REFERENCES

29 CFR 1910.135 and 29 CFR 1926.100

PURPOSE & SCOPE

Regardless of job titles or work locations (outdoors or indoors), Kentucky Transportation Cabinet (KYTC) employees engaged in work where there is a possible danger of head injury as the result of impact, falling or flying objects, or electrical shock or burns, shall wear hard hats at all times that meet applicable American National Standards Institute (ANSI) standards for the type of work being performed.

ADMINISTRATIVE RESPONSIBILITIES

All newly hired KYTC employees shall be provided with a new, unused, and unexposed hard hat. Hard hats shall not be reissued. All KYTC employees shall follow the manufacturer recommended guidelines.

Only hard hats approved and issued by KYTC Secretary's Office of Safety shall be worn.

Employees who are authorized to work with or near live electrical components shall wear only ANSI Class E rated hard hats.

EMPLOYEE RESPONSIBILITIES

It is ultimately the responsibility of each employee to wear a hard hat or other headwear in applicable areas in compliance with this policy.

Employees who repeatedly disregard personal protective equipment (PPE) policies and rules will be subject to disciplinary action up to and including dismissal from KYTC.

HARD HAT PARTS, INSPECTION, & MAINTENANCE

A conventional hard hat consists of two components – the shell and the suspension – which work together as a system. Both components require periodic inspection and maintenance.

HARD HAT PARTS, INSPECTION, & MAINTENANCE (CONT.)

- *Hard Hat Shell.* The shell should be inspected daily for dents, cracks, nicks, gouges and any damage due to impact, penetration, abrasions, rough treatment, or wear that might reduce the degree of protection originally provided. Degradation of thermoplastic material may be apparent when the shell becomes stiff, brittle, faded, dull in color, or exhibits a chalky appearance. With further degradation, the shell surface may break, minutely crack, flake, or delaminate.

  The shell may be field tested by compressing it inward from the sides about 1" (2.5 cm) with both hands and then releasing the pressure without dropping the shell. The shell should exhibit elasticity by quickly returning to its original shape.

  Any hard hat shell that shows signs of worn or damaged parts, lack of elasticity, or cracks due to brittleness shall be removed from service immediately and replaced.

- *Hard Hat Suspension.* The hard hat suspension system is just as important as the shell. Its main purpose is to help absorb the shock of an impact. To do so, it must be in good condition at all times.

  Suspensions should be inspected closely for cracks, frayed or cut crown straps, torn headband or size adjustment slots, loss of pliability, and other signs of wear. These conditions can be caused by perspiration, hair oils, or normal wear.

  Any suspension that is damaged must be removed from service and replaced immediately according to the manufacturer guidelines regarding suspension system replacement.

Hard hat service life can be extended by cleaning both the shell and the suspension, and should be made a part of the regular inspection and maintenance program.

1. Scrub the shell and suspension with a mild detergent to remove dirt and stains.
2. Rinse thoroughly with clean, warm water, not to exceed 50°C (120°F).
3. After rinsing, wipe dry and once again carefully inspect for any signs of damage.

HARD HAT PARTS, INSPECTION, & MAINTENANCE (CONT.)

Given the proper care and normal workplace conditions, a hard hat has a reasonable service life. However, all hard hats are susceptible to ultraviolet light damage, temperature extremes, and chemical degradation. Thus, users who work in environments with high degrees of exposure to sunlight, heat, cold, or chemicals should inspect, clean, and possibly replace their hard hats more frequently than workers in other environments.

HARD HAT SPECIAL PRECAUTIONS

In addition to adhering to a regular inspection and maintenance schedule, employees should be aware of the following special precautions.

Caution: Failure to observe these warnings could result in death or serious injury.

- If the hard hat has been struck by a forcible blow of any magnitude, the hard hat shall be replaced immediately, even if no damage is visible.
- The hard hat shell or suspension shall not be altered or modified.

  For example: Drilling holes in the shell for ventilation purposes is prohibited.
- Avoid contact of the hard hat with electrical wires.
- Hard hats shall not be stored on the rear window shelf of an automobile or anywhere in direct sunlight. Exposure to extreme sunlight may lead to degradation of the hat's protective materials.
- Do not intentionally abuse hard hats by dropping, throwing, or sitting on them. Hard hats shall not be used as supports.
- Clearance must be maintained between the shell and head for the hard hat protection system to work properly. Therefore, wearers shall not carry or wear anything inside their hard hat.
- Do not paint a hard hat as some paints and solvents may damage the shell, reducing the degree of protection originally provided.
- Do not apply stickers to the hard hat as this may cover up a damaged area or result in damage to the shell.

HARD HAT REPLACEMENT

PROGRAM GUIDELINES While specific replacement schedules must be based on the work conditions at each job site, the Secretary's Office of Safety generally recommends replacing all employee's hard hats after five years of service, regardless of outward appearance. However, a hard hat shall be replaced sooner if the manufacturer specifies a replacement interval of less than five years.

If a hard hat has not been placed into service, but is over five years old (note the date stamp on the inside of the hat), the manufacturer shall be contacted immediately to determine if the item should be removed from service. Typically, if a hat has been stored in a cool, dry place away from direct sunlight, it would still be suitable to be placed into service. It is KYTC policy to approve a hard hat for use as long as it passes inspection and field tests, and the manufacture does not recommend replacement.

Where user environments are known to include longer exposures to temperature extremes, sunlight, or chemicals, hard hats shall be replaced every two years. In certain rare instances, a hat may require replacement in less than two years.

If an employee's hard hat is defective and a new one is requested, the supervisor shall immediately provide a replacement regardless of the hat's age.

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PERSONAL PROTECTIVE EQUIPMENT (PPE)

Subject

Welding Helmets

REFERENCES 29 CFR 1926.102 and 29 CFR 1910.252

PURPOSE & SCOPE Employees are required to wear a protective welding helmet with the appropriate lenses and plates while welding or inspecting welding on construction sites.

SHADE REQUIREMENTS Filter lenses and plates shall be chosen in accordance with the welding operation. A guide to the proper shade numbers follows:

Table 3. Welding Helmet Shade Requirements Per Operation

WELDING OPERATION	SHADE #
Shielded metal- arc welding: 1/16", 3/32", 1/8", 5/32" electrodes	10
Gas- shielded arc welding (nonferrous): 1/16", 3/32", 1/8", 5/32" electrodes	11
Gas- shielded arc welding (ferrous): 1/16", 3/32", 1/8", 5/32" electrodes	12
Shielded metal- arc welding: 3/16", 7/32", 1/4" electrodes	12
Shielded metal- arc welding: 5/16", 3/8" electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1"	3 or 4
Medium cutting, 1" to 6"	4 or 5
Heavy cutting, 6" and over	5 or 6
Gas welding (light) up to 1/8"	4 or 5
Gas welding (medium) 1/8" to 1/2"	5 or 6
Gas welding (heavy) 1/2" and over	7 or 8

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Eye Protection

REFERENCES

29 CFR 1910.133; 29 CFR 1926.102; ANSI Z-87

PURPOSE & SCOPE

Appropriate eye protection shall be used by employees exposed to eye hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

SAFETY SPECTACLES (ANSI Z-87)

Safety spectacles protect employees from straight-on impact to the eyes and, along with side shields, are required for complete eye protection. Employees shall wear safety spectacles and side shields when engaged in grinding, machining, woodworking, chipping, chiseling, post driving, jackhammering, concrete cutting, cutoff sawing, chain sawing, drilling, or any other tasks where there is a potential hazard from flying objects or particles.

Be aware of the following precautions:

- Safety spectacles are not appropriate protection for nuisance dust, rust particles, light, radiation, or other particulates.
- Regular scratch-resistant prescription spectacles do not provide impact resistance and are not to be used for impact eye protection. Over-the-glasses (OTGs) glasses are available for workers who wear prescription eyewear and need impact eye protection.

GOGGLES

Appropriate goggles shall be worn when hazards include nuisance dust, rust particles, light radiation, sand, glass beads, sprays and mists, chemicals, or other particulates.

Four basic goggle types are:

- *Impact goggles* have perforated holes in the side with direct ventilation.
- *Chemical goggles* have passive vents with indirect ventilation.
- *Ventless goggles* eliminate entry of contaminants.
- *Cutting goggles* protect against harmful light and radiation.

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Subject

Face Protection

REFERENCES

29 CFR 1910.133 and 29 CFR 1926.102

REQUIREMENTS

Employees are required to wear face shields when using a battery charger, handling corrosives, pouring chemicals, or performing any other activities that necessitate use of full-face protection.

Face shields protect the face; however, they do not provide eye protection from impact. Therefore, eye protection shall be worn under the face shield.

Chain saw operators shall wear a mesh face shield, along with eye protection (**SHA-504**).

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Chapter	PERSONAL PROTECTIVE EQUIPMENT (PPE)
Subject	Respiratory Protection

REFERENCES 29 CFR 1910.134

PURPOSE & SCOPE The Kentucky Transportation Cabinet (KYTC) will provide respirators, including disposable types, to employees who are exposed to air contaminated with harmful dusts, fogs, mists, fumes, gases, smokes, sprays, or vapors. Depending upon the type of exposure, respirator use may be required or optional.

REQUIRED WEAR In situations where respirator use is required, all applicable provisions of the KYTC respiratory protection program shall be met. These provisions include, but are not limited to, selection, medical evaluation, fit testing, use, cleaning, storage, and training (**SHA-406-1**).

The selection of the appropriate respirator shall be made based upon the hazard encountered, and in accordance with applicable Occupational Safety and Health Administration (OSHA) standards and KYTC's respiratory protection program.

Supervisors shall contact the designated respirator program coordinator with any questions regarding respiratory protection. All provisions above shall be met **before** an employee is permitted to wear a respirator.

OPTIONAL WEAR In situations where employees choose to use disposable respirators, but not required to do so, supervisors shall provide employees with information from 29 CFR 1910.134, Appendix D, *Information for Employees Using Respirators When Not Required Under the Standard*.

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PERSONAL PROTECTIVE EQUIPMENT (PPE)

Subject

Life Jackets
(Personal Flotation Devices)

REFERENCES

See **SHA-413** for a definition of "danger of drowning."

PURPOSE & SCOPE

Kentucky Transportation Cabinet (KYTC) employees working in close proximity to water when the danger of drowning exists will be given access to life jackets (personal flotation devices) and other applicable personal protective equipment (PPE) in order to mitigate the risk of drowning.

REQUIREMENTS

Life jackets shall be U.S. Coast Guard-approved.

Life jackets shall be worn by Kentucky Transportation Cabinet (KYTC) employees working in close proximity to water when the danger of drowning exists, *except* when a fall-arrest system incorporates a 100 percent tie-off rule.

Employees should consult the following sections of this guidance manual for specific requirements and uses of life jackets during KYTC operations:

- **SHA-413**, *Work Near or Over Water*
- **SHA-1611**, *Bridge Inspection and Maintenance*

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Subject

Hand Protection

REFERENCES

29 CFR 1910.138 and 29 CFR 1926.95; ASTM F496

PURPOSE & SCOPE

Employees at risk of exposing their hands to solvents, acids, abrasion, lacerations, heat, and punctures, shall be provided with the appropriate gloves to protect their hands.

ADMINISTRATIVE RESPONSIBILITIES

Supervisors shall ensure the completion of TC 25-156, *Job Safety Analysis & PPE Certification of Hazard Assessment,* for each task to determine the type of glove and degree of protection needed (**Exhibit 9001**).

EMPLOYEE RESPONSIBILITIES

Employees at risk of exposing their hands to solvents, acids, abrasion, lacerations, heat, and punctures, shall wear gloves to protect their skin.

TYPE OF GLOVES & USES

Employees should review the following list when determining the type of gloves needed for a particular task. If there is any question about which type of glove is needed, contact the employee safety and health representative.

- *Rubber gloves* shall be provided for handling certain types of chemicals and acids.
- *Other types of chemical-resistant gloves* shall be purchased for handling pesticides and other chemicals as required by their specific safety data sheets or product labels.
- *Welder's gloves* shall be worn by employees who are cutting, welding, or conducting other such operations.
- *Impermeable gloves* shall be worn by employees while working with certain types of solvents.

Caution: Since these are not a stocked item, they must be purchased locally. Contact your Safety Coordinator or Administrator if you need assistance in selecting the correct glove.

TYPE OF GLOVES & USES (CONT.)

- *Disposable vinyl/nitrile gloves* shall be worn when providing first aid, cleaning rest rooms, picking up litter or dead animals, or performing other activities where direct contact is undesirable.

- *Electrical rated gloves* shall be worn by employees working with electricity *unless* the power can be turned off and lock out/tag out procedures are followed (**SHA-406-7**, **SHA 407-6**).

  Electrical gloves must be electrically tested before being issued for such use. They must also be visually inspected and air tested for any possible defects (cuts, holes, tears, embedded objects, changes in texture) before each day's use and whenever there is a reason to believe they may have been damaged. Best practice is to inspect and air test gloves before each use.

  Gloves must also be electrically tested at regular intervals of not more than every 6 months. (ASTM F496, *Standard Specification for In-Service Care of Insulating Gloves and Sleeves for Appropriate Test Methods*)

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Chapter

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Subject

Worker Safety Apparel

REFERENCES

ANSI/ISEA 107-2015; ANSI/ISEA *American National Standard for High-Visibility Safety Apparel*

PURPOSE & SCOPE

The Kentucky Transportation Cabinet (KYTC) promotes safety, hygiene, and a positive environment for employees and the general public. All employees shall wear the proper apparel to avoid job-related injuries (**SHA-1504** and **SHA-1802**).

The worker safety apparel requirements contained in this Safety and Health Administration Guide are separate from, and in addition to, any uniform policy or dress code contained in **GAP-806**, *Employee Dress Code*.

ADMINISTRATIVE RESPONSIBILITIES

Supervisors are designated as the competent person responsible for worker safety within the activity area of any job site and are responsible for the assessment, selection, and use of appropriate safety apparel, including personal protective equipment (PPE).

PPE items bearing the KYTC logo shall not be distributed to or used by non-employees, to include inmate work crews contracted by KYTC.

EMPLOYEE RESPONSIBILITIES

Employees should wear appropriate clothing that not only provides protection from hazards directly related to the task being performed, but also from sunburn, burns, insects, and poisonous plants. This shall include, but is not limited to, long pants and shirts/blouses that cover the shoulders and upper arms.

HIGH VISIBILITY APPAREL

The purpose of high-visibility (hi-vis) apparel is to increase the visibility of workers to motorists and equipment operators, thereby reducing the risk of workers being struck. Due to the combination of base color and retroreflective striping material, these garments are an effective means of risk reduction and are, therefore, required for day and night activities.

HIGH VISIBILITY APPAREL (CONT.)

Each item of hi-vis safety apparel must meet the requirements of ANSI/ISEA *American National Standard for High-Visibility Safety Apparel* (or equivalent revisions) and be labeled ANSI/ISEA 107-2015 (or equivalent revisions) standard performance for Class 2 or 3 risk exposure.

Hi-vis safety apparel meeting ANSI/ISEA 107-2015 Class 2 or 3 shall be worn by all employees working in traffic-control flagging operations, within the right-of-way limits, or in other areas where they are potentially exposed to the risk of moving vehicles, equipment, or roadway traffic.

Class 3 apparel shall be worn during nighttime operations.

The minimum hi-vis requirements set out above shall be met by wearing a shirt, vest, sweatshirt, coat, or parka meeting the ANSI standard. If multiple layers of clothing are worn, the outermost layer shall be a hi-vis garment that is unobstructed by other clothing and clearly visible from 360°. Shirts are preferred over vests as vests may present an additional hazard of entanglement in equipment if not sized appropriately or closed in front.

It is highly recommended that employees wear a hi-vis cap or other headgear for additional visibility if use of a hardhat is not required.

FLAME RETARDANT APPAREL

Specific PPE requirements apply to all persons exposed to potential electrical shock or arc flash hazards (**SHA-407-4**), and to all persons involved in cutting and welding operations (**SHA-905**).

GARMENT REPLACEMENT

Per ANSI 107-2015, Section 12.2(g), the label in a compliant garment must indicate the maximum number of washes for the garment. This indicates the end of the garment's life based on its wash durability, providing the end user with an approximate idea of how long the garment will last. This approximation does not take into consideration soil, abrasion, or other damage the shirt may come in contact with while being worn.

The United States Federal Highway Administration (FHWA) has issued a statement regarding the expected lifetime of high-visibility PPE garments, which is also quoted in Appendix F in ANSI 107-2015:

> *…The useful life of garments that are worn on a daily basis is approximately six months. Garments that are not worn on a daily basis are expected to have a useful service life of up to three years….*

GARMENT REPLACEMENT (CONT.)

Actual garment lifetimes can vary in the field depending on exposure and care conditions.

Per ANSI 107-2015, section 13.2:

> *High visibility garments should be repaired or replaced such as when they are torn, noticeably faded, soiled, cracked, burned, heavily abraded or damaged.*

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Hearing Protection

REFERENCES 29 CFR 1910.95, 29 CFR 1926.52, and 29 CFR 1926.101

PURPOSE & SCOPE Long-term exposure to loud noise will cause hearing loss; therefore, employees should take preventative measures to protect their hearing. All employees shall be included in the hearing conservation program which includes training on the hazards of noise exposure, requirements for wearing hearing protection, selection and proper use of hearing personal protective equipment (PPE), avoiding overexposure to loud noise when away from work, and annual audiometric testing.

RISK CONTROLS The best noise attenuator is distance if administrative and engineering controls are unable to lower noise to acceptable levels (**SHA-401** and **SHA-1803**). If distance is not possible, appropriate hearing protection shall be worn in accordance with Occupational Safety and Health Administration (OSHA) standards.

REQUIREMENT Hearing protection is required when operating chain saws, mowers, weed eaters, chippers, jack hammers, cut-off saws, battery chargers or other hand tools, and equipment where noise levels exceed 85 dba (decibels).

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Foot Protection

REFERENCES 29 CFR 1910.136; 29 CFR 1926.96; ASTM F2413-17

PURPOSE & SCOPE Protective footwear is required for maintenance, equipment, traffic, and construction personnel as they are regularly exposed to one or more hazards as a part of their routine field tasks.

REQUIREMENTS All employees engaged in field activities shall, at a minimum, wear leather-upper work shoes.

When working in areas or performing tasks where there is a danger of foot injury due to falling or rolling objects, objects piercing the sole, or exposure to electrical hazards, employees shall utilize protective footwear that complies with ASTM F2413 (formerly Z41) requirements.

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Rubber Aprons & Boots

PURPOSE & SCOPE

Rubber aprons and boots shall be made available for the protection of employees who are or may be exposed to chemicals including, but not limited to, solvents and acids.

REQUIREMENTS

Rubber boots shall be worn as required by the safety data sheet when employees are mixing and applying pesticides.

Rubber aprons shall be worn as required by the safety data sheet when employees are exposed to corrosive chemicals.

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Subject

Snake-Proof Leggings

PURPOSE & SCOPE

Leggings or other personal protective equipment (PPE) intended for the prevention of snakebites will be made available to employees as needed.

ADMINISTRATIVE RESPONSIBILITIES

Supervisors are designated as the competent person responsible for worker safety within the activity area of any job site and are responsible for the assessment, selection, and use of appropriate safety apparel, including personal protective equipment (PPE).

REQUIREMENTS

Employees shall wear provided snake-proof leggings or other protective equipment for the prevention of snakebites if potential risk is identified within their work area.

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Fall Protection Devices

REFERENCES

SHA-408, *Fall Protection*

POLICY & SCOPE

All employees exposed to a potential fall, either to the ground or a lower level of 4 feet or more, shall be protected by:

- Occupational Safety and Health Administration (OSHA)-standard guardrails, safety nets, or personal fall-arrest systems
- Harnesses, lanyards, and similar devices meeting American National Standards Institute (ANSI) criteria and testing
- Lanyards equipped with shock absorbers when being utilized as part of a fall-arrest system

TRAINING

All employees who might be exposed to fall hazards shall receive training on fall protection devices, and refresher training, as required. This training shall be conducted by qualified personnel.

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Welding, Cutting, & Brazing

REFERENCES

29 CFR 1926 and 29 CFR 1910

PURPOSE & SCOPE

All employees exposed to hazards created by welding, cutting, and brazing shall be provided with appropriate welding attire (such as, tinted welding helmets, welding gloves, smocks, aprons, tinted screens) to ensure protection for face, eyes, hands, and torso.

REQUIREMENTS

Employees shall wear personal protective equipment (PPE) as required to alleviate risks involved in welding, cutting, and brazing.

While welding, cutting, and brazing, employees should ensure adequate ventilation including, but not limited to, the following methods:

- Employees should position themselves in such a way as to avoid breathing fumes or gases.
- General ventilation by natural or forced movement of air can reduce exposure and is encouraged.
- Use of a HEPA filtration weld fume extractor should be considered.

If a job hazard analysis determines respiratory protection is needed, refer to **SHA-406-1**.

Caution: When welding or cutting metals such as stainless steel, cadmium, or lead coated steel, adequate ventilation is required. Toxic fumes from sources such as these shall not exceed Occupational Safety and Health Administration (OSHA) permissible exposure limits (29 CFR 1926, Subpart D).

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Skin Protection

PURPOSE & SCOPE

The purpose of this policy is to remind employees of the risks associated with frequent and prolonged exposure of unprotected skin to ultraviolet (UV) radiation, and ways to minimize such risks.

RISK CONTROLS

Over-exposure to UV radiation increases an individual's risk of sunburn and skin cancer. The main source of UV radiation is sunlight; therefore, employees working outdoors during daylight hours are to wear protective sunscreen. Long sleeve shirts may also offer protection.

Additional suggestions for protection against sun exposure are available from the National Institute for Occupational Safety and Health (NIOSH).

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Subject	Chainsaw / Pole Saw

REFERENCES

American National Standards Institute (ANSI)
American Society for Testing and Materials (ASTM)

PURPOSE & SCOPE

The purpose of this policy is to establish personal protective equipment (PPE) requirements and safe operational processes for employees involved in chainsaw and pole saw operations.

REQUIRED PPE

Employees shall use the following PPE during chainsaw and pole saw operations:

- Forestry helmet with integrated face shield and ear protection
  - Forestry helmet meeting ANSI Z89.1:2009 Type 1 Class G
  - Face shield with mesh for secondary eye protection
  - Ear muffs meeting ANSI S3.19 and having a Noise Reduction Rating (NRR) of 25 or greater.
- Gloves – all leather or leather palm
- Safety glasses as primary eye protection meeting ANSI Z-87.1
- Chaps meeting ASTM 1897 and labeled as Underwriter Laboratories (UL) tested
  - New chaps purchased shall be of 9-ply wrap-style.
  - Chaps must cover the users front lower body and legs from the waist to below the top of the boot without any gap.
  - All straps and buckles shall be fastened and all excess strapping secured to reduce entanglement hazard.
- Steel, closed-toe boots meeting ASTM F2413

OPERATIONS

Chainsaws and pole saws shall be operated only by trained, authorized employees. Chainsaw and pole saw operators shall:

- Have completed KYTC Basic Chainsaw Operation Safety training and display operational knowledge before use.

OPERATIONS (CONT.)

- Protective chaps shall be worn by chainsaw and pole saw operators at all times, including while on the ground and when engaged in limbing operations from a bucket truck.
- Protective chaps with minimum 9-ply wrap-style construction are required for operators of battery-electric chainsaws, and recommended for operators of gasoline chainsaws and all pole saws. Protective chaps of 6-ply apron-style construction is the minimum protection required for operators of gasoline chainsaws and any pole saw.
- Be aware of the surroundings. Make sure no one is closer than 3-5 yards to chainsaw operations.

  Caution: During tree felling operations, a greater safety distance than 3-5 yards is required.
- Utilize firm footing at all times, bracing the body by standing with feet apart.
- Never start a saw while standing in a tree, on a ladder, or in any other unstable position.
- Keep a steady grip on both handles on the saw. Thumbs and fingers must be completely wrapped around the handles. It is very important to hold the thumb of the left hand under the front handle in order to reduce the force of a possible kickback (an upward jump or jerk of the saw).
- Remain alert to the possibility of kickback during use. Kickback can occur during most work procedures if the saw is not handled carefully. This is why it is essential for operators to learn and consistently use correct saw technique.
- Stop the chain from rotating when moving to another spot by activating the chain brake or by turning off the engine.

  Fit the guide bar guard when moving more than a few steps or when transporting.
- Always use a chainsaw with a working chain brake.
- Shut off chainsaws and pole saws before making any adjustments.
- Never leave unattended chainsaws and pole saws running.
- Never smoke while operating chainsaws and pole saws.

MAINTENANCE

Chainsaw and pole saw operators shall:

- Follow all manufacturer use and maintenance guidelines.
- Keep the saw in good condition, including the following:
  - Easy to start
  - Chain sharp and tight
  - Oil tank full
- Remove chainsaws from operation if the constant pressure switch, when released, allows the saw to continue to operate.
- Operators shall report all equipment malfunctions to the immediate supervisor (**SHA-411**).

STORAGE & TRANSPORTING

When storing or transporting chainsaws and pole saws, employees shall:

- Follow all manufacturer storage guidelines.
- Store saws properly, taking care to set on a level surface with the gas cap up.
- Keep chainsaw and pole saw blades covered with a loose-fitting sleeve.
- Store fuel (gas mixture) in labeled, approved safety cans.
- Never transport a saw in the passenger space of a vehicle.

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REFERENCES

29 CFR 1910.38 and 29 CFR 1926.35

PURPOSE & SCOPE

Pursuant to 29 CFR 1910.38, each Kentucky Transportation Cabinet (KYTC) facility shall have a written emergency action plan that is readily available for each employee's review in order to educate, prepare, and serve as a reference to employees should an emergency situation arise.

ADMINISTRATIVE RESPONSIBILITIES

The person in charge of each KYTC facility shall:

- Designate an employee to oversee the implementation of the emergency action plan.
- Advise employees of the contact person available to provide information about the plan and explain duties under the plan.
- Designate an employee to train other employees on the content of the emergency action plan and to assist in the safe and orderly evacuation of employees in the event of an emergency.
- Ensure the facility is equipped with an alarm or notification system in place to notify employees of an emergency or evacuation. These systems shall be tested at least annually as overseen by safety personnel.

REQUIRED PLAN ELEMENTS

At a minimum, each facility's emergency action plan shall include procedures for:

- Reporting a fire or other emergency
- Posting emergency phone numbers
- Emergency evacuation by type (fire, severe weather shelter, bomb threats) and emergency routes
- Accounting for all employees upon evacuation
- Armed intruder

REQUIRED PLAN ELEMENTS (CONT.)

- Training for employees who volunteer to be available to render first aid during an emergency
- Employees who remain in a building following evacuation in order to maintain critical plant operations

Emergency action plans shall also include the following:

- Names and emergency contact information for employees who have been designated to address questions about the plan
- Assigned roles and responsibilities of individual employees designated to assist with implementation of the plan

PLAN REVIEW

The emergency action plan shall be reviewed and evaluated annually by each facility's safety personnel. All applicable employees shall be notified of plan updates, as well as changes to employee duties or responsibilities.

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Designated Emergency Personnel

PURPOSE & SCOPE

The purpose of this policy is to define the roles and responsibilities of designated employees who shall help building inhabitants safely evacuate if required to do so during an emergency.

For building-specific information such as names and contact numbers of those assigned to assist with evacuations, as well as evacuation routes, employees should refer to the emergency action plan for their specific building.

ADMINISTRATIVE RESPONSIBILITIES

Emergency action plans are to include emergency contact information of floor captains and monitors, exit monitors, rally captains, elevator operators (if applicable), and alternates.

The emergency action plan should also list building-specific roles and responsibilities of designated emergency personnel, as well as the responsibilities of supervisors, building maintenance personnel, safety coordinator, and crisis management team.

FLOOR CAPTAINS & ALTERNATES

During an emergency evacuation, floor captains and alternates (at a minimum) shall:

- Maintain an up-to-date list of personnel (name, telephone number, location) needing special assistance when evacuating the building.
- Remain calm and encourage others to remain calm.
- Urge employees to adhere to proper safety procedures.
- Direct persons with limited mobility to assigned elevators as needed (if applicable).
- Assist with clearing employees from the assigned area.

FLOOR CAPTAINS & ALTERNATES (CONT.)

- In the Transportation Cabinet Office Building (TCOB), employees should report to the central elevators and wait for all floor monitors to give a verbal that their area of the floor is clear.
- Report to the designated superior when the assigned area is clear.
- Proceed to the designated safe area.
- Refer all media questions to the KYTC Office of Public Affairs at 502-564-3419 or the district public information officer, as appropriate.

FLOOR MONITORS & ALTERNATES

During an emergency evacuation, floor monitors and alternates (at a minimum) shall:

- Remain calm and encourage others to remain calm.
- Urge employees to adhere to proper safety procedures.
- Assist persons with limited mobility to assigned elevators as needed (if applicable).
- Check assigned work areas.
- Check restrooms and other enclosed areas.
- Report to the floor captain that your area is all clear.
- Proceed to the designated safe area .
- Refer all media questions to the KYTC Office of Public Affairs at 502-564-3419 or the district public information officer, as appropriate.

EXIT MONITORS & ALTERNATES

During an emergency evacuation, exit monitors and alternates (at a minimum) shall:

- Remain calm and encourage others to remain calm.
- Urge employees to adhere to proper safety procedures.
- Report to assigned exit to provide assistance.
- Assist co-workers with exiting down the stairs in a calm and orderly manner.
- Remain at assigned elevators and assist persons with limited mobility with exiting the building (If applicable).
- Provide status of assigned exits to the floor captain.
- Proceed to the designated safe area.
- Refer all media questions to the KYTC Office of Public Affairs at 502-564-3419 or the district public information officer, as appropriate.

RALLY CAPTAINS & ALTERNATES

During an emergency evacuation, rally captains and alternates (at a minimum) shall:

- Remain calm and encourage others to remain calm.
- Urge employees to adhere to proper safety procedures.
- Proceed to the designated rally point.
- Direct co-workers to the safe rally point.
- Refer all media questions to the KYTC Office of Public Affairs at 502-564-3419 or the district public information officer, as appropriate.

ELEVATOR OPERATORS & ALTERNATES

During an emergency evacuation in buildings equipped with elevators, elevator operators and alternates (at a minimum) shall:

- Remain calm and encourage others to remain calm.
- Urge employees to adhere to proper safety procedures.
- Report to assigned elevator.
- Obtain keys from lock box.
- Take the elevator car to the highest floor, then descend, stopping on each floor on the way down. Complete this process twice.
- Proceed to the designated safe area.
- Refer all media questions to the KYTC Office of Public Affairs at 502-564-3419 or the district public information officer, as appropriate.

SUPERVISOR RESPONSIBILITIES

During an emergency evacuation, supervisors (at a minimum) shall:

- Remain calm and urge staff to remain calm.
- Ensure that all personnel adhere to proper safety procedures.
- Instruct staff to report to designated safe areas.
- Ensure persons with limited mobility are provided assistance.
- Take the daily sign-in sheet (as available) to the rally point to account for all staff members, and report to the rally captain the name of any employee who is not at the designated safe area.
- Refer all media questions to the KYTC Office of Public Affairs at 502-564-3419 or the district public information officer, as appropriate.

MAINTENANCE & BUILDING PERSONNEL

During an emergency evacuation, the building superintendent and crew (at a minimum) shall:

- Follow the established emergency action plan.
- Inform employees of the situation and actions to be taken.
- Assist employees with limited mobility.
- Report any problems to the senior member of the crisis management team.

SAFETY PERSONNEL

During an emergency evacuation, safety personnel (at a minimum) shall:

- Report to the unified command/incident management post.
- Follow the established emergency action plan.
- Inform employees of the situation and actions to be taken.
- Communicate with the emergency action team to ensure safety of all occupants in the building.
- Track evacuation of all floors.
- Communicate regarding and respond to injuries or illnesses during the emergency.
- Serve as a member of the crisis management team.
- Provide updates and report issues to the other members of the crisis management team.

CRISIS MANAGEMENT TEAM

During an emergency evacuation, the designated crisis management team (comprised of the highest-ranking official in the building at the time, along with – at a minimum – the safety personnel) shall serve as the site Unified Command/Incident Management Team with the addition of local police, fire, emergency management services, and others as warranted. They shall meet at the command post to oversee, organize, and make executive decisions as needed, depending on the situation.

TCOB command staff includes:

1. Transportation Cabinet's highest-ranking official
2. Finance & Administration Cabinet's highest-ranking official
3. Building maintenance supervisor
4. Secretary's Office of Safety
5. Local police, fire, and emergency management services

Additional command staff may be added if warranted. Local district command staff may differ. Decisions will be made by the command staff and communicated to employees.

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Medical Emergency

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to medical emergencies.

PROCEDURES

If a medical emergency occurs:

1. Check the scene of the emergency to ensure the safety of everyone present, including responders, bystanders, and the victim/patient.

   Caution: Do not move the victim/patient unless life-threatening conditions exist.

2. Call 911. State the problem as specifically as possible and give the exact location of the person needing assistance. Stay on the telephone if requested.

3. Call for the first aid trained responder in the immediate area.

4. Contact the district safety coordinator or regional safety administrator to report the medical emergency.

5. Ask the employee or supervisor to complete a report of the incident using the reporting process detailed in **SHA-707**.

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Fire

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to fire emergencies, and should be included in each building-specific emergency action plan.

NOTIFICATION PROCEDURES

In case of fire:

1. Pull the nearest fire alarm if the building is equipped. Otherwise, verbally alert all personnel in the immediate area to the presence of fire and the need for evacuation.
2. Upon activation of the fire alarm or after verbally alerting personnel, call 911. Answer all questions and give as much detail as possible. Remain on the phone if requested.
3. If the situation is not life-threatening, employees alerted to a building fire should lock computer workstations and close all doors prior to evacuating.
4. If a life-threatening situation is present, employees shall evacuate the building immediately.

BUILDING EVACUATION PROCEDURES

Employees should familiarize themselves with the emergency evacuation procedures specific to their building. The general procedures for evacuating any building during a fire shall be as follows:

1. Exit by the nearest safe stairwell or door. Elevators shall be reserved for employees with limited mobility and emergency personnel only.

   Note: If smoke or fire prevents the use of the nearest stairwell or exit door, move to the next closest safe stairwell or exit door to evacuate the building and continue to the designated safe area.

2. Enter stairwells or proceed directly toward an outside exit, moving along the outside wall. If in a stairwell, gradually merge to the inside while descending to allow persons at the next level down to enter.

BUILDING EVACUATION PROCEDURES (CONT.)

3. Do not ascend the stairwell or enter any other area of the building.

   Note: In multi-floor buildings, persons with limited mobility are to report to elevators. If elevators are not functioning, evacuation chairs are available for employees who need assistance. Persons with limited mobility are to exit the building and report to the designated safe areas.

4. Once evacuated, employees are to gather at the designated safe area (or "rally point") and remain there until given the **ALL CLEAR** announcement from the fire department, emergency scene commander, or the incident management team.

   Note: Designated safe areas/rally points shall be located a minimum of 300 feet away from the building. Employees shall maintain this distance until advised otherwise by emergency personnel.

5. Employees shall be accounted for as present or missing, and reported according to the process established in **SHA-602**.

6. Evacuees shall not sit in vehicles in parking garages or lots.

7. Remain calm and orderly in the safe areas. Do not leave safe areas until authorized.

8. Be alert for emergency vehicles.

9. Report any injuries or illnesses to safety personnel.

ADDITIONAL INFORMATION

For information regarding fire extinguishers, see **SHA-206-4.**

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Severe Weather

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to severe weather emergencies, and should be included in each building-specific emergency action plan.

DEFINITIONS

- *Tornado watch* – Indicates that conditions are favorable for a tornado to develop. Upon issuance of a tornado watch, employees should be alert for changes in the weather, and be prepared to take shelter quickly.
- *Tornado warning* – Indicates a tornado has been sighted or doppler radar indicated, and employees should immediately seek shelter.

SHELTERING PROCEDURES

Employees should familiarize themselves with the severe weather sheltering procedures specific to their building. If the tornado warning alarm is activated, remain calm and follow these general directions:

- Report to the building's severe weather shelter area.
- Assist others as needed.
- Stay away from windows as much as possible.
- In multi-level buildings, elevators shall be reserved for employees with limited mobility and emergency personnel only.
- If unable to reach the severe weather shelter areas, seek shelter under sturdy furniture and grasp it securely. If that is not an option, lie in the lowest area available. Clasp both hands behind the back of the head to reduce the risk of neck injury.
- Use telephones for emergency calls only.
- Do not leave the severe weather shelter area until the **ALL CLEAR** announcement is given.

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Earthquake

Caution: Regardless of location, do not use candles, matches, lighters, or other open flames during or after an earthquake due to the possible presence of flammable vapors.

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to earthquakes, and should be included in each building-specific emergency action plan.

PROCEDURES

In case of an earthquake employees should follow these procedures:

- Keep calm. Do not run or panic.
- Indoors:
  - Drop, cover, and hold on. Drop to the floor; take cover under a sturdy desk or table, and hold on to it firmly. Be prepared to move with it until the shaking stops.
  - If you are not near a desk or table, drop to the floor against the interior wall and protect your head and neck with your arms.
  - Avoid exterior walls, windows, hanging objects, mirrors, tall furniture, large appliances, and kitchen cabinets with heavy objects or glass.
  - DO NOT attempt to use elevators or go outside.
  - Be aware that building sprinkler systems or fire alarms may activate during an earthquake.
- Outdoors:
  - Move to a clear area, if safe to do so.
  - Avoid power lines, trees, signs, buildings, vehicles, and other hazards.

PROCEDURES (CONT.)

- While driving:
  - Pull over to the side of the road, stop, and set the parking brake.
  - Avoid overpasses, bridges, power lines, signs and other hazards.
  - Stay inside the vehicle until the shaking is over.
  - If a power line falls on the car, stay inside until a trained person removes the wire.
- Do not enter earthquake-damaged buildings.
- Use phones for emergency calls only.

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Subject

Bomb Threat

Caution: Do not use radios and other electronic devices, including cellular telephones, during a bomb threat. Use of these devices could cause detonation. Landline telephone coordination (calling 911) is best.

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to bomb threats. Evacuation plans should be included in each building-specific emergency action plan.

PROCEDURES

Upon receipt of a bomb threat by telephone:

- Do not panic.
- Try to obtain the maximum information from the caller, and keep the caller on the line as long as possible.
- Keep bomb threat procedures and checklist by the telephone at all times, and refer to it as you speak to the caller (**Exhibit 9022**).

Upon discovery of an unidentified suspicious object:

1. Do not touch or move the object, nor allow anyone else to touch or move it.
2. Immediately notify management personnel, who in turn shall notify security if available.
3. If no management personnel are immediately available, notify security if available.
4. If an evacuation is ordered, exit by the nearest stairwell or door. Elevators shall be reserved for employees with limited mobility and emergency personnel only.

   Employees should familiarize themselves with the evacuation procedures specific to their building.

PROCEDURES (CONT.)

Note: In the Transportation Cabinet Office Building (TCOB), persons with limited mobility shall report to the central elevator on each floor. If elevators are not functioning, evacuation chairs may be used to evacuate employees with limited mobility.

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Chapter

EMERGENCY ACTION PLANS

Subject

Suspicious Mail

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to the receipt or discovery of suspicious mail, and should be included in each building-specific emergency action plan.

DEFINITION

Suspicious Mail – Mail may be considered "suspicious" when it deviates in any way from the expected norm. Suspicious mail often displays the following characteristics:

- Type of mail: foreign, priority, special delivery
- Restrictive endorsements: confidential, personal, to be opened by addressee only
- Visual distractions: labeled personal, fragile, rush, handle with care; no return address; misspelled words
- Excessive postage: Usually multiple postage stamps

Figure 10. Suspicious Mail Example

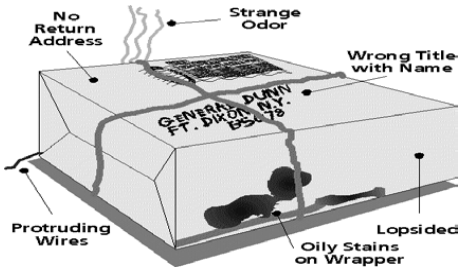
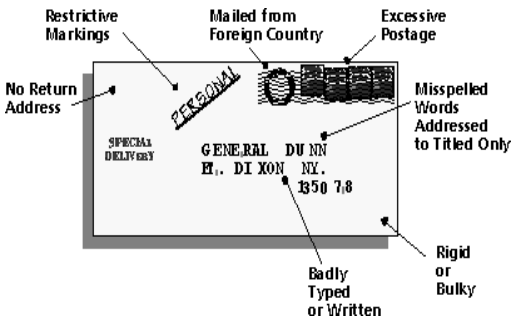


Figure 11. Excessive Postage Example



ADMINISTRATIVE RESPONSIBILITY

As soon as possible after the receipt of suspicious mail, management personnel shall notify the KYTC Office of Public Affairs at 502-564-3419. *All public inquiries (such as press, radio, TV) shall be referred to the KYTC Office of Public Affairs.*

PROCEDURES FOR SUSPICIOUS MAIL

Employees should follow these procedures upon receipt or discovery of a suspicious looking letter or package:

1. Do not touch it or allow anyone else to touch it.
2. If already holding a delivery deemed suspicious, handle it very gently. Do not turn it over or unbalance it. Carefully set it on a flat surface as soon as possible.
3. Do not move a suspicious package to another location, carry it outside, or place it in water.
4. Evacuate the room and surrounding areas.
5. If possible, keep others from entering the area.
6. Notify management personnel.
7. If management personnel are not readily available, immediately call 911.

PROCEDURES FOR MAIL SUSPECTED OF ANTHRAX OR OTHER BIOLOGICAL AGENTS

Employees should follow these procedures upon receipt of an unopened letter or package believed to contain anthrax or other biological agent:

1. Do not panic.

   Note: Anthrax organisms must be rubbed into broken skin, swallowed, or inhaled as a fine, aerosolized mist to cause infection. It cannot be aerosolized out of an envelope or package containing powder. The same facts and conditions are generally true for other bacteria likely to be considered biological weapons.

2. Place the unopened envelope or package in a plastic bag or clear envelope, and seal it with tape.
3. Wash hands with soap and water.
4. Notify management personnel.
5. If management personnel are not readily available, immediately call 911.

PROCEDURES FOR MAIL SUSPECTED OF ANTHRAX OR OTHER BIOLOGICAL AGENTS (CONT.)

Employees who open an envelope or package containing suspicious powder are advised to take the following steps:

1. Wash hands with soap and water.
2. Notify management personnel.
3. If management personnel are not readily available, immediately call 911.

4. If clothing is heavily contaminated, do not brush it off. Remove the clothing when possible, and place it in a plastic bag.
5. Shower with soap and water as soon as possible. Do not use bleach or detergent.
6. Put on fresh clothing; do not touch or wear any clothing exposed to the powder.
7. Make a list of all people who had actual contact with the powder, and give the list to management personnel and public health authorities.

   Note: It is vital to include everyone who had contact with the powder so they may be alerted to watch for fever or other symptoms over the next several days.

Employees who receive a letter or package marked with a threatening message, such as "ANTHRAX," are advised to take the following steps:

1. Do not open the package.
2. Leave it, and evacuate the room.
3. Keep others from entering.
4. Notify management personnel.
5. If management personnel are not readily available, immediately call 911.

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Subject

Hazardous Materials Spill

Caution: Employees who are not trained or properly equipped shall not be expected to become involved with a hazardous materials, including chemical spills and leaks, until the material is identified and the hazards and safety precautions are understood.

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to hazardous materials spills and leaks, and should be included in each building-specific emergency action plan.

OUTSIDE THE BUILDING

If a hazardous materials spill occurs outside the building, employees should take the following steps:

1. Follow directions from the local emergency management system.
2. Secure all windows and doors exposed to the outdoors.
3. Seal gaps at the bottom of doorways.
4. Move to the center of the building; in multi-level buildings, it is not necessary or advised to change floors.
5. Assist others as needed.
6. Supervisors shall use sign-in sheets to account for all employees in their work areas if paper time records are in use.
7. Do not leave the building until given the **ALL CLEAR** announcement.

INSIDE THE BUILDING

Hazardous material incidents, to include chemical spills and leaks, must be reported to management and 911**.** If a hazardous materials spill occurs inside the building, employees should take the following steps:

1. Move away from the spill area immediately, and alert others to the hazardous condition.
2. Notify management personnel.
3. If management personnel are not readily available, immediately call 911.

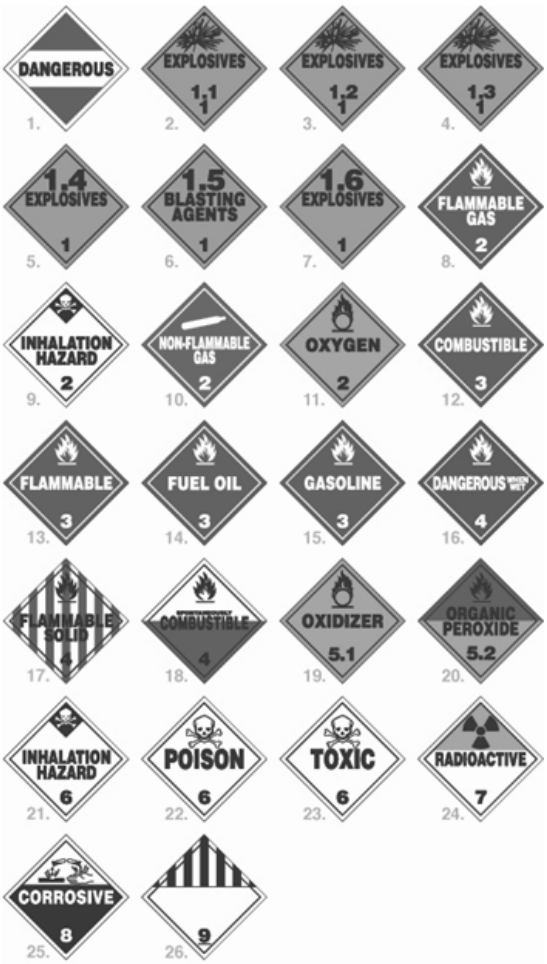
   Note: If the chemical identity is known, the safety data sheet shall be made available to emergency personnel.

INSIDE THE BUILDING (CONT.)

4. Wait for instructions from management or emergency personnel.
   a. If you are instructed to evacuate, follow the established procedures. Once at your assembly area await further instructions.
   b. If you are instructed to shelter-in-place, remain indoors and wait for further instructions.

5. If exposed to a chemical spill resulting in inhalation or skin contact, seek medical attention immediately and follow injury reporting procedures (**SHA-707**).

Figure 12. Hazardous Materials Symbols



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Chapter	EMERGENCY ACTION PLANS
Subject	Aircraft Emergency

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to an aircraft emergency, and should be included in each building-specific emergency action plan.

PROCEDURES

If an aircraft crashes in or adjacent to any Kentucky Transportation Cabinet building, employees should take the following steps:

1. Consult and follow the local emergency action plan for such emergencies.
2. Call 911.
3. Follow directions from emergency management personnel.

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Chapter

EMERGENCY ACTION PLANS

Subject

CODE ADAM Alert

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to **CODE ADAM** alerts, and should be included in each building-specific emergency action plan.

PROCEDURES

Pursuant to KRS 199.015, the **CODE ADAM** safety protocol is hereby established and shall be implemented by all administrators in state buildings in the following manner:

- When a parent, tutor, or guardian notifies any employee of a state building that his or her child is lost or missing, the employee shall obtain from the parent, tutor, or guardian a detailed description of the minor including, but not limited to, the name, age, eye color, height, weight, clothing, and shoes the child was wearing before becoming lost or missing.

- From the closest telephone available, the same employee shall alert the state building administrator or the person designated in the state building's **CODE ADAM** plan, who shall then notify the occupants of the state building through the loudspeaker system or any other fast and effective means of communication that **CODE ADAM** has been activated.

- The employee shall escort the parent, tutor, or guardian to the main door of the state building to help in identifying the child.

- Persons designated by the administrator shall monitor all state building exits to ascertain that the minor does not leave the state building without the parent, tutor, or guardian. In addition, two or more employees, as necessary, shall be assigned to search the parking areas of the state building. This process shall not entail the closing or locking of any door of the state building.

- Any child, or person with a child, leaving the state building shall be asked to go through the main exit previously designated by the administrator.

PROCEDURES (CONT.)

The child or person with the child shall be allowed to leave only after it has been determined that the minor who is leaving is not the child being searched for and that the person with the minor is the parent, tutor, or guardian of the child, and the person presents a government-issued photo identification.

- After **CODE ADAM** has been announced through the state building's loudspeaker system or any other fast and effective means of communication, the employees shall search the entire building. At least two employees shall be assigned to each floor to certify that the minor is not present. Employees who are directly serving a member of the public at that time and employees who have been previously excluded by the administrator shall not be compelled to participate in the search.

- If the minor is found unharmed and appears to have been simply lost or missing in the state building, the child shall be immediately taken to the parent, tutor, or guardian.

- If the minor is found in the company of any person other than the child's parent, tutor, or guardian, reasonable means shall be taken to delay the exit of the child and the person from the state building until:
  - A peace officer arrives.
  - The child and the person with whom the child is found both are properly identified.
  - The circumstances of the situation are determined.

- If the minor is not found within a ten-minute period, the state building administrator shall notify a state or local law enforcement agency that a child is lost or missing and provide the information then known about the lost or missing child. The law enforcement agency shall respond to the scene and shall take control of the incident. The law enforcement agency may request that the local search and rescue coordinator provide additional resources to search for the lost or missing child. The law enforcement agency and the local dispatch center shall take the actions required by KRS 17.450, 17.460, and 39F.180.

- Upon the location of the lost or missing child or the arrival of a peace officer from the law enforcement agency which was notified of the lost or missing child, whichever occurs first, the state building administrator shall cause an announcement of the ending of the **CODE ADAM** by the state building loudspeaker or other fast and effective means of communication.

PROCEDURES (CONT.)

- Upon the ending of the **CODE ADAM**, the state building administrator shall prepare three copies of a report of the incident, which shall be:
  - Sent within three working days to the Secretary of the Finance and Administration Cabinet and the Commissioner of the Department of Kentucky State Police
  - Kept in the administrative files of the state building for a period of three years from the date of the incident

IMPLEMENTATION RESPONSIBILITY

The Secretary of the Finance and Administration Cabinet, in consultation with the Justice and Public Safety Cabinet through the Department of Kentucky State Police, shall:

- Be responsible for coordinating implementation of the **CODE ADAM** program throughout the Commonwealth.
- Provide training to administrators of state buildings and employees designated by those administrators in the implementation of the **"CODE ADAM"** program.
- Provide training in procedures for the search of state buildings and grounds for lost and missing children.
- Print and distribute signs to each public agency for use in each state building relating to the **CODE ADAM** program and how to initiate a **CODE ADAM**. The signs shall be not less than twelve inches square and have white letters and a purple background containing the information specified by the cabinet by administrative regulation.
- Conduct a **CODE ADAM** drill annually at each facility covered by the provisions of KRS 199.013 to 199.019.
- Provide for the collection of statistics from each facility covered by the provisions of KRS 199.013 to 199.019 on each **CODE ADAM** within the state building.

EXEMPTION

The Secretary of the Finance and Administration Cabinet, in consultation with the Justice and Public Safety Cabinet through the Department of Kentucky State Police, may exempt any agency or state building which, due to the nature of the services provided by that agency or state building, is not visited by children.

EXPIRATION OF EXEMPTION

The agency or state building shall immediately report to the Secretary of the Finance and Administration Cabinet when the agency or state building is likely to be visited by children on a frequent or continuing basis. Upon receipt of the notification from the state building administrator or agency that the state building is being visited by children, the exemption from compliance with the provisions of KRS 199.013 to 199.019 shall expire.

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Chapter

EMERGENCY ACTION PLANS

Subject

Golden Alert

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to Golden Alerts, and should be included in each building-specific emergency action plan.

DEFINITION

- *Golden Alert* – Provides a means to begin an immediate search for a missing, lost, or overdue impaired adult.

- *Impaired adult* – A person age 18 years of age or older who has a verified mental or cognitive impairment and whose disappearance poses a credible threat to the health and safety of the person, as determined by a local law enforcement agency [KRS 39F.010(3)(a), KRS 39F.010(3)(b), KRS 39F.180].

PROCEDURE

Upon notification to any KYTC employee of a missing impaired adult at any KYTC facility, the employee shall notify the facility manager and immediately call 911.

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EMERGENCY ACTION PLANS

Subject

Armed Intruder

PURPOSE & SCOPE

The purpose of this policy is to standardize the Kentucky Transportation Cabinet (KYTC) employee response to an armed intruder, and should be included in each building-specific emergency action plan.

PROCEDURE

In the event of an armed intruder, call 911 and alert others around you, if possible.

The Kentucky Transportation Cabinet (KYTC) then recommends that employees utilize a *Run, Hide, Fight* response in reaction to any armed intruder event.

- *Run*
  - Leave the building as quickly as possible.
  - Leave your belongings behind.
  - Make certain the exit is safe before passing through it.
  - Help those around you, although it may be necessary to leave them in order to ensure your own safety.
  - If members of law enforcement are encountered while evacuating, keep hands up, visible, open, and free of any foreign objects. Follow police instructions.
  - Get as far away as possible from the building and await further instructions.

- *Hide*
  - If evacuating the building is not possible, find a room in which to hide. Block the door with heavy objects or jam the door.
  - Search out a hiding spot where you are out of view, such as under or behind furniture. If possible, make certain that the hiding spot does not restrict your movement or trap you.
  - Set your cell phone to silent mode.
  - Remain quiet.

PROCEDURE(CONT.)

- *Fight*
  - As a last resort, and as a personal defense, use aggressive force against the armed intruder.
  - Use any available resources to defend yourself from the intruder's attack.
  - Look for items that can be used as weapons (such as fire extinguishers, chairs, hot liquids) and use them to defend yourself, if necessary.

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Chapter

EMERGENCY ACTION PLANS

Subject

Workplace Violence

Caution: If the threat of imminent harm exists, call 911 immediately.

REFERENCES

See **GAP-802**, *Workplace Violence*, which includes Kentucky Transportation Cabinet (KYTC) workplace violence policy definitions, prohibited conduct, and complaint/incident reporting procedures.

PURPOSE & SCOPE

The Commonwealth of Kentucky does not tolerate any actions by state government employees, contractors, vendors, clients, employees' spouses, or other visitors that threaten its employees. Any such action will be dealt with immediately by employees and supervisors in accordance with **GAP-802**. The purpose of this policy is to emphasize KYTC's policy on workplace violence, and its necessary inclusion in each building-specific emergency action plan.

RESPONSIBILITIES

Supervisors and other employees should make themselves familiar with **GAP-802**, as violation of this policy shall result in appropriate disciplinary action, up to and including dismissal.

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ADMINISTRATION GUIDE

Chapter	INCIDENT RESPONSE, REPORTING, & REVIEW
Subject	Overview

DEFINITIONS

- *Incident* – An event or occurrence of any type that directly results in injury or illness to any person, or damage to any property.
- *Near-miss or close-call* – An incident that did not result in injury, illness, or property damage, but had the potential to do so.

PURPOSE & SCOPE

The Kentucky Transportation Cabinet (KYTC) Secretary's Office of Safety has created and maintains programs and processes for effectively managing incidents involving KYTC employees, with the highest priority assigned to those involving work-related injury or illness.

PROGRAM OBJECTIVES

The objectives of the KYTC incident response, reporting, and review program are as follows:

- Ensure appropriate medical care for ill or injured employees (**SHA-702**, **SHA-703**, **SHA-704**).
- Efficiently report incidents involving employee work-related injury or illness, damage to state or private property, or injury to contractor employees at KYTC facilities and job sites (**SHA-707**, **SHA-708**).
- Provide incident information to the KYTC Workers Compensation third-party administrator (TPA) to support employee care (**SHA-706**).
- Facilitate efficient resolution or repair of damage to state and private property.
- Support effective incident safety reviews to facilitate learning from incidents, near misses, and close calls, and implement actions to prevent future incidents.
- Ensure recordkeeping in compliance with federal and state Occupational Safety and Health Administration (OSHA) statutes.

REPORTING REQUIREMENTS

All incidents involving injury, illness, and property damage must be reported (**GAP-303**, **SHA-707**, **SHA-708**). In the case of a near miss or close call, employees are highly encouraged to complete a *Safety Opportunity Report* (**SHA-410**).

The Secretary's Office of Safety is committed to making KYTC a "learning organization" that learns from incidents and takes action to avoid recurrence of similar incidents (**SHA-709**).

Therefore, employees shall not be discouraged or hindered from, nor face any scorn or retribution from, the prompt, complete, and transparent reporting of the facts of any incident, near miss, or close call.

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Chapter

INCIDENT RESPONSE, REPORTING, & REVIEW

Subject

Medical & First Aid

REFERENCES

29 CFR 1910(K), 29 CFR 1926(C) and (D), 803 KAR 2:310

DEFINITION

First aid – Medical attention usually administered on location immediately after an injury has occurred. It often consists of one-time, short-term treatment and requires little technology or training to administer.

Examples of first aid include, but are not limited to, the following:

- Cleaning minor cuts, scrapes, or scratches
- Treating a minor burn
- Applying bandages and dressings
- Providing non-prescription medicine
- Draining blisters
- Removing debris from the eyes
- Massaging cramped muscles
- Encouraging fluid intake to relieve heat stress

PURPOSE & SCOPE

The Secretary's Office of Safety (SOS) is dedicated to the protection of its employees from on-the-job injuries and illnesses. All occupational health concerns receive the highest priority. Therefore, it is essential that personnel respond quickly and effectively to injuries requiring first-aid, as well as all other occupational health problems. The health and wellness of each employee is integral to the overall safety environment.

ADMINISTRATIVE RESPONSIBILITY

The SOS is responsible for establishing and implementing KYTC's medical and first aid program. Personnel participating in the program should contact SOS, or their designated safety personnel, if further information is needed.

INJURY REPORTING REQUIREMENT

Every work-related personal injury or illness shall be reported to the supervisor as soon as possible, if not immediately.

Refer to **GAP-303-1** for reporting procedures, timelines, and responsibilities.

INJURY REPORTING REQUIREMENT (CONT.)

Note: Due to the presence of confidential information, reporting should be through the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system. All forms shall be hand-delivered or emailed using encryption technology.

FIRST AID KITS

In the absence of an infirmary, clinic, or hospital in proximity to the workplace, a fully stocked first-aid kit and a person adequately trained to render first aid shall be present at every jobsite for the duration of the job (29 CFR 1910.151, 1926.50).

Safety personnel and supervisors shall:

- Ensure that first aid kits are readily available and shall, at a minimum, include contents as described in American National Standard (ANSI) Z308.1-1998, *Minimum Requirements for Workplace First-aid Kits*. The contents of the kit listed in the ANSI standard should be adequate for small worksites.

- Assess the following when larger operations or multiple operations are being conducted at the same location:
  - Number of first-aid kits at the worksite
  - Specific types of first-aid equipment and supplies
  - Necessary quantities of supplies

- Periodically reassess the specific first aid needs of their worksite and augment the first-aid kit appropriately.

  Note: Refill supplies and replacement first-aid and bloodborne pathogen kits may be requisitioned at equipment garages.

- Maintain an up-to-date inventory, replacing used or outdated items as necessary.

- Provide suitable facilities for immediate emergency drenching or flushing of the eyes and body within areas where the eyes or body of any person may be exposed to injurious corrosive materials.

- Provide personal protective equipment (PPE) in compliance with 29 CFR 1910.1030 (d)(3), and 29 CFR 1926.50, Appendix A (including gloves, gowns, face shields, masks, and eye protection) if it is reasonably anticipated that employees will be exposed to blood or other potentially infectious materials while using first-aid supplies.

TRAINING

To qualify to render first aid, employees shall complete a training program in accordance with the American Red Cross training guidelines and policies as provided by a certified American Red Cross instructor. SOS or district safety personnel shall make this training available to all KYTC employees.

Trained employees shall be retrained in accordance with established agency and American Red Cross timelines to keep their knowledge and skills current. Timelines may be found online at:

https://www.redcross.org/take-a-class/learn-about-our-programs

RESPONDER LIABILITY

The Commonwealth of Kentucky has a Good Samaritan statute in place to protect citizens who aid in emergency situations. KRS 311.668 provides that when citizens respond to an emergency and act as an ordinary, reasonably prudent person, they shall be immune from civil liability for any personal injury as a result of the care or treatment they render.

BASIC WORKPLACE INCIDENTS & FIRST AID

The following sections describe the signals for and treatment of basic injuries and illnesses that could occur in the workplace and are provided as refresher information to trained personnel and awareness information to other employees. This is not a comprehensive list of all workplace injuries and illnesses or first aid treatments.

Every work location shall have persons adequately trained to render first aid, as well as trained in KYTC's bloodborne pathogens exposure control plan. Facilities shall conspicuously post the names of those persons trained and maintain documentation of their training records. Information regarding the bloodborne pathogens exposure control plan may be obtained from SOS. (See also **SHA-703**.)

Caution: When multiple persons are simultaneously in need of first aid, life-threatening conditions must be treated first. Additionally, any severely injured person may develop shock; therefore, treatment must start immediately without waiting for symptoms of shock to develop.

- **General First Aid**

  Follow these general instructions when responding to an injured person:

  - Quickly assess the safety of the scene. Do not move the victim unless the scene becomes unsafe.
  - Call 911.
  - Obtain consent for treatment.

  Note: If the victim is unconscious, consent is implied.

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

- Evaluate the victim and situation according to SAMPLE.
  S = Signs and symptoms
  A = Allergies
  M = Medications
  P = Past medical history
  L = Last oral intake
  E = Events leading up to the illness or injury

- Check the victim for bleeding, skin color changes, medical ID necklaces or bracelets, and observable signals of pain.

- Begin appropriate treatment.

➢ **External Bleeding**

Follow these steps when attempting to control bleeding:

- Place a sterile dressing over the wound and apply pressure.
- Cover dressing with bandage.
- If possible, elevate the wound above heart level.
- Seek medical assistance by calling 911.
- If bleeding continues, apply additional dressings or bandages and continue applying direct pressure.
- Take steps to minimize shock.
- Tourniquets shall be used only as a last resort. For instance, tourniquets may be the only option in cases of delayed emergency medical services (EMS) care, when direct pressure does not stop the bleeding, or direct pressure cannot be applied. If used, the tourniquet should be applied and kept in place continuously until more advanced medical personnel take over or the person reaches a medical facility.
- For open wounds not located on an extremity, standard guidelines suggest use of a hemostatic dressing coated with a special agent to enhance clotting when correctly applied and combined with direct pressure.

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

➢ **Burns**

A burn is an injury that results from heat, electricity, chemicals, or radiation. A burn may vary in depth, size, and severity.

Classification:

- *First degree*—superficial burn; skin is red, dry, and usually painful; the area may swell
- *Second degree*—partial thickness; skin is red and has blisters that may open and weep clear fluid, making the skin appear wet; may appear mottled and often swells
- *Third degree*—full thickness; skin may be brown or black (charred), with the tissue underneath appearing white

Treatment:

- Stop the burning, and cool the affected areas.
  - If an *electrical burn*, make sure the power source is turned off.
  - If it is a *dry chemical burn*, brush the material off and rinse the burned area with water for 10 minutes.
  - If it is a *wet chemical burn*, rinse the affected area for 10 minutes.
- Cover burned areas with dry, sterile, loose dressings, or clean cloth.
- If severe, call 911.

DO NOT:

- Apply ice or ice water except on a small, superficial burn and then for no more than 10 minutes. Ice can damage delicate tissue.
- Touch a burn with anything except a clean covering.
- Remove any piece of clothing that is sticking to the burned area.
- Try to clean a severe burn.
- Break blisters.
- Use any kind of ointment on a severe burn.

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

- **Choking (Conscious Victim Only)**

  Follow these steps when assisting a **conscious** choking victim:

  - From behind, place thumb side of fist against middle of abdomen above navel. Grasp fist with other hand.
  - Give five abdominal thrusts.
  - Give five back blows and five abdominal thrusts.
  - Repeat until object is dislodged.
  - If the person becomes **unconscious**, begin rescue breathing techniques.

- **Fractures, Dislocations, and Sprains**

  Follow these steps when assessing a suspected fracture, dislocation, or sprain:

  - Support injured area above and below injury site.
  - Check for feeling, warmth, and color.
  - Immobilize body part above and below injured area by splinting.
  - Recheck for feeling, warmth, and color.
  - Apply cold compresses to reduce swelling and pain.
  - For general care for muscle, bone, or joint injuries remember R.I.C.E.:
    - **R**est
    - **I**mmobilize
    - **C**old
    - **E**levation

- **Frostbite**

  Frostbite occurs when body tissue freezes following exposure to a cold environment and typically affects extremities (fingers, hands, nose, feet, and toes).

  <u>Signals:</u>
  - Loss of feeling and sensation in the affected area
  - Skin appears waxy, cold to the touch, or discolored (flushed, white, yellow, or blue)

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

- **Frostbite (cont.)**

Treatment:

- Get the victim out of the cold.
- Handle the frostbitten area gently.
- Warm the skin gently by soaking the affected area in warm water (100-105 degrees F) until normal color returns and the area feels warm.
- Loosely bandage the area with dry, sterile dressings.
- If the person's fingers or toes are frostbitten, place dry, sterile gauze between them to keep them separated.
- Take precautions to prevent hypothermia.
- Call 911 to seek emergency medical care as soon as possible.

DO NOT

- Attempt to rewarm the frostbitten area if there is a chance that it might refreeze or if you are close to a medical facility
- Rub the area
- Apply direct heat from stove or heat lamp
- Break the blisters
- Apply ointments

HEAT EMERGENCIES

- **Heat Emergencies**

Categories:

- *Heat Cramps* are painful muscle spasms, usually in the legs and the abdomen.

- *Heat Exhaustion (early stage)* is an early indicator that the body's cooling system is becoming overwhelmed. Signs of heat exhaustion include:
  - Cool, moist, pale, flushed, or ashen skin
  - Headache, nausea, dizziness
  - Weakness, exhaustion
  - Heavy sweating

- *Heat Stroke (late stage)* is when the body's systems are overwhelmed by heat and stop functioning. **Heat stroke is a life-threatening condition.**

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

- **Heat Emergencies (cont.)**

  Signs of heat stroke include:

  - Change in the level of consciousness
  - High body temperature
  - Red, hot skin that can be either dry or moist
  - Rapid or weak pulse
  - Rapid or shallow breathing
  - Vomiting

  Treatment (for *any* heat-related emergency):

  - Move the person to a cool place.
  - Loosen tight clothing.
  - Remove perspiration-soaked clothing.
  - Apply cool, wet towels to the skin.
  - Fan the person.
  - If the person is conscious, give small amounts of cool water to drink.
  - **If the person refuses water, vomits, or starts to lose consciousness:**
    - Send someone to call 911 or the local emergency number.
    - Place the person on his or her side.
    - Continue to cool the person by using ice or cold packs on their wrists, ankles, groin, and neck and in the armpits.
    - Continue to check for movement and breathing.

- **Hypothermia**

  Hypothermia is a life-threatening condition that occurs when the entire body cools because its ability to keep warm fails. **The person will die if not given care.**

  Signals:

  - Shivering
  - Slow, irregular pulse
  - Numbness
  - Glassy stare
  - Weakness
  - Apathy or impaired judgment
  - Loss of muscle control, no shivering, or loss of consciousness (late stages of hypothermia)

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

- **Hypothermia (cont.)**

  Treatment:
  - Call 911.
  - Gently move the victim to a warm place.
  - Monitor airway, breathing, and circulation.
  - Warm the victim by wrapping him or her in blankets or by putting dry clothing on the person.
  - If the victim is alert, give him or her warm liquids to drink that do not contain alcohol or caffeine.
  - Monitor for signs of shock.

- **Insect Stings**

  Follow these steps when treating an insect sting:

  - Remove stinger by gentle scraping, not pulling or squeezing.
  - Find out from the victim as quickly as possible if they are allergic and if they have an epinephrine auto-injector.
  - Wash the site with soap and water.
  - Cover the site and keep it clean.
  - Apply a cold pack to the area to reduce pain and swelling.
  - Watch the person for signals of an allergic reaction.
  - Call 911, or transport the victim to a doctor or hospital if allergic reactions such as breathing difficulty, facial swelling, hives, nausea, or abdominal cramps occur.

- **Poison Ivy**

  Some of the most common and severe allergic reactions result from contact with plants of the poison ivy group. Ordinarily, the rash begins within a few hours after exposure; however, it may be delayed for 24 to 48 hours.

  Signals:
  - Itching
  - Redness
  - Rash
  - Possible headache and fever

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

- **Poison Ivy (cont.)**

  Treatment:
  - Remove contaminated clothing.
  - Wash all exposed areas thoroughly with soap and water.
  - Use poison ivy cleaner.
  - Apply calamine or other soothing skin lotion if rash is mild.
  - Get medical advice if a severe reaction occurs or if there is a known history of previous sensitivity.

- **Poisoning**

  If a person shows signs of poisoning, treat it as a life-threatening condition. Call 911, then call Poison Control at 1-800-222-1222.

- **Shock (Traumatic)**

  Shock is a **life-threatening** condition of low blood perfusion to body tissues that results in cellular injury or inadequate tissue function.

  Signals:
  - Restlessness or irritability
  - Nausea and vomiting
  - Altered level of consciousness
  - Pale or ashen, cool, moist skin
  - Blue tinge to lips and nail beds
  - Rapid breathing and rapid pulse
  - Excessive thirst

  Treatment:
  - Call 911.
  - Control any external bleeding.
  - Keep the victim from getting chilled or overheated.
  - Elevate the legs 8-12 inches if you do not suspect a head, neck, or back injury, or broken bones in the hips or legs.
  - Comfort and reassure the victim until advanced medical personnel arrive and take over.
  - **Do not give food or drink to the victim.**

BASIC WORKPLACE INCIDENTS & FIRST AID (CONT.)

- **Snake Bites**

The bite of a poisonous snake is extremely painful and is characterized by rapid swelling of the affected part.

- Call 911 or the local emergency number.
- Wash the wound.
- Keep the injured area still and lower than the heart.

- **Tick Bites**

There are two ticks common to the Commonwealth of Kentucky: the American dog tick and the lone star (deer) tick. Both ticks are known to carry diseases harmful to humans. The American dog tick transmits Rocky Mountain spotted fever, while the lone star tick transmits Lyme disease.

To avoid tick bites:

- Wear light-colored clothing, hat, long-sleeved shirt, and long pants.
- Tuck shirttail into pants, and tuck pant legs into socks.
- Use insect repellents.
- Check yourself for ticks after each outing.

Treatment:

- With a gloved hand, grasp the tick with fine-tipped, pointed, non-etched, non-rasped tweezers as close to the skin as possible and pull slowly.
- If possible, save the tick in a tight container for identification.
- Wash the bite area with soap and water.

DO NOT:

- Attempt to suffocate or cover the tick with butter, petroleum jelly, fingernail polish, ointment, gasoline, kerosene, or similar substance
- Burn with lighted cigarette or match

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Chapter

INCIDENT RESPONSE, REPORTING, & REVIEW

Subject

Bloodborne Pathogens

REFERENCES 29 CFR 1910.1030 and (Appendix A), 29 CFR 1904

PURPOSE & SCOPE The Secretary's Office of Safety (SOS) is dedicated to the protection of its employees from occupational exposure to bloodborne pathogens (BBP) or other potentially infectious materials (OPIM), and to providing guidance for appropriate response, reporting, and review of exposure incidents.

EXPOSURE EXAMPLES Examples of occupational exposure (not involving first aid situations) include, but are not limited to, employees engaged in the following tasks:

- Cleaning rest area restrooms and emptying the garbage for an entire facility where it is reasonable to expect possible exposure to blood or OPIM.
- Inspecting or maintaining bridges or other structures utilized as shelter by homeless people.
- Assisting with litter or crash debris cleanup.
- Repair or maintenance of sewage pipes, pumps, plumbing fixtures, or other equipment likely to be contaminated with excrement, blood, or OPIM.
- Responding to flood or other disasters where wastewater treatment plants, sewer and septic systems, or storage tanks may be inundated and overflowing; animal and human waste or remains are likely present; or contaminated sharps are potentially hidden and pose a stick hazard.

Many Kentucky Transportation Cabinet (KYTC) employees of varying job classifications are required to be trained, or are voluntarily trained, in Red Cross standard first aid to provide emergency care for co-workers in the absence of immediate medical facilities. This is not their primary job assignment, but rather a collateral duty.

EXPOSURE EXAMPLES (CONT.)

Examples of occupational exposure resulting from collateral duty incidents include, but are not limited to, the following:

- Employees who render emergency first aid to a co-worker or citizen in response to an injury or illness.
- Employees who render emergency first aid to a co-worker or citizen in response to a medical event.

Additional persons included in the emergency plan as having collateral duty are identified on a case-by-case, site-specific basis.

REPORTING REQUIREMENTS

Employees shall report exposure to BBP or OPIM in accordance with the injury reporting process outlined in **SHA-702** and **GAP-303-1**.

TRAINING

All employees shall receive training at the time of initial employment. Employees with potential exposure to bloodborne pathogens as a part of their work tasks shall also receive training annually thereafter. The training shall be conducted by SOS personnel.

RECORDKEEPING

All medical, training, and sharps injury records shall be maintained as follows:

- Medical Records

  All medical records required by the OSHA standard for BBP and OPIM shall be maintained by the KYTC Division of Personnel Management. These records shall be maintained for 30 years after employment ends.

- Training Records

  All training sessions shall be documented and records of the training shall be maintained on site by safety personnel for a minimum of three years. Copies shall be filed with the district office, as well as SOS.

  Training records shall include the following information:
  - Dates of training sessions
  - Summary of training sessions
  - Names and qualifications of training leaders
  - Names and job titles of all training attendees

- Sharps Injury Records

  SOS personnel shall establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps as required by 29 CFR 1904.

RECORDKEEPING (CONT.)

The information in the sharps injury log shall be recorded and maintained in such a manner as to protect the confidentiality of the injured employee.

The sharps injury log shall contain the following information, at a minimum:

- Type and brand of device involved in the incident
- Department or work area where the exposure incident occurred
- Explanation of how the incident occurred

The sharps injury log shall be maintained for the period required by 29 CFR 1904.33.

HEPATITIS B VACCINE

The Hepatitis B vaccine will be provided to employees as follows:

- Employees with occupational exposure (such as bridge painting inspectors, rest area attendants, and rest area foremen) shall be offered the Hepatitis B vaccine at no cost after receiving required training.

  Any employee declining or not completing the series of Hepatitis B vaccinations shall sign a *Hepatitis B Vaccine Declination Voucher* (**Exhibit 9034**).

  Note: The Hepatitis B vaccine will be provided at no cost to any employee with occupational exposure who initially declines the vaccine, but later wishes to receive it.

- Employees with occupational exposure resulting from collateral duty incidents (such as those administering first aid) shall be referred for post-exposure evaluation and follow-up. If recommended by a healthcare professional, a Hepatitis B vaccine shall be provided at no cost to the employee.

  Note: A preventative Hepatitis B vaccine is not offered cost-free to employees for possible collateral duty exposure; however, all employees shall receive the required BBP and OPIM informational training.

UNIVERSAL PRECAUTIONS

All blood, vomit, or bodily fluids shall be considered infectious. Employees shall follow universal precautions such as those listed below to prevent contact with blood or OPIM.

UNIVERSAL PRECAUTIONS (CONT.)

- Engineering and work practice controls shall be utilized to eliminate possible exposures. Where the risk of occupational exposure remains after institution of these controls, personal protective equipment (PPE) shall also be used.

- PPE is provided at no cost to KYTC employees if use is required. The supervisor or foreman should include PPE in first-aid kits. Employees who use PPE should take the following precautions:
  - Disposable gloves shall be worn whenever providing first aid.
  - Eye protection shall be worn when providing care to bleeding victims.
  - Contaminated materials shall be placed in BIOHAZARD bags for proper disposal.
  - Contaminated disposable PPE shall be placed in infectious waste bags. **Disposable PPE shall not be decontaminated and reused.**

- First-aid kits shall be fully stocked at all times, as ensured by the supervisor or foreman, including disposable latex gloves and alcohol prep pads.

- Prohibit activities such as eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses in work areas where there is a reasonable likelihood of occupational exposure to BBP or OPIM.

- Keep a BBP cleanup kit available. Kits may be obtained from the Division of Equipment and shall contain the following PPE and cleanup items:

  - Absorbent powder
  - Protective latex gloves
  - Protective eye wear
  - Shoe covers
  - Apron
  - Isolation mask
  - MSDS sheets
  - Scoops/scrapers
  - Disposable towel
  - Antiseptic towel
  - Red biohazard bags with ties
  - Disinfectant wipe - HIV and Tuberculocidal Kill Claim
  - Instruction sheet

UNIVERSAL PRECAUTIONS (CONT.)

Note: When any of the cleanup items or PPE is used, a new kit shall be obtained. **There are no refills.** To ensure that contaminated areas and cleanup tools are completely decontaminated, appropriate EPA-registered tuberculocidal disinfectants shall be obtained and used.

- Housekeeping precautions include the following:
  - Rest area personnel shall be alert to the possibility of contaminated sharps in can or barrel trash receptacles. For this reason, hand tamping of contents is prohibited. Extreme caution shall be exercised in carrying and disposing of litterbags to protect against protruding sharps.
  - Possible contaminated sharps shall not be directly touched. Rather, they shall be moved using mechanical means, such as a brush and dustpan, tongs, or forceps.
  - Blood or OPIM shall be cleaned as soon as possible after contamination occurs. The contaminated areas and cleaning tools shall be decontaminated with appropriate EPA-registered, tuberculocidal disinfectants.
    - Tuberculocidal aerosol sprays are appropriate to disinfect nonporous hard surfaces such as tile, glass, or plastic.
    - A flooding bulk disinfectant should be used to decontaminate porous materials such as rugs, concrete, mops, or brooms.

IMMEDIATE CARE PROTOCOLS FOR EXPOSURES

Immediate responses to exposure to blood or OPIM include, but are not limited to, the following:

- Skin:
  - Immediately wash the area of exposure with soap and running water, or flush with water as soon as feasible after removal of gloves or other PPE.
  - If hand washing facilities are not available (for example, on highway work operations), antiseptic hand cleansers or towelettes shall be used, and hands washed with soap and running water as soon as feasible. Alcohol prep pads with 70% isopropyl alcohol can be used as towelettes.
  - Seek medical assistance within 24 hours.
- Mucous Membranes (mouth, eyes, etc.):
  - Immediately flush with flowing water or saline solution.
  - Seek medical attention within 24 hours.

IMMEDIATE CARE PROTOCOLS FOR EXPOSURES (CONT.)

- Parenteral (piercing mucous membranes or skin by needle sticks, cuts, abrasions, or human bites):
  - Immediately wash wound with soap and running water.
  - Seek medical attention within 24 hours.

POST-EXPOSURE EVALUATION & FOLLOW-UP

Exposed employees should seek medical attention at the local hospital emergency room (ER) within 24 hours of exposure.

The Hepatitis B vaccine may be offered at no cost to all unvaccinated employees who render assistance in the presence of blood or OPIM, but no later than 24 hours after the exposure.

The ER physician should follow the hospital protocol for possible bloodborne pathogen (BBP) exposure, including a blood draw and baseline blood test consisting of a normal panel, HEP B, HEP C, and HIV screening, as well as the administration of a tetanus vaccine.

The ER physician should also provide results to the patient or patient's primary physician for purposes of follow-up blood testing and medical surveillance as required by the hospital's BBP exposure protocol. HEP B post-exposure vaccination is at the discretion of the treating physician.

HEALTH CARE PROFESSIONAL'S WRITTEN OPINION

A health care professional's written opinion shall be obtained when an employee is sent to a hospital ER following an exposure incident.

- The healthcare professional's written opinion for Hepatitis B should be limited to whether the Hepatitis B vaccination is or is not indicated for an employee, and if the employee received the Hepatitis B vaccination.
- The healthcare professional's written opinion for post-exposure evaluation and follow-up should be limited to whether the employee has been informed of the results of the evaluation, and if the employee has been told about any medical conditions resulting from his or her exposure to blood or OPIM that will require further evaluation or treatment.

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Chapter

INCIDENT RESPONSE, REPORTING, & REVIEW

Subject

Automated External Defibrillators (AED)

REFERENCES KRS 311.667, KRS 311.668, and 803 KAR 2:310

PURPOSE & SCOPE The Kentucky Transportation Cabinet (KYTC) has concluded that the threat of a sudden cardiac arrest is an office hazard that can be minimized at a reasonable monetary cost. Therefore, automated external defibrillators (AEDs) have been placed in central locations in facilities throughout the state.

REPORTING REQUIREMENTS The person responding to an incident requiring the use of an AED shall document the event using TC 25-169, *Automated External Defibrillator (AED) Post-Event Review* (**Exhibit 9025**). A copy of the completed TC 25-169 shall be sent within one business day to the Secretary's Office of Safety (SOS) for forwarding to the AED medical oversight physician.

TRAINING KYTC employees who would like to be CPR, first aid, and AED certified should contact their district safety coordinators or SOS personnel. 803 KAR 2:310 requires at least one person to be first aid trained for all places of employment with more than eight employees. Approved training courses for CPR, first aid, and AED are available through the American Red Cross.

RECORDKEEPING CPR, first aid, and AED training records shall be retained for two years and made available upon request.

RESPONDER LIABILITY The Commonwealth of Kentucky has a Good Samaritan statute in place to protect citizens who aid in emergency situations. KRS 311.668 provides that when citizens respond to an emergency and act as an ordinary, reasonably prudent person, they shall be immune from civil liability for any personal injury as a result of the care or treatment they render.

EQUIPMENT AEDs shall be located close to first-aid stations, if possible, and include one set of defibrillation electrodes in the case. One resuscitation kit shall be placed in proximity to the AED and shall contain two pairs of latex-free gloves, one razor, one set of trauma shears, and one facemask barrier device.

EQUIPMENT (CONT.)

As guidelines suggest an optimal response time of three minutes or less, things to consider in AED placement may include building layout, likelihood of more physical activity taking place in a particular area, and areas with high visitor activity.

MAINTENANCE

All equipment and accessories necessary for support of medical emergency response shall be maintained in a state of readiness.

Specific maintenance requirements include:

- Monthly equipment maintenance check reports shall be kept on file for three years and made available upon request (**Exhibit 9024**). Maintenance checks shall include the replacement of any electrodes or batteries that have met their expiration date.

- SOS personnel shall be informed of changes in availability of emergency medical response equipment and the withdrawal of equipment from service.

- SOS or district safety personnel shall inform trained or security personnel of changes in availability of emergency medical equipment.

Following the use of the emergency response equipment, all equipment shall be cleaned, decontaminated, disinfected, and properly disposed per manufacture guidelines. The AED shall be taken out of service, and the district safety or SOS personnel shall be notified to obtain replacement defibrillation pads and battery.

If replacement is necessary, the AED replacement unit shall conform with the unit being replaced. For additional help in purchasing or securing replacement devices, contact SOS personnel.

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Chapter	INCIDENT RESPONSE, REPORTING, & REVIEW
Subject	OSHA Injury & Illness Recordkeeping

REFERENCES

29 CFR 1910.1030, 29 CFR 1904.29(b)(6) through 1904.29(b)(10), and 803 KAR 2:181

PURPOSE & SCOPE

The Kentucky Transportation Cabinet (KYTC) is required to record serious work-related injuries and illnesses on the *OSHA 300 Log*. This section refers only to the requirements for reporting and recordkeeping of incidents that meet the threshold criteria as Occupational Safety and Health Administration (OSHA) recordable injuries.

OHSA RECORDABLE INCIDENTS

To be considered OSHA-recordable, an injury or illness incident must meet one or more of the following criteria:

- Work-related fatality
- Work-related injury or illness that results in loss of consciousness, days away from work, restricted work, or transfer to another job
- Work-related injury or illness requiring medical treatment beyond first aid
- Medically diagnosed work-related cancer, chronic irreversible disease, fractured or cracked bones or teeth, punctured eardrum
- Work-related needlestick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material (as defined by 29 CFR 1910.1030)

  All work-related needlestick injuries and cuts must be recorded and entered on the *OSHA 300 Log* as an injury. To protect the employee's privacy, do not enter the employee's name on the *OSHA 300 Log*. See requirements for privacy cases in paragraphs 29 CFR 1904.29(b)(6) through 1904.29(b)(10).

MAINTAINING & POSTING RECORDS

Injury and illness records must be maintained at the facility for at least five years. Each February through April, senior management or their designee must post the OSHA 300 report (a summary of the previous year's OSHA-recordable injuries and illnesses) in an area readily available to employees. Copies of injury and illness records must be provided to current and former employees or their representatives, upon request.

ELECTRONIC SUBMISSION OF RECORDS

KYTC is required by OSHA to electronically submit injury and illness data recorded on OSHA injury and illness forms. Analysis of this data will enable OSHA to use its enforcement and compliance resources more efficiently. The SOS shall satisfy this requirement through KYTC's third party administrator.

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Chapter	INCIDENT RESPONSE, REPORTING, & REVIEW
Subject	Workers' Compensation Program

REFERENCE

KRS 342, **GAP-303**

PURPOSE & SCOPE

The Workers' Compensation Law (KRS 342) is designed to compensate employees for loss of earnings due to work-related injuries or a disease arising out of and in the course of their employment. This coverage includes medical, temporary total disability, permanent partial disability, permanent total disability, rehabilitation services, and death and burial benefits.

The Kentucky Transportation Cabinet (KYTC) encourages statewide efforts to provide a safe work environment and to lower the costs of workers' compensation claims. KYTC continues to stress a team approach in resolving workers' compensation issues.

PROCEDURE

KYTC is self-insured and processes claims along with a third-party administrator (TPA). The process is initiated when the employee reports an injury or illness that is work-related. The employee shall report to his or her supervisor as soon after injury or onset of illness as possible. The employee and/or immediate supervisor will then report the injury or illness as soon as possible using the process detailed in **GAP-303**.

The designated workers' compensation coordinator for the employee's organizational unit will act as the initial coordination point between the employee, KYTC, and the workers' compensation TPA.

The employee is responsible for submitting all documents related to their medical care and any resulting care, directed leave, or job restrictions related to the incident, to their supervisor for forwarding to the designated workers' compensation coordinator.

All workers' compensation records shall be retained by KYTC for 5 years.

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Chapter	INCIDENT RESPONSE, REPORTING, & REVIEW
Subject	Injury or Illness Reporting

REFERENCES KRS 342, **GAP-303**

REQUIRED INCIDENT REPORTING

All incidents involving injury or illness of the following individuals as described below shall be reported to supervisors:

- Injury of any KYTC employee incurred during the course of KYTC work
- Illness onset, or initial awareness of illness, of a KYTC employee during the course of KYTC work
- Injury of any individual working under contract to KYTC incurred during the course of work for KYTC or while on KYTC premises or property
- Injury of any individual working for a company contracted to work on KYTC property, roadway, or project, if notified or knowledgeable of event

REPORTING PROCEDURES

Employees who experience work-related injury or illness shall report such incidents to their immediate supervisor as soon as possible following the injury or awareness of the illness regardless of any intent to seek medical treatment. Hence, even if the employee does not intend to seek medical treatment initially, the duty to report still exists. All initial reports must be submitted within 24 hours of injury or awareness of illness. (**GAP-303**)

The preferred employee reporting method shall be the KYTC Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system. BOOTS will electronically create and distribute the required notifications through the immediate supervisory chain, the designated workers' compensation coordinator, and Secretary's Office of Safety (SOS) personnel.

Reporting incidents using BOOTS allows the designated workers' compensation coordinator to more quickly create the documents required for Workers' Compensation (**SHA-706**) and OSHA reporting (**SHA-705**).

If immediate reporting via BOOTS is not feasible, the employee shall complete an *IA-1 Workers Compensation - First Report of Injury* form until electronic reporting is feasible, at which time it should be completed in BOOTS.

SUPPORTING DOCUMENTATION

Regardless of the incident reporting method (BOOTS or IA-1), it is important that all relevant information and documentation of the incident is collected at the time of the incident, or as soon as feasible. This may include, but is not limited to, the following:

- Photos that would document any relevant environmental or other factors or conditions involved
- Written statements of any witnesses or individuals involved in rendering first aid, if feasible, or names and contact information for same
- Name, address, and contact information for private property owners, if involved, and insurance and vehicle information for private vehicles involved if injuries sustained in a vehicle crash

FAILURE TO COMPLETE REQUIRED INCIDENT REPORTING

If the employee declines, refuses, or physically unable to report a work-related injury or illness, the employee's direct supervisor or supervisory chain shall complete the report on the employee's behalf if aware of the injury or condition. KYTC personnel cannot compel an employee to complete the report or to sign any report completed on their behalf if they refuse to do so.

NOTIFICATION REQUIREMENTS

Employees shall report all incidents through supervisors to designated workers' compensation coordinators and SOS staff as soon as possible, but within a target range of 1 business day following the injury or awareness of illness. Incidents must be processed and reported to the workers' compensation administrator (third party administrator) within 3 business days.

KYTC SEVERE INJURY REPORTING REQUIREMENTS

Death, hospitalization, amputation, loss of an eye, or other serious injury of a KYTC employee shall be immediately reported to the district safety coordinator and the Secretary's Office of Safety (SOS) at (502) 564-6963. Do not use email to report a severe injury as defined in this section. The information provided shall include:

- Caller's name and position classification
- Affected employee's name, position classification, and current work address
- Details surrounding the incident, including location and names of any witnesses

DO NOT delay reporting even if all the above information is not readily available.

KY LABOR CABINET REPORTING REQUIREMENTS

Per 803 KAR 2:181, the Kentucky Labor Cabinet requires reporting of certain incidents within specific time frames as detailed below:

- Within 8 hours of an incident involving the death of an employee being reported to KYTC, SOS personnel shall orally report to the Kentucky Labor Cabinet, Department of Workplace Standards, Division of Occupational Safety and Health Compliance, in Frankfort at (502) 564-3070. If SOS personnel cannot reach the Frankfort office, they shall report the incident using the OSHA toll-free, central telephone number, 1-800-321-OSHA (1-800-321-6742).

- Within 8 hours of incident being reported to KYTC:
  - Fatality as a result of work-related incident, including death resulting from a heart attack.

- Within 72 hours of incident being reported to KYTC:
  - Hospitalization of an employee including hospitalization resulting from a heart attack.
  - Amputation
  - Loss of eye

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Subject
Property Damage Reporting

PURPOSE & SCOPE

Employees shall report all incidents involving any of the following:

- Collisions involving cabinet vehicles or equipment (including leased vehicles and equipment)
- New damage of any origin, theft, or vandalism to cabinet vehicles or equipment
- Damage to any private property or bodily injury involving a cabinet vehicle or equipment.

REPORTING RESPONSIBILITY

The responsibility for submitting an initial property damage report is held by the employee driving or operating the involved cabinet vehicle or equipment at the time of the incident, or the employee who discovers the damage. If the employee is not able to complete this initial report, the employee's supervisor should complete the initial report.

REPORTING SOFTWARE

The preferred reporting method shall be the KYTC Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system. BOOTS will create and distribute the required notifications through the immediate supervisory chain, to equipment and fleet coordinators, and to safety personnel.

All relevant information and documentation of the incident should be collected at the time of the incident, or as soon as feasible.

This may include, but is not limited to, the following:

- Photos of the incident scene, damage incurred, and any relevant environmental (or other) factors or conditions
- Written statements of any witnesses, if feasible, or names and contact information for any witnesses
- Name, address, and contact information of private property owners, if involved, and insurance and vehicle information for private vehicles, as applicable.

POLICE CRASH REPORTS

If the incident involves a collision with a private vehicle, private property, or injury to any non-KYTC employee, a law enforcement agency should be requested to respond so that a police crash report may be completed.

It is the responsibility of the employee and Supervisor to ensure that the police crash report is obtained when prepared, added to the incident report in BOOTS, and provided to those within the cabinet with need for the report.

FALSE REPORTS

KRS 304.47-030 states:

> *Any person who knowingly and with intent to defraud any insurance company or other person files a statement of claim containing any materially false information or conceals, for the purpose of misleading, information concerning any fact material thereto commits a fraudulent insurance act, which is a crime.*

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Chapter

INCIDENT RESPONSE, REPORTING, AND REVIEW

Subject

Incident Review Process

PURPOSE & SCOPE

The Secretary's Office of Safety (SOS) is committed to making the Kentucky Transportation Cabinet (KYTC) a "learning organization" that learns from experiences and takes action on the lessons learned to improve the safety and health of our employees, as well as the preservation of property.

In **SHA-701**, KYTC defines *incidents* as follows:

- *Incident* – An event or occurrence of any type that directly results in injury or illness to any person, or damage to any property.
- *Near-miss or close-call* – An incident that did not result in injury, illness, or property damage, but had the potential to do so.

All incidents must be treated as opportunities to learn, empower employees, and enable KYTC Leadership to prioritize corrective measures. To support these efforts, SOS has implemented an incident review process.

OBJECTIVES

All KYTC personnel involved in the incident review process must conduct themselves and their work so as to clearly demonstrate the following process objectives:

- Gather information.
- Understand the causes and factors that contributed to the incident. *Assigning blame or humiliating someone are never acceptable objectives of an incident review*.
- Identify and implement actions that can be taken to prevent similar incidents. *Recommending discipline or taking retribution are never acceptable objectives of an incident review*.
- Improve the safety and health of all KYTC employees. *Advancing a personal agenda for or against any person or group is never an acceptable objective of an incident review.*

COMPONENTS

The major components of the incident review process (in order of action) are as follows:

Table 4. Incident Review Process Components

Incident *(Resulting in injury or illness.)*	**Near-Miss/Close Call** *(No resulting injury or illness.)*
• Supervisor Review • Safety Coordinator Review • Safety Administrator Review	• Safety Coordinator Review • Safety Administrator Review

At any point in the process where other specific actions are determined to be necessary, they may be assigned for action.

REPORTING SOFTWARE

The incident review process is incorporated into the structure of the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system and follows the order of action above. BOOTS is the primary tool for documenting all incident review steps, collecting and sharing documentation, and assignment of actions.

RESPONSIBILITIES

Specific personnel are assigned with completing key responsibilities within each step of the incident review process. The purpose of each process component, as well as personnel roles and responsibilities, are listed below:

➢ Supervisor Review

Intended to ensure the involved employee's supervisory chain of command is engaged in determining incident cause factors, this part of the process is assigned to a supervisor of the involved employee(s).

Essential responsibilities are:

- ♦ Verify that the information provided by the reporting employee is complete and accurate.
- ♦ Add all required information or documentation to BOOTS as it becomes available.
- ♦ Perform due diligence of independent fact-finding to make an initial determination of incident nature, contributing factors, or causes.
- ♦ Document any initial corrective any preventive measures that have or could be implemented.

The second-line supervisor shall also review the incident as part of this process and assist the reviewing Supervisor with their review as needed.

RESPONSIBILITIES (CONT.)

- Safety Coordinator Review

  Intended to ensure an objective review outside the involved employee's chain of command, this part of the process is assigned to the first-line designated district or central office safety staff member.

  Essential responsibilities are as follows:

  - Verify the completeness and accuracy of the initial incident report and Supervisor Incident Review, and refer incident back to Supervisor for completion or correction as needed.
  - Perform due diligence of independent fact-finding and review of information provided above to validate the supervisor findings, and make discretionary determination of underlying causal factors.
  - Identify and pursue any initial or additional corrective and preventive measures, proper venue or channels to pursue the actions, and assign actions required.
  - Ensure that both first and second-line supervisors have completed their review actions appropriately.

- Safety Administrator Review

  Intended to provide an additional level of review, assistance, or guidance as needed, and to recognize common factors across a larger number of incidents and locations, this part of the process is assigned to the safety administrator.

  Essential responsibilities are as follows:

  - Verify completion of all actions in previous process components.
  - Validate causal factors, as well as any preventative and corrective measures already identified (implemented or proposed) in previous process reviews.
  - Identify and pursue any actions needed to support recommended preventative and corrective measures.
  - Evaluate and formulate necessary policy, procedure, or training needed to address causal factors or risks.
  - Evaluate effectiveness of actions and policies that result from the incident review process.

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Chapter
SAFETY PROGRAMS

Subject
Excellence In Safety Award

PURPOSE & SCOPE

To provide continued encouragement of safety culture, each year the Secretary's Office of Safety (SOS) presents the Excellence in Safety Award. The award is presented to a district that demonstrates outstanding efforts in all aspects of safety as evidenced by key performance indicators measured throughout the year, along with an end-of-year written summary of accomplishments and initiatives reflecting a positive safety culture. A matrix is used to help us measure how effectively those are being done in each District.

AWARD PERFORMANCE INDICTORS

Key performance indicators used to demonstrate evidence of outstanding efforts in all aspects of safety (with examples) are as follows:

- Management Leadership and Involvement
  Example: All management is active in safety reviews of incidents and injuries, including use of the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system.
- Hazard Recognition and Controls
  Example: Districts report safety opportunity suggestions and near misses.
- Employee Engagement
  Example: Employees volunteer for district and statewide safety committees
- Evaluation and Improvement
  Example: Districts recommend and use safety scorecards, such as seatbelt usage and speeding, in order to lower injury and incident rates.
- Training and Competence
  Example: Employees complete both required and elective trainings.

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Chapter

SAFETY PROGRAMS

Subject

Significant Injury or Fatality (SIF) Prevention Program

DEFINITION

Significant injury or fatality (SIF) – A life-threatening injury or illness that results, or is likely to result, in death; or which is life-altering, leaving the employee with very limited use or non-use of an internal organ, bodily function, or body part.

BACKGROUND INFORMATION

General safety research and Kentucky Transportation Cabinet (KYTC) history show that SIF incidents and SIF-precursor events (close calls or near misses) account for approximately 21% of all incidents. Therefore, one key method to preventing incidents is for safety personnel to analyze previous SIF incidents and SIF-precursor events. The role of reporting all close calls or near misses in SIF elimination cannot be over-emphasized.

PURPOSE & SCOPE

The purpose of the SIF prevention program is to alert employees to occupational hazards with a high possibility of SIF events, ways to mitigate risk, and directions for reporting SIF incidents and SIF-precursor events, such as close calls or near misses, to lessen future risk.

HIGH SIF-RISK HAZARDS

KYTC has identified ten occupational hazards with particularly high SIF potential:

- Chainsaw use, tree felling, limb or brush cutting, or storm cleanup
- Work with energized electrical equipment
- Confined space entry
- Vehicle or equipment crash
- Work at height greater than 4 feet
- Work in a trench or while performing excavation
- Being struck by a moving vehicle or mobile equipment
- Work under or near a suspended load
- Being caught in or struck by release of stored energy or mass
- Any activity with the potential for death, as well as life-threatening or disabling injury

REPORT & ANALYSIS OF SIF EVENTS

Following any SIF incident or SIF-precursor event (close-calls and near-misses), supervisors and safety personnel shall ensure reporting and documentation of the incident according to the process and procedures outlined in **SHA-707**, **SHA-708** (if applicable), and **SHA-709**.

As previously stated, the role of reporting all close calls or near misses in SIF elimination cannot be over-emphasized and *must* be prioritized.

All incidents, close-calls, and near-misses shall be documented in the Boosting Occupational Outcomes in Transportation Safety (BOOTS) management system, and should include the following:

- Incident description
- Photos
- Potential cause
- Root cause
- Lessons learned
- Recommendations to be communicated to management and Secretary's Office of Safety

The following steps should be adhered to in the reporting and analysis process:

1. Prioritize notifications and follow-through.
2. Conduct a full review of the incident.
3. Identify all possible contributing factors and root causes.
4. Identify critical preventive or corrective actions by applying the Hierarchy of Controls (**SHA-401**).
5. Implement actions.
6. Share findings and action plan.

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Chapter

CUTTING & WELDING OPERATIONS

Subject

Storage & Handling of Oxygen, Acetylene, & Liquified Petroleum Gas Cylinders

GENERAL PRECAUTIONS:

Employees shall take the following general precautions when storing and handling oxygen, acetylene, and liquified petroleum gas cylinders:

Caution: Employees shall not take cylinders into confined spaces.

- Wear personal protective equipment (PPE) as recommended.
- Handle cylinders with care at all times.
- Move leaking cylinders to an open area with good ventilation.
- Place warning signs on or near cylinders to caution personnel against using spark- or flame-producing items.

TRANSPORTATION & USAGE

Employees shall take the following precautions during transportation and use of oxygen, acetylene, and liquified gas cylinders:

Caution: Cylinders shall not be transported or operated in a horizontal position.

- When used in shop operations, oxygen and acetylene cylinders shall be secured to hand trucks with a chain. Additional cylinders not secured on hand trucks shall be secured against a wall. Valve caps or approved cylinder safety caps shall be in place on all cylinders not actively being used.

- When used on service trucks for field repairs, oxygen and acetylene cylinders shall be secured to prevent upsetting. Valve caps or approved cylinder safety caps shall be in place on all cylinders when being transported.

- Liquified petroleum gas cylinders either in-use within a building or attached and ready for use, shall be limited to a total gas capacity of 2,000 cubic feet or 300 pounds of liquified petroleum gas.

STORAGE

Employees shall take the following precautions when storing oxygen, acetylene, and liquified petroleum gas cylinders:

- Full cylinders shall be stored in a well-protected, ventilated, and dry location where they are separated from each other – and any other highly combustible materials – by a minimum distance of 20 feet, unless a fire-retardant wall separates them.

- Cylinders shall be stored far enough from the cutting and welding operation to prevent contact with hot slag, sparks, or flame.

- Empty oxygen and acetylene cylinders shall have valves closed. Valve protection caps shall always be in place and hand tight, except when cylinders are in use or connected for use. Oxygen-cylinder valves shall never be allowed to come into contact with grease or oil.

- Acetylene cylinders shall have the valve wrench kept in place on the valve spindle.

- A separate room, special building, or designated outdoor area shall be provided for storage of liquified petroleum gas in excess of 300 pounds. Special Buildings, rooms, or compartments used for such storage shall have no open flame for heating or lighting and shall be well ventilated.

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Chapter
CUTTING & WELDING OPERATIONS

Subject
Cutting Operations

REFERENCES

29 CFR 1926 (Subpart D), OSHA PEL requirements
SHA-905, personal protective equipment (PPE) requirements

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions during cutting operations, as applicable:

- Torches shall be lit by friction lighters or other similar sources. Do not use matches or cigarette lighters.
- Acetylene and oxygen cylinders shall have operable pressure regulators.
- Operators shall frequently inspect hoses. Broken hoses shall be replaced. Do not use tape to repair hoses.
- Cylinder valves shall be closed upon work completion. Pressure shall be bled from oxygen and acetylene torches.
- Lukewarm water shall be used to loosen acetylene cylinders that have frozen to the ground. Do not use an open flame to loosen frozen cylinders.
- Hoses for cutting operations shall be positioned so as not to create a tripping hazard.
- Cutting-torch operators shall immediately mark material worked upon as "hot" to warn other personnel who may come in contact with the material.
- Acetylene torches shall not be operated with more than 15 psi.
- When welding or cutting metals such as stainless steel, cadmium, or lead coated steel, adequate ventilation is required. Toxic fumes from sources such as these shall not exceed the Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PEL). (29 CFR 1926, Subpart D)

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Chapter	CUTTING & WELDING OPERATIONS
Subject	Electric Welding

REFERENCES SHA-905, personal protective equipment (PPE) requirements

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions during cutting operations, as applicable:

- The welder must be properly installed and grounded.
- Never weld without proper ventilation.
- Exhaust from welding power sources driven by internal combustion engines shall be vented outside to prevent a carbon monoxide hazard.
- Mechanical ventilation hoods shall be provided to remove toxic fumes and contaminants to the outside of the building.
- Only weld in a fire safe area.
- Only use electrode holders capable of safely handling the maximum-rated current required by the electrodes.
- Any current-carrying parts passing through the portion of the holder that the arc welder grips in his or her hand and the outer surfaces of jaws of the holder shall be fully insulated against the maximum voltage encountered to ground.
- Splices and breaks in electrode cables within 10 feet of the electrode holder shall not be permitted.
- Welding cables shall be kept dry and free from grease and oil.
- The frames of all arc-welding machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire that is grounded at source of the current.

GENERAL OPERATIONS & PRECAUTIONS (CONT.)

- The welding machine shall have overcurrent protection provided by a circuit breaker that is in view of the operator.

- Electrodes shall be removed from the holder when electrode cables are left unattended or when the job is completed.

- Hot electrodes shall not be dipped into water.

- A portable welding screen is required on electric welding jobs to shield harmful rays from other employees working nearby. This requirement applies to all garages and shops and, whenever practical, in the field.

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CUTTING & WELDING OPERATIONS

Subject

Fire Protection

REFERENCES

29 CFR 1910.252(a)(2)(iii)(b)
SHA-206-4, *Fire Extinguishers (Safety Observations & Inspections)*
SHA-604, *Fire (Emergency Action Plans)*

GENERAL PRECAUTIONS

Employees shall comply with the following fire safety precautions during cutting and welding operations:

- Service trucks shall be equipped with a dry-chemical fire extinguisher with at least a 20-pound Class ABC rating.
- Suitable fire extinguishing equipment, such as buckets of sand or a dry chemical extinguisher (Class ABC) shall be readily available.
- Welding operators in shops and garages shall have a dry-chemical, Class ABC fire extinguisher immediately available.
- Cutting torches and welders shall not be used on old drums, barrels, tanks, or other containers until they have been thoroughly cleaned and no traces of flammable, explosive, or toxic substances remain.
- No drum, container, or hollow structure shall be cut or welded unless a pressure vent or opening is provided.
- Employees shall use fire resistant curtains as barriers when using an arc welder.

  Caution: An arc welder is capable of producing temperatures in excess of 10,000 degrees Fahrenheit; therefore, it is important for the work area to be made fire safe.
- Move all flammable or combustible materials away from the work area. If combustibles cannot be moved, employees shall cover combustible materials with fire resistant blankets or shields.
- A fire watch shall be maintained for at least 30 minutes after completion of welding or cutting operations to detect and extinguish possible smoldering fires. [29 CFR 1910.252(a)(2)(iii)(b)]

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CUTTING & WELDING OPERATIONS

Subject

Personal Protective Equipment

REFERENCES 29 CFR 1910.1024; **406-1**, *Respiratory Protection*; **SHA-503**, *Welding Helmets*; **SHA-504**, *Eye Protection*

REQUIREMENTS Employees involved in cutting and welding operations shall comply with the following personal protective equipment (PPE) requirements.

- Flame resistant, 100% cotton clothing, wool, or leather, should be worn where the potential for flame or sparks exists.

  Caution: Do not wear clothing made from synthetic materials that can melt or burn when subjected to flame or sparks.

- Welder's gloves shall be worn while cutting, welding, or conducting other such operations.
- Welding helmets and cutting goggles shall be worn as described in **SHA-503** and **SHA-504**.
- Use HEPA-filtered weld fume extractors to mitigate fumes when cutting, welding, or heating the following:

  - Lead base metals
  - Metals containing or coated with lead-bearing materials
  - Cadmium-bearing or cadmium-coated base metals
  - Cadmium-bearing filler material
  - Metals coated with chromium-bearing materials
  - Metals covered with mercury-bearing metals
  - Zinc-bearing base or filler metals

  Note: Specific requirements apply when working on a beryllium-containing base and are detailed in 29 CFR 1910.1024.

- If fume removal is not feasible, respirators shall be required and used in accordance with KYTC's respiratory protection program while cutting or welding under certain conditions (**SHA-406-1**).

REQUIREMENTS (CONT.)

- Other employees exposed to the same atmosphere as the welders or cutters shall be protected in the same manner as the welders or cutters.

- When it is impossible to provide mechanical or local exhaust ventilation, air-line respirators shall be worn. If in doubt regarding the proper respirator to use, supervisors shall contact the Secretary's Office of Safety for guidance.

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Subject

Housekeeping

CHECKLIST

Because good housekeeping is essential to maintaining a safe and efficient workplace, a garage or shop "good-housekeeping checklist" shall include, but not be limited to, the following:

- Established procedure for cleaning
- Floor drains clean and covers in place
- Exits clear at all times
- Steps and stairs clear of objects
- Aisles clear of stored materials
- Floors clear of unused tools and materials
- Tools and equipment in proper storage areas when not in use
- Adequate provision for disposal of waste

  Note: Lids or covers are required on waste receptacles containing flammable waste, including oily or greasy rags.

- Approved dry compound or absorbent for oil and grease spills
- Floor covers in place for hoist controls
- Unobstructed access to fire extinguishers, water control valves, and circuit breaker boxes

  Note: Circuit breakers shall be clearly marked as to what they control, and breaker box panel doors latched securely.

- Restrooms clean, orderly, and stocked with an adequate supply of toilet paper, soap, and (at a minimum) lukewarm water
- Windows and lights clean
- Adequate lighting provided and all lights working properly
- Clean facilities provided for storing clothing, eating lunches, and taking breaks

CHECKLIST (CONT.)

- Materials securely stacked to prevent falling
- Grounds, driveways, and parking areas clean and orderly
- Adequate heating and ventilation in all parts of the building
- Sufficient space between machines for safe operation
- Spill kits used as required for in-house spills
- No gasoline or flammables used for cleaning equipment, floors, and other items
- Used oil containers maintained in a clean manner and all spills cleaned immediately

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Subject

Hydraulic Lifts & Jacks

ADMINISTRATIVE RESPONSIBILITIES

The district equipment supervisor should follow the manufacturer recommendations for inspections of hydraulic lifts for leaks and other deficiencies and provide maintenance as required. Automotive hydraulic lifts shall be inspected annually by a third party.

The capacity of jacks shall be posted legibly in work areas.

GENERAL PRECAUTIONS

Employees shall:

- Use safety stands and dump bed locks when working beneath raised equipment, including dump beds.
- Use wheel chocks when working beneath raised equipment, including dump beds.
- Follow all manufacturer guidelines, including capacity limits.
- Crib or block the load after it has been raised.
- Check lifting equipment and jacks before each use.

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Subject

Stationary Air Compressors

GENERAL PRECAUTIONS

Employees are to comply with the following safety precautions when working with stationary air compressors:

- Belt pulleys shall be guarded.
- The compressor shall have an operative pressure gauge and safety pop-off valve that engages when no more than 10 percent of the compressor's maximum working pressure is exceeded.
- Air compressors shall be secured to the floor to prevent free movement.
- Employees shall follow all manufacturer guidelines.
- All components including fittings, pipes, and hoses shall be rated for the maximum pressure of the air compressor.
- If the compressor has an electric drain valve, it shall be 18 inches from floor level.

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Fixed Electrical Equipment

REFERENCES **SHA-407**, *Electrical Safety*

GENERAL PRECAUTIONS

Water fountains, ice machines, and soft drink machines, as well as grinders, drill presses, electrical saws, and all other electrical equipment, shall be grounded according to the NFPA 70 National Electrical Code.

Spliced wires or cords shall not be used on any electrical equipment.

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Building Wiring

REFERENCE SHA-407, *Electrical Safety*

REQUIREMENTS All permanent building wiring shall be in accordance with the current NFPA 70 National Electrical Code.

Any installation or modification of electrical wiring shall be completed by a licensed electrician.

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Subject

Bench Grinders

GENERAL OPERATIONS & PRECAUTIONS

Operators shall review the *Bench Grinder Safety Checklist* prior to beginning operations (**Exhibit 9027**).

- *Spindle Speed.* The spindle speed of the machine shall be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel.

- *Ring Test.* A ring test shall be conducted on all wheels prior to their mounting to make sure they have not been damaged in transit, storage, or otherwise. The wheel should be tapped gently with a light nonmetallic implement (such as the handle of a screwdriver for light wheels, or a wooden mallet for heavier wheels). If they sound cracked (dead), they shall not be used.

- *Safety Guards.* Grinding machines shall be equipped with safety guards that cover the spindle end, nut, and flange. Guards shall provide a suitable measure of protection to the operator.

- *Work Rests.* Floor Stand and bench mounted abrasive wheels shall be provided with supported and adjustable work rests no further than one-eighth inch from the surface of the wheel.

- *External Grinding.* Cut-type wheels used for external grinding shall be protected by either a revolving cup guard or a band-type guard in accordance with the provisions of the American National Standards Institute (ANSI), B7-1970 Safety Code. Employees shall conduct a ring test prior to use.

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Chain Hoists

ADMINISTRATIVE RESPONSIBILITY

Chain hoist capacity shall be posted legibly in work areas.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions when using chain hoists:

- Chain hoist capacity shall not be exceeded.
- Hoist hooks shall have an operational safety latch or keeper.
- Employees shall follow all manufacturer guidelines.
- Chain hoists shall be regularly inspected to ensure they are safe, including a check of the lift chain, pinion, sheaves, and hooks for wear. If any component is found defective, it shall be tagged out of service (**SHA-411**). Operators shall check chains and hoists before each use.
- All overhead hoists shall meet the applicable requirements for construction, design, installation, testing, inspection, maintenance, and operation as prescribed by the manufacturer.
- Hoists shall only be located in locations that permit the operator to stand clear of the load.

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Subject

Fans

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions when using fans:

- Follow all manufacturer guidelines.
- All floor and office fans shall have blades guarded by a 1/2-inch guard or other suitable means.
- Spliced wiring and cords shall not be used.
- Commercial-rated fans shall only be used in industrial areas.

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Subject

Battery Charging & Changing

REFERENCE

ANSI Z358.1

ADMINISTRATIVE RESPONSIBILITIES

A CAUTION, BATTERY-CHARGING AREA sign shall be posted in the battery-charging and changing areas. A NO SMOKING sign shall be posted at the charging station.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions when charging and changing batteries:

- Battery charging and changing areas shall be separated from the areas of other operations.
- Portable battery chargers shall be stored in the designated battery charging and changing area when not in use.
- Face shields, safety goggles, rubber gloves, hearing protection, and rubber aprons shall be worn by personnel engaged in battery charging operations (**SHA-500**).
- Personnel handling battery acid (sulfuric acid) shall wear face shields, safety goggles, rubber gloves, and rubber aprons (**SHA-500**). These items shall be provided at the battery charging site.
- When mixing, acid shall be poured into water and not vice versa.
- Sulfuric acid shall be stored *only* in equipment repair garages.
- When batteries are being charged, the vent caps shall be kept in place to avoid electrolyte spray. Vent caps shall be maintained in functioning condition.
- Facilities shall be provided for flushing electrolytes from the eyes and skin with water when changing or charging storage batteries. A water supply capable of providing a 15-minute flush shall be within 25 feet of the work area.

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Subject

Safety Tire Cages

REFERENCES

29 CFR 1910.177; **SHA-405-1**, *Servicing Multi-Piece and Single-Piece Rim Wheels*

ADMINISTRATIVE RESPONSIBILITIES

A multi-piece rim poster for compliance with 29 CFR 1910.177 shall be posted in the immediate vicinity of the tire cage.

GENERAL OPERATIONS & PRECAUTIONS

When tires installed on split rims with locking rings are filled with air, the tires shall be placed in an approved safety tire cage or rack. Employees shall incorporate the following procedures and precautions:

- A clip or chuck and in-line gauge shall be used when airing tires with multi-piece rims.
- Airing tires shall not be left unattended.
- Securely chain the rim and tire, or otherwise positively secure the rim from disengaging.
- Tires shall be aired with lock ring facing the ground.
- Tires with multi-piece rims shall be changed only by trained personnel in facilities with approved tools and equipment.
- Ether shall not be used while airing tires.
- Employees engaged in servicing truck and equipment tires shall be trained in proper safety procedures in accordance with the manufacture's guidelines.

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Machine Guarding

Caution: Employees shall not bypass any safety guards, interlocks, or other safety features. Guards shall not be removed.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions for machine guarding:

- All open or exposed belts, pulleys, sprockets, shafts, couplings, flywheels, drive chains, or similar items, located within 7 feet of the floor or ground shall be guarded.

- All points of operation shall be guarded.

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Grease Pits

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions:

- Grease pits shall have a protective cover or removable type of 42-inch guardrail and 21-inch mid-rail.

  Note: **SHA-408** details fall protection procedures and guidelines.

- A positive means for stopping travel of vehicles shall be provided.

- When grease pits are large enough for bodily entry, they may be considered permit-required confined spaces (**SHA-406-5**).

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Subject

Inspection Lights (Drop Cord Lights)

GENERAL OPERATIONS & PRECAUTIONS

Employees shall comply with the following safety precautions when working with inspection lights (drop cord lights):

- Extension cords shall be:
  - Heavy duty, three-wire type, design-rated for hard or extra-hard usage (such as, types S, ST, and SO)
  - Protected by a ground fault circuit interrupter (GFCI)
  - Approved by Underwriter Laboratories
- Cord plug ends shall be tightly closed.
- Only trained, qualified, and authorized persons shall repair electric equipment.
- Workspaces and walkways shall be kept clear of cords.
- Droplights shall be of the approved grounded type that does not have means to attach an electrical tool.
- Only listed, labeled, or certified equipment shall be installed and used in accordance with manufacturers' instructions.

PROHIBITED

In order to prevent electrical shock or fires, employees shall not use the following:

- Cords with plug ends that have the ground prong removed
- Temporary cords in place of permanent wiring
- Worn, spliced, repaired, or frayed cords
- Extension cords and droplight cords fastened with staples, hung from nails, or suspended by wire
- Flexible cords fed through wall holes

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Subject

Paint Spraying

REFERENCES

SHA-404, *Workplace Risk Assessment & Prevention, Personal Protective Equipment*
SHA-406-1, *Job Environment, Respiratory Protection*
SHA-500, *Personal Protective Equipment (PPE)*

GENERAL OPERATIONS & PRECAUTIONS

Most paints can be worked with safely when proper procedures are followed during the painting, cutting, heating, or welding of materials coated with paint. Therefore, employees shall incorporate the following procedures and precautions when involved in paint spraying operations:

- Paint spraying shall only take place in designated booths or areas.
- Employees not assigned to paint/coating operations shall take appropriate measures to avoid these areas.
- Employees who have a potential for exposure and overexposure must be protected by engineering controls, proper work practices, or appropriate personal protective equipment.
- Adequate ventilation shall be provided for employees exposed to various paints, including polyurethane, epoxy, waterborne and alkyd-based coatings (including deck sealers and sidewalk sealers) to minimize fume and vapor exposure.
- Employees must follow respiratory protection guidelines before using anything other than an aerosol spray can.

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Subject	Flammable Liquids & Gases

Caution: All sources of ignition are prohibited in areas where flammables are stored, handled, or processed.

REFERENCES

29 CFR 1926.155(I)
SHA- 409, *Hazard Communication Standard (Workplace Chemicals)*

DEFINITION

Safety can – "an approved closed container, of not more than 5 gallons capacity, having a flash arresting screen, spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure." [29 CFR 1926.155(I)]

ADMINISTRATIVE RESPONSIBILITIES

Signs must be prominently posted as follows:

- "WARNING" and "NO SMOKING" signs must be posted in areas where flammables are stored, handled, or processed.
- Storage cabinets containing flammables in excess of 25 gallons shall be posted with a sign that reads, "FLAMMABLE—NO SMOKING WITHIN 25 FEET".

Approved fire extinguishers should be conspicuously placed and marked in any area where flammables are stored, handled, or used.

STORAGE GUIDELINES

All storage of flammable liquids and gases should be in accordance with local, state, and federal laws, including but not limited to the following:

- Storage tanks should be equipped with proper relief vents.

  Relief vents should not be located close to any open flame, heating apparatus, or any source of ignition.

- Flammable liquids or lubricating oils stored indoors in drums, cans, or other containers, are to be protected from any ignition source and segregated in a well-ventilated fireproof room or separate building whenever possible.

STORAGE GUIDELINES (CONT.)

- Gasoline should never be stored in vehicle trunk compartments.
- Flammables and combustibles unnecessary for operations shall not be stored inside buildings or in proximity to spark-producing operations.
- Flammables in excess of 25 gallons shall be stored in an approved metal cabinet posted with, "FLAMMABLE—NO SMOKING WITHIN 25 FEET".

TRANSPORTATION GUIDELINES

Employees shall incorporate the following procedures and precautions when transporting flammable liquids and gases:

- Only approved, sealed containers are to be used for the transportation of flammable liquids.
- Open vessels shall not be used to transport flammable liquids.
- Sealed barrels, cans or vessels containing flammable liquids shall be secured and chocked in the transporting vehicle before moving.
- Open lights (such as lanterns) are not to be used on equipment transporting any flammable liquid.
- Extra or emergency gasoline (or other flammable liquids) must be carried in approved, red, plainly marked, safety cans with a capacity of not more than 5 gallons.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions to ensure the safe handling and use of flammable liquids and gases:

- Refueling of any type of equipment, trucks, or passenger cars while the motor is running is strictly prohibited.
- All tanks, hoses, and containers are to be in metallic contact while flammable liquids are being poured.
- "Buck-eye" safety nozzles, or their equivalent, must be used for dispensing gasoline on hand or power-driven pumps.
- Flashlights and portable lamps used in connection with the handling of flammables should be flash-proof, insulated, and approved.

GENERAL OPERATIONS & PRECAUTIONS (CONT.)

- All rooms, buildings, and enclosures where flammables are handled should be well-ventilated.

- Flammables should never be used as cleaning agents.

- Prior to filling, tanks should always be gauged to avoid the danger of an overflow.

- Welding, cutting, riveting, or other work involving ignition should not be performed on any storage tank which has previously contained flammables until such tank has been completely filled to the top with water.

- Accumulations of rust or scale on a tank which contains or has contained flammable liquids should be removed without the use of sparking tools. Wooden mallets may be used.

- Any spills of flammables should be cleaned up immediately, particularly in the vicinity of permanent gas and fuel pumps. Rags used in cleanup can be very susceptible to spontaneous combustion and should be stored in approved safety cans or a safe location.

  Note: Most biodegradable solvents have a relatively low flash/burn temperature (140 to 200 degrees Fahrenheit). Use caution if around open flames.

- Flammable liquids must never be placed in glass or plastic containers.

- Quantities of flammables **one gallon or less** may be dispensed from the original container or an approved metal safety can.

  Quantities of flammables **in excess of one gallon** shall be dispensed from approved safety cans unless the flammable is extremely hard to pour, in which case the original shipping container may be used.

- All safety cans shall be labeled in accordance with requirements in **SHA-409**.

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Chapter
GARAGE & SHOP SAFETY

Subject
Electrical Saws

REFERENCES

SHA-407, *Electrical Safety*

Note: For general procedures and precautions when working with chainsaws or pole saws, see **SHA-517**.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following general procedures and precautions when working with any type electrical saw:

- All exposed belt pulleys and other parts with in-running nip points shall be adequately guarded when located within 7 feet of the floor.
- All electrical saws shall be grounded and have the "on-off" power source located within easy reach of operator.
- No adjustments shall be made to power saws while they are operating.
- Exhaust systems shall be provided where tests have indicated the need.
- Housekeeping around power saws is of utmost importance. Therefore, loose sawdust shall be swept as often as necessary.
- Follow all manufacturer guidelines.

SPECIFIC SAW OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions when working with the following types of electric saws:

Hand-Fed Crosscut Table Saws

- Saw blades shall be guarded by a hood that will ride the stock as it is being cut.
- A spreader shall be provided behind the saw blade to prevent the stock from kicking back.
- Anti-kickback fingers shall be mounted on the hood guard and not on the spreader.

SPECIFIC SAW OPERATIONS & PRECAUTIONS (CONT.)

Swing Cutoff Saws

- Saw shall be fitted with a hood or guard that completely encloses the upper half of the saw, arbor end, and point of operation at all positions of the saw.
- The guard shall drop on top of and remain in contact with the material being cut.
- Limit chains or other equally effective means shall be provided to prevent the saw from swinging beyond the front or back edges of table.
- A counterweight or other device shall be provided that will automatically return the saw to the rear of the table.

Band Saws

- The saw blade shall be guarded as closely to the point of operation as possible.
- The guard shall encase wheels and all unused parts of the blade.

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GARAGE & SHOP SAFETY

Subject

Mechanical & Natural Ventilation

MECHANICAL Facilities equipped with mechanical ventilation shall use the exhaust attached to equipment for carbon monoxide removal.

NATURAL Facilities using natural ventilation (open doors or windows) shall be evaluated upon request from the Secretary's Office of Safety.

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Chapter
GARAGE & SHOP SAFETY

Subject
Hand Tools

GENERAL OPERATIONS & PRECAUTIONS

Employees shall abide by the following procedures and safety precautions when working with hand tools:

- Only tools that are in good condition shall be used. Defective tools shall not be issued or kept in storage with usable tools (**SHA-411**).
- Cracked and split handles shall be replaced and not taped.
- A dedicated storage space shall be provided on the job, in the yard, or inside buildings for proper storage of tools.
- Tools shall be put in proper storage when not in use so as not to constitute a hazard.
- Tools should be used in accordance with manufacturers' guidelines.
- Wear appropriate hand protection and other PPE that may be required.
- For electrically rated tools, see **SHA 407**.

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Chapter
GARAGE & SHOP SAFETY

Subject
Lift / Hoisting Equipment

REFERENCES 29 CFR 1926.753 and 29 CFR 1926.1431

DEFINITION *Lift/hoisting equipment* – Equipment with a maximum lifting capacity exceeding one ton that is capable of raising an item more than 15 feet (5 meters) high and has the ability to swing or rotate a boom. This includes a large excavator with a boom, as well as a crane, derrick, gin poles, and gantry hoist systems.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions when working with lift/hoisting equipment:

Caution: Employees shall not stand in the area immediately around lift equipment or under the object being lifted.

- Proper safety warning devices (such as gating, cones, fencing, blocking signs) shall be used to alert personnel to possible falling objects, swinging or rotating arc paths, and cable breakage.
- In addition to manufacturer-installed safety supports, employees shall use dump locks and jack stands when working under raised truck beds.
- Employees shall never work beneath unsupported, suspended loads.

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Chapter
GARAGE & SHOP SAFETY

Subject
Emergency Shower & Eye Wash

REFERENCES 29 CFR 1910.151(c); 803 KAR 2:310(4); ANSI/ISEA Z358.1-2014, *American National Standard for Emergency Eyewash and Shower Equipment*

ADMINISTRATIVE RESPONSIBILITIES

Where the eyes or body of any person may be exposed to injurious corrosive material, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use in accordance with ANSI/ISEA Z358.1-2014, *American National Standard for Emergency Eyewash and Shower Equipment*.

It is the installer's and site supervisor's responsibility to ensure, and safety personnel should confirm, that the shower or eyewash station is highly visible, accessible, and takes no more than 10 seconds (55 feet) to reach.

The site supervisor or designee shall ensure that the eye wash station is kept clean and free from clutter, with clear access.

Safety personnel shall:

- Confirm that each emergency shower and eye wash station is kept clean and free from clutter, with clear access.
- Conduct monthly inspection and test, coordinate annual service or maintenance as required.
- Communicate any deficiencies observed to the site supervisor to be corrected.

ANSI/ISEA FACILITY STANDARDS

Emergency shower and eyewash facilities shall comply with the provisions of ANSI/ISEA Z358.1-2014, *American National Standard for Emergency Eyewash and Shower Equipment*, which is incorporated by reference, with the following exceptions:

- Facility Usage Alarm and Testing
  - If a person is visibly or audibly separated from coworkers, an audible or visible alarm shall activate to alert appropriate personnel when the unit is in use, or in the alternative, a two-way communication device shall be used.

ANSI/ISEA
FACILITY STANDARDS
(CONT.)

- The alarm shall continue to sound until the unit is no longer in use.
- Facilities shall be tested monthly according to the standard.

➢ Water Temperature

Water delivered by the emergency safety equipment should be tepid, between 16–38°C (60–100°F).

- At temperatures above 38°C (100°F), there is the added danger of scalding and increased absorption of harmful chemicals into the skin.
- Prolonged exposure to water below 16°C (60°F) increases the risk of thermal shock or hypothermia and prevents the casualty using the shower to decontaminate effectively for the full 15 minutes.

Note: There are certain circumstances in which a facility safety/health advisor should be consulted for optimum temperature. Contact the Secretary's Office of Safety if there are any questions or concerns regarding water temperature.

➢ Location

- Emergency safety equipment should be installed within 10 seconds reach and on the same level as work location (not requiring the employee to travel up or down stairs).
- Shower and eyewash facilities must be situated in a prominent, clearly visible, well-lit, obstruction-free area.

➢ Water Flow

- Eye wash stations need to be sealed cartridge style, bottle or connected to a plumbing source.
- Emergency safety showers should deliver a minimum of 75.7 liters (20 US gallons) per minute of potable water for up to 15 minutes in the required spray pattern at a velocity low enough to be non-injurious to the user.

➢ Operation

- Equipment must be both accessible and easy to operate, even if the victim has impaired vision.
- Both emergency safety showers and eyewashes must be designed so that the valves remain open (flushing flow remains on) without the use of the operator's hands until intentionally closed.
- The control valve must be simple to operate and go from 'off' to 'on' in 1 second or less.

ANSI/ISEA
FACILITY STANDARDS
(CONT.)

- Maintenance

  Emergency safety equipment must be visually inspected and activated weekly (as well as an annual service) to guarantee reliable and effective operation and conformance with the standard.

- Training

  Personnel who may be exposed to hazardous materials should be instructed on the safe and proper use of the emergency shower and eye wash facilities, and be advised of facility locations.

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Chapter

GARAGE & SHOP SAFETY

Subject

Pressure Washers

Caution: Pressure washers must be used with extreme caution as the water is under high pressure and moves with enough force to damage eyes and abrade skin.

GENERAL OPERATIONS & PRECAUTIONS

Pressure washers are used to clean equipment, materials, and work areas on the job. Employees shall incorporate the following procedures and precautions when operating pressure washers:

- Employees should only operate pressure washers in well-ventilated areas.
- Prior to beginning work, employees should identify the unit's safety stickers, read the operator's manual, and follow the manufacturer's instructions for safe use, maintenance, and storage.
- Employee's may also consult the Secretary's Office of Safety (SOS) pressure washer safety checklist prior to use (**Exhibit 9035**).

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Chapter

LABORATORY & MATERIALS TESTING

Subject

Hazardous Chemicals

REFERENCES

29 CFR 1910.1450

ADMINISTRATIVE RESPONSIBILITIES

The following written plans shall be developed and implemented for each applicable laboratory facility:

- Chemical hygiene plan in accordance with 29 CFR 1910.1450
- Hazard communication plan

Safety Data Sheets (SDS) for chemicals being handled shall be available at each facility. Supervisors shall review SDS with all affected employees (**SHA-409**).

Emergency eye wash stations or showers shall be:

- Located in work areas where corrosive chemicals are utilized
- Inspected monthly
- Maintained in good working order (**SHA-1021**)

Fully stocked first-aid kits shall be readily available for all laboratory employees; at least one person on-site in every laboratory shall be certified in first aid.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions when working with hazardous chemicals:

All chemical containers shall be labeled as to their content.

- Proper ventilation shall be used at all times.
- Personal protective equipment identified in the SDS shall be worn as required.
- Proper cleanup methods shall be utilized according to the chemical's SDS.

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Chapter

LABORATORY & MATERIALS TESTING

Subject

Fire & Explosion Protection

ADMINISTRATIVE RESPONSIBILITIES

The supervisor shall provide all employees with adequate knowledge and training concerning storage compatibility and safe handling practices (**SHA-409** and **SHA-1016**).

ABC fire extinguishers shall be available and compliant with **SHA-206-4**.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions when working with potentially flammable and explosive chemicals:

- Chemicals that are incompatible with one another shall be stored separately.
- Flammables with low flash points shall be handled with extreme care. The vapor shall not be allowed to come into contact with a source of ignition.
- Keep flammable and explosive materials away from potential ignition sources.
- Non-sparking tools shall be used to open drums and other containers of flammable materials (**SHA-1016**).

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Chapter	LIFTING
Subject	Overview

PURPOSE & SCOPE

Lifting heavy items is one of the leading causes of injury in the workplace. Overexertion and cumulative trauma are the biggest factors in lifting-related injuries. For example, lifting a 25-pound box from the floor requires about 700 pounds of back muscle force, even when you bend your knees.

In order to mitigate the risk of employee injury due to overexertion and improper lifting, the Kentucky Transportation Cabinet (KYTC) Secretary's Office of Safety (SOS) will provide information as needed on ergonomic lifting techniques, appropriate use of mechanical aids in lifting and moving large loads, and specific training for employees at high risk of injury.

GENERAL PRECAUTIONS

Below are some tips that can help protect an employee's back when he or she lifts heavy objects:

- Design and construct work and storage surfaces at the appropriate level to encourage proper work posture and discourage stooping, bending, stretching, turning, and reaching.
- Avoid storing heavy materials overhead when at all possible. Storage structures shall be secured and properly loaded to avoid tipping over or falling.
- Before lifting, an employee should pause to consider the task's physical demands by examining the load's weight; checking for sharp corners, slippery spots, or other potential hazards; and evaluating ways to mitigate any risk. (See **SHA-1202** for step-by-step, ergonomic technique.)
- **DO NOT** lift and carry any load that cannot be seen over or around, or that requires twisting of the body or spine.
- Be aware of personal lifting weight limits and do not exceed them.

GENERAL PRECAUTIONS (CONT.)

- When a load cannot be safely handled by one person because of its excessive weight, bulk, or awkward shape:
  - Ask for help.
  - If possible, divide the load to make it lighter or more manageable to carry.

- It is recommended that employees either request assistance or use mechanical devices when lifting loads greater than 20 pounds, such as hand trucks, dollies, hoists, conveyors, carts, powered industrial trucks, and other mechanical devices.

- Know the load's destination and make sure that it and the path of travel are both free of obstructions.

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Chapter	LIFTING
Subject	Ergonomic Techniques

PURPOSE & SCOPE

To avoid injury, employees must use the ergonomic principles and safe lifting techniques in this policy when lifting or handling heavy objects.

PRE-LIFT ASSESSMENT

Prior to lifting an object:

- Evaluate the task and your physical capabilities.
- Assess the size, shape, and weight of the object to determine if it can be lifted safely.
- Check the area for potential slip/trip/fall hazards or other conditions that could contribute to a loss of stability when transporting an object.

LIFTING & MOVING PROCEDURES

After completing the pre-lift assessment and taking any measures to mitigate risk of injury, it is recommended that the employee use the following ergonomic technique to lift and move the object:

- Stand close to the object with your feet spread about shoulder-width apart, and one foot positioned slightly in front of the other for balance.

- Squat down, bending at the hips and knees (not the waist) while keeping your back straight.

  Note: "Straight" does not mean exactly vertical, but refers to the natural curve of your spine. A straight back keeps the spine, back muscles, and internal organs of the body in correct alignment.

Fig. 13 Lifting Example 1

- Draw the load close to the body.

- With arms and elbows tucked into the side of the body, grip the object firmly with both hands. Use the whole hand, not just fingertips.

LIFTING & MOVING PROCEDURES (CONT.)

- Tuck chin so neck and head continue the straight line of the back.

Fig. 14 Lifting Example 2

- Begin lifting slowly with the legs (not the back) by straightening them, while keeping your feet firmly planted. Never twist your body during this step.

- Once the lift is complete, keep the load as close to the body as possible. As a load's center of gravity moves away from the body, stress to the lumbar region of the back dramatically increases.

Fig. 15 Lifting Example 3

- If it is necessary to turn while carrying the load, the employee shall turn his or her entire body by using the feet – not by twisting the torso.

- To place the load below waist level, follow the same procedures in reverse order.

Remember: Keep your back as straight as possible, and bend at the knees and hips.

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Chapter

OFFICE SAFETY

Subject

Emergency Plans

REQUIREMENTS

Pursuant to 29 CFR 1910.38, each Kentucky Transportation Cabinet (KYTC) facility shall have a written emergency action plan that is readily available for each employee's review.

The purpose of the Emergency Action Plan is to educate, prepare, and serve as a reference to employees in the event of an emergency situation. (**SHA-600**)

Supervisors or designated person(s) shall make employees aware of the contents of the facility's emergency plan and procedures, and how it applies to them (such as specific evacuation routes, emergency contacts, and office safety personnel).

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Chapter
OFFICE SAFETY

Subject
Housekeeping

GENERAL PRECAUTIONS

Employees shall observe the following safe housekeeping precautions:

- Keep work areas clean and orderly.
- Aisles, corridors, and stairways must remain clear at all times.
- Always stack material properly so that it cannot fall or be easily knocked over.
- Windowsills, ledges, and tops of cabinets shall be kept free of heavy objects.
- Spilled liquids shall be cleaned up immediately. Notify custodians or building maintenance staff to assist in clean up as needed.
- Trip hazards, such as, cords in walkways, faulty tread or mats, loose flooring, raised edgings, and other unsafe conditions, shall be reported to the appropriate person(s) and corrected immediately.

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Chapter
OFFICE SAFETY

Subject
Proper Use of Office Equipment & Furniture

GENERAL PRECAUTIONS

Employees shall observe the following safety precautions when using office equipment and furniture:

- Equipment and furniture shall only be utilized for its intended purpose.
- Bottom drawers of file cabinets should carry the heaviest loads. Open and close file drawers by using handles. Only one file drawer at a time should be opened, and all desk and file drawers shall be closed when not in use.
- Sharp objects shall be properly stored and contained where they are readily visible.
- Chairs, desks, tables, and cabinets shall not be used for climbing or reaching overhead objects. See **SHA-408-2** for ladder safety.
- Keep fingers away from point of operation of tools such as staplers, punches, and paper cutters; keep all machine safety guards in locked position when not in use.
- Aisleways shall be kept clear of obstructions and items that could pose a slip/trip hazard or restrict egress.
- Flexible (extension) cords shall be properly contained where utilized. Extension cords shall not run through doorways or openings in walls, ceilings, and floors.
- Extension cords are intended for temporary installations and shall not be used as permanent wiring. GFCI type extension cords shall be equipped with grounding prongs as designed.

  Caution: Per 815 KAR 7:120 and 815 KAR 10:060, it is a fire code violation to use extension cords or surge protectors to plug in personal appliances including, but not limited to, coffeemakers, microwaves, and refrigerators.

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Chapter	OFFICE SAFETY
Subject	Electrical Items

GENERAL PRECAUTIONS

Employees shall observe the following safety precautions when working with electrical items:

- Machines with belts, gears, pulleys, or rotating parts shall be properly guarded.

  Caution: DO NOT clean machinery while operating. Notify office building maintenance staff as needed.

- Electrical cords shall be kept in good repair. Cords with frayed insulation or broken ground prongs shall be replaced. Plugs shall be totally enclosed to prevent shock. Extension cords shall be used only in accordance with the rating on the plug.

  Caution: Per 815 KAR 7:120 and 815 KAR 10:060, it is a fire code violation to use extension cords or surge protectors to plug in personal appliances including, but not limited to, coffeemakers, microwaves, and refrigerators.

- Only trained and authorized personnel shall attempt to repair or adjust electrical equipment.

- **SHA-407** provides additional information on electrical safety.

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Chapter

PORTABLE POWER TOOLS

Subject

Overview

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and safety precautions when working with portable power tools:

- Only Kentucky Transportation Cabinet (KYTC)-owned tools shall be used for KYTC operations.
- All portable power tools shall be used in accordance with the manufacturer's recommended operating procedures.
- No portable electric tool shall be used if the operator must stand or be located near water.
- When using any portable power tool, operators shall wear all required personal protective equipment.
- All tool guards shall be used.
- Gasoline- or diesel-fueled equipment shall only be refueled after engines have been shut down and after equipment has cooled down. Manufacturer's recommended procedure for refueling shall be followed where one is specified.
- All portable power tools must be checked by the operator before and after each use.
- Any portable power tool shall be removed from service and red-tagged if any part or safety feature is found not working or missing (**SHA-411**).

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Chapter
PORTABLE POWER TOOLS

Subject
Electrical Tools

REFERENCES

SHA 407-1 provides additional information on electrical safety. Employees shall always follow all manufacturer guidelines.

GROUNDING

All hand-held, portable electrical tools shall be grounded. The tool is grounded when **one** of the following four criteria is met:

- The tool has an approved, double-insulated system.
- The tool has a three-wire and three-prong system.
- The wall receptacle has wiring in conduit, or the wiring is bonded to a grounded structure.
- The adapter has the grounding pigtail wire affixed to the wall receptacle faceplate screw.

CORDS

Employees shall observe the following safety precautions related to electrical cords:

- Wiring on plugs shall be covered with approved insulated discs.
- Cords shall be:
  - Replaced when insulation is worn or frayed
  - Cords shall be protected from grease and oil spills

  Caution: Cords shall not be left in walkways creating a tripping hazard.

- Extension cords (drop cords) shall be:
  - Equipped with wiring equal to the wiring of the tool being used
  - The grounded type when used with portable electrical tools
  - Protected by GFCIs
  - The heavy duty, three-wire type and must be design-rated for hard or extra-hard usage (such as types S, ST, and SO)
  - Approved by Underwriter Laboratories

DRILLS

Employees shall observe the following safety precautions related to electrical drills:

- Electrical drills shall have a constant pressure on-off switch and may have a lock-on control that can be turned off with the same finger or fingers that turned it on.
- When drilling loose pieces of material, the item being worked on shall be clamped in a vice or otherwise secured to prevent it from spinning.

CIRCULAR SAWS

Electrical circular saws shall be equipped with the following:

- A functional constant pressure switch that shuts off power when pressure is released
- Guards above and below the base plate or shoe.
- A bottom guard that moves freely as the stock is being cut and that automatically and instantly returns to the covering position when the saw is withdrawn from the work.

  Caution: Operators shall not remove or block the bottom guard in the open position.

GRINDERS & DISC SANDERS

Employees shall observe the following safety precautions related to grinders and disc sanders:

- Grinders with abrasive wheels **greater than** 2 inches in diameter shall have a protective hood or guard that covers at least the top half of the abrasive wheel (180-degree coverage).
- Grinders with abrasive wheels and discs **less than** 2 inches in diameter shall have "on-off" switches.
- Grinders and disc sanders with abrasive wheels and discs **greater than** 2 inches in diameter shall be equipped with a momentary contact "on-off" switch. The switch may be locked in the "on" position if the same finger or fingers can be used to turn it off.

ABRASIVE CUT-OFF SAWS

Employees shall observe the following safety precautions when operating portable, abrasive cut-off saws:

- Be aware of surroundings and keep all other personnel away from operation.
- Wear all necessary personal protective equipment.
- Store extra fuel in labeled, approved safety cans only.

Caution: Operators shall not remove shields covering the cutting blade.

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PORTABLE POWER TOOLS

Subject

Portable Air Compressors

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and safety precautions when operating portable air compressors:

- Follow all manufacturer guidelines.

  Caution: Refer to the manufacturer's guidelines for specific maintenance procedures, including inspection criteria required daily or before each use. Consult with your on-shift mechanics, and request review of the JSA from your supervisor as needed.

- Portable air compressors shall have safety chains affixed to the tongue hitch for use with the vehicle towing the compressor.

- All compressed air-line couplings shall have a safety wire secured through the matching holes from one coupling to another to prevent separation of hose sections while under pressure.

- Personnel using compressed air for jackhammering, pavement breaking, and other similar activities, shall wear approved protective eye shields and shall follow the silica exposure control plan (**SHA-406-2**).

- Hearing protection is required for personnel operating jackhammers and other persons within 25 feet of the air compressor, or as indicated by sound meter readings (**SHA-510**).

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Chapter

PORTABLE POWER TOOLS

Subject

Air-Powered Tools

GENERAL PRECAUTION

Employees working with any type of air-powered tool shall follow all manufacturer operating procedures and safety guidelines.

CLEANING WITH AIR

Employees shall observe the following precautions when cleaning with compressed air:

- Compressed air pressure shall be reduced to 30 psi when used for cleaning purposes.
- Approved eye protection and face shield shall be worn by all employees exposed to flying particles (**SHA-500**).

Caution: Compressed air shall not be used for cleaning clothes and parts of the body.

AIR HOSES

All sections of air hoses exceeding one-half inch diameter that are used with air compressors shall have couplings secured by a safety wire affixed in provided holes and shall be inspected prior to each use.

PORTABLE GRINDERS

Air-powered portable grinders shall have the same guarding as electrical portable grinders (**SHA-1006**).

JACKHAMMERS & PAVEMENT BREAKERS

Safety clips or retainers shall be provided to prevent attachments, such as bits, from being accidentally withdrawn or expelled. Personnel shall exercise particular care in positioning themselves in relation to these types of tools, making sure their feet are shoulder-width apart and they have their body square to the tool. Approved ear and eye protection is required during operation (**SHA-500**).

SANDBLASTERS

Only authorized and trained personnel shall operate sandblasters.

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Chapter

PORTABLE POWER TOOLS

Subject

Portable Electric Generators

Caution: The three primary safety concerns when using a generator are accidental carbon monoxide poisoning from engine exhaust, electric shock, and fire. **Although carbon monoxide cannot be seen and has no detectible scent, it can rapidly lead to full incapacitation or death.** Therefore, even if no scent is detected, employees may still be exposed to dangerous levels of carbon monoxide. Employees who report feeling sick, dizzy, or weak while using a generator should move to fresh air immediately. Do not delay.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and safety precautions when using portable electric generators:

- Manufacturer guidelines shall be followed.
- The motor shall be bonded to the stand so that a good ground is evident.
- A heavy-duty copper wire shall be attached to the generator stand and attached to an appropriately-sized ground rod driven into the ground.
- When used with a portable electric generator, all portable electric tools (unless double-insulated) shall be the grounded type.
- All portable electric generators shall be:
  - Equipped with ground fault circuit interrupters
  - Used in well-ventilated areas

Caution: Portable electric generators shall not be plugged into a wall outlet. Known as "backfeeding," this practice puts utility workers and others at risk of electrocution.

ADDITIONAL INFORMATION

SHA-407 provides information on electrical safety.

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Chapter

PORTABLE POWER TOOLS

Subject

Weedeaters

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and safety precautions when using weedeaters:

- All manufacturer guidelines for operation, maintenance, and inspection shall be followed.
- Always consult the owner's manual first if operating or safety information is needed.
- Shields covering the cutting blade shall not be removed.
- Operators shall be aware of surroundings and keep all other personnel away from weedeating operations.
- Extra fuel shall be stored only in labeled, approved safety cans.
- Operators shall wear all necessary personal protective equipment.
- Before operating, always check the area for slip/trip/fall hazards, as well as for debris that can become projectiles.

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Chapter

PORTABLE POWER TOOLS

Subject

Lawn Mowers

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and safety precautions when using lawn mowers:

- All manufacturer guidelines for operation, maintenance, and inspection shall be followed.
- Always consult the owner's manual first if operating or safety information is needed.
- Mower safety bar shall not be removed or lowered while the mower is in operation.
- Operators shall wear all necessary personal protective equipment per the manufacturer's guidelines (**SHA-500**).
- Before operating, always check the area for slip/trip/fall hazards, as well as for debris that can become projectiles.

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ADMINISTRATION GUIDE

Chapter	TRAFFIC CONTROL
Subject	General Information

REFERENCES

29 CFR 1910.151 and 29 CFR 1926.50; *Manual on Uniform Traffic Control Devices (*MUTCD)

PURPOSE & SCOPE

Traffic control is one of the most important functions the Kentucky Transportation Cabinet (KYTC) can provide to its employees and the traveling public. Reasonable precautions shall be taken to prevent accidents caused by construction, preconstruction, or maintenance operations. (See also **TO-808**.)

While it is impossible to describe in this manual the traffic control methods for all jobs performed by the Cabinet, all traffic control methods used shall comply with the *Manual on Uniform Traffic Control Devices* (MUTCD), approved KYTC flagger training courses, or KYTC *Standard Drawings*.

SUPERVISOR RESPONSIBILITIES

It is the supervisor's responsibility to oversee correct jobsite and traffic control procedures as outlined by the Secretary's Office of Safety, MUTCD, and an approved KYTC statewide flagger training course. Supervisors are responsible for the following:

- A fully stocked first-aid kit and a person adequately trained to render first aid shall be present on all jobsites for the duration of the job (29 CFR 1910.151, 1926.50; **SHA-702**).

- Supervisors shall complete TC 25-163, *Job Briefing*, prior to setting up and implementing a traffic control plan (**Exhibit 9002**). KYTC *Standard Drawings* may be used as long as they exceed the minimum requirements of the MUTCD and are more detailed than the minimum drawings of the MUTCD.

- In an emergency situation, a temporary traffic control plan shall be developed in accordance with MUTCD and KYTC-specific policies for all job sites according to the nature, location, and duration of work; type of roadway and speed of traffic; and potential hazards. (MUTCD 6A.01, 6B.01, 6C.01, 6C.02, 6C.03)

SUPERVISOR RESPONSIBILITIES (CONT.)

- In hazardous situations, state or local law enforcement assistance may be requested.

- As soon as work is completed and traffic control devices are no longer needed, they shall be removed.

- On jobs requiring channelizing devices, the following sequence for set-up shall be followed:

  1. Signs
  2. Flaggers/Arrow Panels
  3. Cones/Other Channelizing Devices
  4. Crew and Equipment

  Remove the devices in the opposite order of installation by starting with the devices closest to the work area and continue away from the area.

  Caution: Keep all warning signs and arrow panels in place during pickup. Use flashing arrow panels, high-level warning devices, flaggers, or flashing emergency lights to protect the workers who are removing the devices.

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Chapter	TRAFFIC CONTROL
Subject	Signs, Cones, & Other Traffic Control Devices

REFERENCES *Manual on Uniform Traffic Control Devices,* MUTCD

GENERAL DEVICE REQUIREMENTS

Job-site supervisors and safety personnel should ensure that traffic control devices meet the following criteria:

- *MUTCD Conformity* – All signs, cones, drums, and other traffic control devices shall conform to MUTCD and other applicable standard requirements for size, shape, color, planned use, and retro-reflectiveness.
- *Warning Signs* – All warning signs shall have black lettering on an orange background. Warning signs used on four-lane roads and in urban areas shall be 48-inch orange, diamond-shaped sign; otherwise, a 36-inch orange, diamond-shaped sign shall be used unless lack of adequate shouldering would cause the sign to be located partially in the roadway. Signs should be properly maintained for cleanliness, visibility, and correct positioning. Signs that have lost significant legibility should be promptly replaced.
- *Lead Sign* – The lead sign on each end of all jobsites shall have either a traffic cone placed next to the sign or a red flag attached to the sign. The bottom portion of all warning signs shall be a minimum of 12 inches from the ground.
- *Traffic Cones and Drums* – Cones shall be a minimum of 28 inches in height, orange, and made of a material that can be struck without causing damage to the impacting vehicle. Cones and drums shall be kept clean and bright for maximum target value.
- *Retroreflectorization* – For nighttime use, cones shall be retroreflectorized or equipped with lighting devices for maximum visibility. Cones 28 to 36 inches in height shall include a 6-inch wide, white band located 3 to 4 inches from the top of the cone, as well as an additional 4-inch wide, white band located approximately 2 inches below the 6-inch band.

GENERAL DEVICE REQUIREMENTS (CONT.)

Retroreflectorization of cones that are more than 36 inches in height shall be provided by horizontal, circumferential, alternating, orange and white retroreflective stripes that are 4 to 6 inches wide. Each cone shall have a minimum of two orange and two white stripes with the top stripe being orange. Any non-retroreflective spaces between the orange and white stripes shall not exceed 3 inches in width.

CONE/DRUM TAPER LENGTH

The first cone or drum shall be placed 840 feet from the actual jobsite and on the shoulder. The cones or drums shall taper from the shoulder gradually to the roadway center-line mark, up to and including the last piece of equipment or the last employee.

To determine taper lengths (L):

- For posted speeds (S) of **40 mph or less**, use: $L = \frac{WS^2}{60}$
- For posted speeds of **45 mph or more**, use: L = WS

Note: In the above equations, W = lane width.

For example, a road with a speed limit of 35 mph and a lane width of 12 feet would require a taper length of 245 feet, and a road with a speed limit of 65 mph with a lane width of 12 feet would require a taper length of 780 feet.

Cone or drum placement intervals are determined as follows:

- For posted speed limits of **55 mph or less**, there shall be a traffic cone positioned every 40 feet on the taper and center line of the tangent.

- For posted speed limits **greater than 55 mph** involving ~~on~~ multi-lane operations, cones or other channeling devices in the tangent may be placed at 80-foot intervals or less (**not tapers**) on the center line for lane closures.

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Chapter
TRAFFIC CONTROL

Subject
Hand-Signaling Devices

GENERAL USES

A number of hand-signaling devices such as STOP/SLOW paddles, lights, and red flags are used in controlling traffic through work zones.

The sign paddle bearing the clear message STOP/SLOW provides motorists with more positive guidance than flags and shall be the primary hand-signaling device.

Flag use shall be limited to emergency situations and middle flagger operations.

Note: If a flag is used in an emergency situation, it should be replaced with a STOP/SLOW paddle as soon as feasibly possible.

SUPERVISOR RESPONSIBILITIES

All hand-signaling devices shall be kept in good condition, clean, and legible. Any hand-signaling device found in poor condition shall be immediately replaced by the designated competent person.

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ADMINISTRATION GUIDE

Chapter	TRAFFIC CONTROL
Subject	Flaggers

REFERENCES

29 CFR 1926.32(f)
American National Standards Institute (ANSI)
International Safety Equipment Association (ISEA)

PURPOSE & SCOPE

Flaggers are provided at jobsites for the purpose of stopping traffic intermittently as necessitated by work progress and maintaining continuous traffic flow past the jobsite at reduced speeds to protect the work crew.

SUPERVISOR RESPONSIBILITIES

In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment. (**SHA-509**).

It is *strongly recommended* that new employees have 30 days of documented maintenance or highway work experience before supervisors assign them flagging duties.

CERTIFICATION

Before Kentucky Transportation Cabinet (KYTC) employees are allowed to engage in flagging procedures, they must:

- Successfully pass the KYTC course entitled *Traffic Control/Flagger Certification* (provided by KYTC employee safety personnel)
- Receive a valid KYTC Flagger Certification card.

Employees should participate in refresher training every two years thereafter, or more frequently if non-compliant flagger procedures are observed.

QUALIFICATIONS

Flaggers are responsible for human safety and the prevention of equipment and property damage.

Therefore, a flagger should possess the following qualifications:

- Up-to-date flagger certification
- Adequate physical condition
- Courteous but firm manner
- Neat appearance
- Sense of responsibility for the safety of the public and working crew

POSITIONING

Flaggers should be positioned standing on the shoulder of the road at a minimum of 50 feet away from all work vehicles and equipment. The flagger should be clearly visible at all times to approaching traffic for a distance of at least 500 feet to permit proper response by motorists to the flagging instructions. The flagger's protective garment shall be in color contrast with the surrounding background at all times. An escape route shall be planned in advance of flagging operations.

Flaggers shall not lean, sit, or lie on a vehicle or anything else during flagging operations.

EQUIPMENT

Required flagger equipment includes the following:

- ANSI 107-2004 Class lll-approved high-visibility apparel

  Retroreflective vests or other approved high-visibility (hi-vis) safety apparel (meeting the requirements of ISEA's "American National Standard for High-Visibility Safety Apparel," or equivalent revisions, and labeled ANSI 107-1999, or equivalent revisions; standard performance for Class 2, or 3 risk exposure) shall be worn by all employees working in traffic control flagging operations, within the right-of-way limits, on construction projects, or in any other area where they are potentially exposed to the risk of moving roadway traffic or equipment.

  For nighttime operations, a flashlight with red cone shall be used and high-visibility apparel shall be minimum Class III. Unless an emergency situation is present, illumination of nighttime flagger stations should not result in glare to the traveling public.

EQUIPMENT (CONT.)

- Rigid staff with a regulation STOP/SLOW paddle

  Sign paddles shall be at least 18 inches wide with letters at least 6 inches high. A rigid handle shall be provided. This combination sign may be fabricated from sheet metal or other semi-rigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border.

  When read at night, the STOP face shall be reflectorized red with white reflectorized letters and border, and the SLOW face shall be reflectorized orange with black letters and border.

  The optimum method of displaying a STOP or SLOW message is to place the STOP/SLOW paddle on a rigid staff that is tall enough that when the end of the staff is resting on the ground, the message is high enough to be seen by approaching or stopped traffic.

  Exception: The only exception to using a rigid staff with a regulation STOP/SLOW paddle is when an employee is engaged in an emergency situation, middle flagging operations, or at spot locations, at which time a regulation red flag may be used (**SHA-1503**).

  Regulation flags used during excepted situations shall be a minimum of 24 inches x 24 inches, made of a good grade of red material, and securely fastened to a staff approximately 3 feet in length. The free edge should be weighted to ensure that the flags will hang vertically, even in high winds. When utilized in nighttime operations, flags shall be retroreflectorized.

- Flagger certification card

- Communication devices

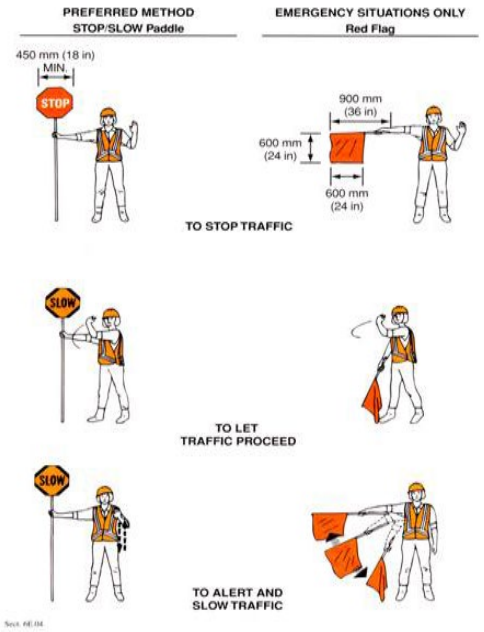
  Using KYTC-approved, two-way radios is the preferred method of communication between flaggers. The system shall be powerful enough for flaggers to clearly communicate without interference or fadeout and should be tested prior to use. FCC standards and proper radio etiquette shall be complied with at all times.

  Only KYTC-issued communication equipment shall be allowed. Flaggers shall not use cell phones, stereo headphones, video games, or other distracting electronic devices while flagging.

PROPER FLAGGING PROCEDURES

The following figure details proper flagging procedures to be utilized with both paddle and flag:

Figure 16. Flagging Procedures with Paddle and Flag



ADDITION OF MIDDLE FLAGGER

The middle flagger, when used, will be in charge and in control of traffic flow through the jobsite. When more than one middle flagger is used, one shall be designated as the leader.

A middle flagger should be used when:

- Two end flaggers cannot maintain line of sight or radio communications.
- Traffic may enter work zones between flagger stations.
- Carriage-type heavy equipment swings into an open travel lane or the path of motorists or pedestrians.

  Typically cranes, drotts, bantams, and similar equipment have a tail swing that can intrude into paths used by the public or workers. The tail swing radius shall be protected by barricades, cones, or a middle flagger.

  The carriage equipment operator shall not use two-way radios to eliminate use of a middle flagger. A middle flagger provides instant communication, coordinates traffic flow, recognizes an impending hazard, and responds to prevent the hazard.

MIDDLE FLAGGER PROCEDURES

Middle flaggers shall use the following procedures:

- *To stop traffic on the left:* The middle flagger shall hold the paddle or flag in the left hand and raise and point it in the direction of the end flagger on the left. The middle flagger shall maintain the paddle or flag in the left hand and use the right hand to motion traffic on the right through the jobsite.

- *To stop traffic on the right*: The middle flagger shall follow the same procedure as used for stopping traffic on the left, except the end flagger on the right will be signaled. The paddle or flag shall be in the right hand, and the left hand will be used to motion traffic on the left through the jobsite.

SIGNALIZED INTERSECTIONS

When flagging in the vicinity of signalized intersections, special consideration shall be given to traffic movements. The signal must either be turned off or set to all-red "flash" mode.

For KYTC-related operations, traffic should not be flagged while a signal is in full operation. Law enforcement or emergency personnel should be used to direct traffic in emergency situations.

MOBILE OPERATIONS

In a mobile operation when the flagger is moving with the operation, all signs associated with the flagger shall be moved ahead whenever work advances more than 2 miles from the first advance warning signs. The FLAGGER AHEAD sign must be within 500 feet of the flagger, and the flagger station must be visible from the sign.

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ADMINISTRATION GUIDE

Chapter	TRAFFIC CONTROL
Subject	Supplementary Traffic Control Equipment

REFERENCES 29 CFR 1926.32(f)

PURPOSE & SCOPE On certain job-sites, flaggers may be unable to see each other or be seen easily by oncoming traffic due to distance or terrain. In addition, the only effective way to prevent the risk of flaggers being exposed to traffic is to separate the flagger from the hazard. In such instances, supplementary traffic control equipment may be needed to ensure the safety of flaggers, work crews, and the travelling public.

PILOT TRUCK Pilot truck operations as part of a flagging operation are appropriate for long distance, alternating traffic needs to maintain driver speeds and to help guide traffic through the work site. Pilot car operators should be certified flaggers.

A pickup truck or a vehicle equipped with appropriate warning lights and a tailgate-mounted sign reading PILOT TRUCK—FOLLOW ME is required for pilot truck use. The sign shall not obscure vehicle taillights. Use of a pilot truck provides for smooth traffic flow when the end flaggers cannot observe each other, and may be used in light or moderate traffic flow situations.

The pilot truck will guide traffic stopped by the first flagger to the second flagger at the other end. Once the first flagger's traffic has left with the pilot truck, all other oncoming vehicles shall be stopped. After delivering traffic to the second flagger, the pilot truck shall then guide the second flagger's traffic back to the first flagger.

Equipment utilized on this type of jobsite shall, as much as possible, remain out of the open traffic lane.

Supervisors should determine who the pilot driver will be when conducting the job briefing, and discuss any special instructions at that time to ensure everyone understands their assignment and overall job expectations.

AUTOMATIC FLAGGER ASSISTANCE DEVICES (AFAD)

Automated Flagger Assistance Devices (AFADs) are remotely operated temporary traffic control equipment with red/yellow signal heads, and gate arms.

An AFAD is only to be used when there is a single lane of approaching traffic to control. AFADs shall never be used to control multiple lanes of traffic or to replace traffic signals. A certified flagger is required to operate the AFAD and must be in a central location to view each device, or be able to view at least one AFAD and the jobsite while remaining in communication with another flagger who is able to view the other AFAD.

AFADs are more visible that human flaggers, but less portable. When transporting AFADs, they may be towed in tandem or separately. When towed in tandem, the coupler reinforcement bar shall be installed and the tongue bar on the rear unit must be adjusted to the shortest length position.

Supervisors should note the following when positioning the devices:

- Advanced warning signage is required for AFADs. Replace the FLAGGER AHEAD sign with BE PREPARED TO STOP.
- AFAD units should be positioned on the shoulder of the road unless infeasible due to absence of space off the roadway. In these cases, the AFAD may be placed on the road, but should be located as far to the right as possible.
- AFADs may be left connected to the transporting truck for mobile or intermittently-moving work only.
- AFAD gate arms must extend at minimum to the middle of the lane to be controlled, but at no time should extend over the center line or far enough to impede opposing traffic.
- Neither the flagger, nor others, may sit in the truck while it is connected to the AFAD.
- Flaggers operating AFAD units are permitted to sit inside a vehicle while operating AFADs provided the vehicle is off the roadway and doing so does not impede their visual contact with AFADs.

AUTOMATIC FLAGGER ASSISTANCE DEVICES (AFAD) (CONT.)

- Flaggers must follow all PPE guidelines.

  Note: In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment. (**SHA-509**).

- The AFAD should be clearly visible at all times to approaching traffic for a distance of at least 500 feet to permit proper response by motorists to the flagging instructions.

  Note: If used at night, each device shall be illuminated to provide adequate visibility to the traveling public and the operator.

- All video downloaded from portable traffic control devices is subject to records retention statutes. Only download video to document incidents occurring within the work zone. For Maintenance operations, the incident must be reported by entry into the KYTC BOOTS safety management software system, and the related video must be attached to the BOOTS incident record as a file attachment for retention. For construction projects, all video downloaded will be maintained within the construction project file and maintained per the records retention schedule.

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Chapter	*Subject*
TRAFFIC CONTROL	Highway-Rail Grade Crossings

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD), Section 6G.18, Figure 6H-46, Chapter 8A.08; **SHA-1623**

SUPERVISOR RESPONSIBILITIES

Supervisors should seek early coordination with the railroad company or light rail transit agency prior to beginning work within or in the vicinity of highway-rail grade crossings.

GENERAL PRECAUTIONS

When grade crossings exist either within or in the vicinity of a temporary traffic control (TTC) zone, the implemented lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the tracks.

If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place. KYTC employees serving in this capacity shall be certified flaggers.

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Chapter	TRAFFIC CONTROL
Subject	Barricades

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD), Section 6F.63 and Figure 6F-7

USAGE

Barricades may be used as a part of traffic control to:

- Protect spot hazards.
- Close roadways and sidewalks.
- Provide additional protection to work areas.

Note: All channelizing devices shall be crashworthy.

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Chapter	TRAFFIC CONTROL
Subject	Incident Management Areas

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD), Chapter 6I, Figure 6I-1, Part 6

DEFINITIONS

- *Traffic incident* – An emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic. Examples include a stalled vehicle blocking a lane, a traffic crash blocking the traveled way, a hazardous material spill along a highway, and natural disasters such as floods and severe storm damage.

  Traffic incidents can be divided into three general classes of expected duration, each of which has unique traffic control characteristics and needs:

  - Major—More than 2 hours
  - Intermediate—30 minutes to 2 hours
  - Minor—Under 30 minutes

- *Traffic incident management area* – An area of a highway where temporary traffic controls (TTC) are installed, as authorized by a public authority or the official having jurisdiction of the roadway, in response to a road user incident, natural disaster, hazardous material spill, or other unplanned incident. It is a type of TTC zone and extends from the first warning device (such as a sign, light, or cone) to the last TTC device, or to a point where vehicles return to the original lane alignment and are clear of the incident.

PURPOSE OF TTC IN TRAFFIC INCIDENT MANAGEMENT AREA

The primary functions of TTC in a traffic incident management area are twofold:

- Inform road users of the incident.
- Provide guidance information on the path to follow through the incident area.

PURPOSE OF TTC IN TRAFFIC INCIDENT MANAGEMENT AREA (CONT.)

Alerting road users and establishing a well-defined path to guide road users through the incident area will protect those working at the incident scene and will aid in moving road users expeditiously past or around the traffic incident. The TTC will also reduce the likelihood of secondary traffic crashes and will preclude unnecessary use of the surrounding local road system.

In minor or intermediate duration incidents where full TTC equipment and manpower may not be available or feasible in the timeframe needed, the TTC may deviate from MUTCD requirements for scheduled work. However, when an incident's classification is elevated to major (either due to duration or extent), additional TTC should be implemented as soon as feasible and should approach MUTCD compliance if the incident continues beyond 2 hours.

Note: KYTC flaggers assigned to traffic incident management areas must be certified, regardless of incident class.

EMERGENCY CALL-OUTS

When an employee is called out to assist with an unscheduled event or emergency, the scene shall be assessed before the employee enters the roadway or path of traffic. If it is determined that two or more employees are needed to complete the task safely, the employee shall wait until assistance is available.

Caution: No employee shall enter multi-lanes or high-speed interstates without proper traffic control or personal protective equipment (PPE).

WARNING & GUIDE SIGNS

Signs used for TTC traffic incident management situations may have a black legend on a fluorescent pink background.

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Chapter

TRAFFIC CONTROL

Subject

Three-Lane Roadway with Passing Lane

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD), Figure 6H-10, Lane Closure on a Two-Lane Road Using Flaggers (TA-10)

PURPOSE & SCOPE

There are occasions when maintenance activities require flagging traffic on a three-lane roadway. All traffic control methods and equipment used in such situations shall be based on good engineering judgment, and may include the procedures described below.

PROCEDURES

For work in the right lane or shoulder when two lanes of traffic are traveling in the same direction:

- Place channeling devices (such as traffic cones or drums) every 40 feet from the start of the passing lane to 100 feet past the work area to prohibit traffic from driving in the right (slow) lane. This temporary traffic control plan allows traffic to channel through the middle (passing) lane. Cones and barrels shall follow the standards set forth in the MUTCD, Section 6F-64 and 6F-67
- The end flagger shall be positioned on the shoulder of the road just upstream of the start of the passing lane, to allow flagging before traffic can enter the passing lane.
- If flagging from the start of the passing lane is not feasible, and the end flagger is placed further downstream, the flagger shall be positioned in the closed lane behind the channeling devices between the closed lane and the travel lane. Additional channeling devices should be used adjacent to the flagger station for added visibility.
- A middle flagger may be used near equipment or the work location in addition to the end flaggers (**SHA 1504**).
- If using flaggers or channeling devices are not feasible, follow the guidelines set forth in MUTCD, Figure 6H-33, Station Lane Closure on a Divided Highway (TA-33).

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TRAFFIC CONTROL

Subject

Temporary Traffic Control Plans

The following resources provide information on temporary traffic control plans:

- *Manual on Uniform Traffic Control Devices* (MUTCD) 6A.01, 6B.01, 6C.01, 6C.02, 6C.03
- **SHA-402**, *Job Safety Analysis*
- **SHA-403**, *Job Briefing*
- **SHA-1500**, *Traffic Control*

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Chapter
TRAFFIC CONTROL

Subject
Mobile TTC Work Platform
(Cone Baskets)

REFERENCES ANSI A10.47

GENERAL PRECAUTIONS

Employees shall take the following precautions when using the Mobile TTC Work Platform to place traffic cones and barrels:

- Use perimeter fall protection or a fall restraint system (**SHA-514**).
- Ensure lights work properly on mobile work platform.
- Use with a class 4 hitch only.
- Limit weight to less than 1,000 pounds.

Employees shall not:

- Ride in the bed of the truck.
- Ride or sit on top of the equipment.

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Section
EMERGENCY & DISASTER RESPONSE

Subject
Overview

REFERENCES

29 CFR 1926.32(f)

For information on responses to specific types of emergencies and disasters, see **SHA-1601-2** through **SHA-1601-06**.

INTRODUCTION

The response needed to mitigate or recover from natural or man-made disasters and emergency events presents hazards and challenges not encountered in routine or scheduled operations.

Each event will have unique conditions and factors that make it unfeasible to approach them with specific, enumerated procedures, and each will require an exercise of discretion by supervisors and workers based on engineering judgement.

However, at all times, the KYTC employees' safety, health, and wellbeing – both emotional and physical – shall be of the utmost importance.

HUMAN FACTORS

Response to disaster and emergency events introduces stress that can negatively impact employee safety and health. During initial emergency phases, responders may be unduly influenced by a perceived urgency to act, shocking images, and the overall abnormal working conditions, all of which can negatively impact their ability to assess the following:

- *Potential hazards.* "Tunnel vision" in completing a certain task can place employees in dangerous situations they would otherwise avoid.
- *Risk level.* The seriousness of a situation may be discounted or ignored in order to complete the task at hand.
- *Personal risk tolerance.* Emergencies often require quick decisions, which may not allow for adequate consideration of personal risk tolerance.

HUMAN FACTORS (CONT.)

Employees who experience extended disaster and emergency responses; ongoing exposure to human suffering, property, and environmental destruction; exposure to unusual hazards, strenuous work, and abnormal work schedules, may unfortunately develop the following:

- Normalization of poor risk assessment
- Psychological impacts such as depression, insomnia, fatigue, absenteeism, substance abuse
- Physical illness, or exacerbation of existing medical conditions

Employees experiencing psychological or physical impacts such as those noted above should be directed to a healthcare provider or the Kentucky Employee Assistance Program (KEAP) at 502-564-5788 or 800-445-5327.

GENERAL PRECAUTIONS

Employees' safety, health, and wellbeing shall be of the utmost importance.

Regardless of the perceived urgency, employees should not be expected or allowed to perform tasks for which they are not trained, qualified, or equipped.

If any employee must work in abnormal weather conditions (wind, rain, cold, heat, snow, ice), supervisors shall make arrangements to provide the employee with regularly-scheduled breaks, in addition to as-needed breaks. This includes flagging operations. All work activity performed outdoors in the elements shall be based on good engineering judgment.

All employees shall be furnished with appropriate personal protective equipment (PPE). In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment. (**SHA-509**).

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Section
EMERGENCY & DISASTER RESPONSE

Subject
Emergency Call-Outs

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD) 6A.01, 6D.03
SHA-1601-1, *Overview*

GENERAL PRECAUTIONS

The specific considerations contained in this policy for emergency call-outs are in addition to the general precautions common to all emergency and disaster responses detailed in **SHA-1601-1**.

At all times, the safety of KTYC personnel shall be the first consideration in response to or mitigation of any emergency or disaster.

"HAZARDOUS" DESIGNATION

Unscheduled and emergency call-outs for road hazard removal, traffic control device repair or replacement, or other tasks are considered "hazardous" due to the unplanned and, in some cases, unpredictable factors involved.

INITIAL ASSESSMENT

First response may consist of a single person tasked with an initial assessment of the situation, including the following:

- Visually evaluate the scene before entering roadway or path of traffic, and ensure placement of traffic control precautions.

  Request for law enforcement or other emergency agencies should be considered early in the assessment to provide traffic warning or point control to ensure safety for KYTC personnel and the public.

- Request additional personnel if two or more employees are needed to complete the task safely, and wait for them to arrive before proceeding.

  It is recommended to avoid working alone, especially when engaged in a physically demanding activity or exposed to environmental or traffic hazards.

- Determine initial actions and necessary resources.

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Flood Events

Caution: KYTC employees shall not enter flood waters for any reason, either on foot or in a vehicle.

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD) 6A.01, 6D.03
SHA-1601-1, *Overview*

GENERAL PRECAUTIONS

The specific considerations contained in this policy for flood events are in addition to the general precautions common to all emergency and disaster responses detailed in **SHA-1601-1**.

At all times, the safety of KTYC personnel shall be the first consideration in response to or mitigation of any emergency or disaster

FLOOD PRECAUTIONS

The following precautions should be observed when working in flood conditions:

Fig. 17. Flood Warning Sign

- KYTC employees shall not enter flood waters on foot or by vehicle.

  Six inches of fast-moving floodwater can knock over an adult or cause vehicle stalling and loss of control. One foot of water will float many vehicles and two feet of rushing water can carry away most vehicles, including sport utility vehicles (SUVs) and pick-ups.

- Wounds must be immediately cleaned and treated.

  Floodwaters can overwhelm infrastructure and be contaminated with hazardous chemicals and biological hazards that can cause adverse effects including skin irritations, bloodborne pathogen (BBP) transmission, and infections.

FLOOD PRECAUTIONS (CONT.)

- Avoid contact with flood debris, and do not enter damaged structures.

  Structures remaining after flood events can be structurally compromised and present collapse or fall hazards. Structures and debris may contain mold, virtually any and all hazardous substances, human or animal remains, live animals, sharp objects, and energized electrical equipment.

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Earthquake Events

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD) 6A.01, 6D.03
SHA-1601-1, *Overview*

GENERAL PRECAUTIONS

The specific considerations contained in this policy for earthquake events are in addition to the general precautions common to all emergency and disaster responses detailed in **SHA-1601-1**. At all times, the safety of KTYC personnel shall be the first consideration in response to or mitigation of any emergency or disaster

EARTHQUAKE PRECAUTIONS

The following precautions should be observed when working in a post-earthquake area:

- Stay aware of fire and explosion risks from ignition of gases and fumes from severed underground lines and under- and above-ground tanks.
- Assume all structures in the immediate area (including roadway infrastructure such as bridges, box culverts, and overhead sign or signal supports) to be compromised and at risk of collapse without warning until they are inspected by engineers, cleared, or rendered safe.
- Consider all contact with or movement of debris a potential hazard. Debris and structures may contain hazardous substances, human or animal remains, sharp objects, and energized electrical equipment.
- All employees shall be furnished with appropriate personal protective equipment (PPE). Puncture and cut resistant gloves, safety glasses, and puncture resistant footwear are especially critical PPE for earthquake event responses.

  In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment. (**SHA-509**)

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Hazardous Materials Events

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD) 6A.01, 6D.03
SHA-1508, *Incident Management Areas*
SHA-1601-1, *Overview*

INCIDENT ZONE DEFINITIONS

The following incident zone definitions apply to all hazardous materials incidents, and should be clearly understood by the KYTC supervisor directing the Cabinet's response in coordination with the emergency response incident command:

- *Exclusion* or *Hot Zone* – The area with actual or potential contamination and the highest potential for exposure to hazardous substances.
- *Contamination* or *Warm Zone* – The transition area between the exclusion and support zones. This area is where trained and equipped emergency responders enter and exit the hot zone, and where decontamination activities take place.
- *Support* or *Cold Zone* – The areas free from contamination.

GENERAL PRECAUTIONS

The specific considerations contained in this policy for hazardous materials events are in addition to the general precautions common to all emergency and disaster responses detailed in **SHA-1601-1**.

At all times, the safety of KTYC personnel shall be the first consideration in response to or mitigation of any emergency or disaster.

HAZARDOUS MATERIALS PRECAUTIONS

Hazardous materials emergency incidents may require KYTC assistance in establishing and maintaining traffic diversions or detours, as well as support of other emergency response agencies to ensure public safety.

The following precautions shall be taken:

- The safety and health of KYTC employees shall always be the primary consideration in all responses to hazardous materials events.

HAZARDOUS MATERIALS PRECAUTIONS (CONT.)

- At no time will KYTC management accept an assignment, nor commit to perform a task, that will expose employees to the hazardous chemicals involved in the immediate emergency.

- KYTC employees shall operate ONLY in the Support/Cold Zone, and shall never be assigned to duties in the Contamination/Warm or Exclusion/Hot Zones.

  If conditions change and the Support/Cold Zone is becoming unsafe, KYTC personnel must immediately withdraw to a safe area until a new Support/Cold Zone is established.

- Traffic control considerations for roadway traffic incidents are detailed in **SHA-1508**, *Incident Management Areas*.

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Damaging Wind or Tornado Events

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD) 6A.01, 6D.03
SHA-1601-1, *Overview*

GENERAL PRECAUTIONS

The specific considerations contained in this policy for damaging wind and tornado events are in addition to the general precautions common to all emergency and disaster responses detailed in **SHA-1601-1**.

At all times, the safety of KTYC personnel shall be the first consideration in response to or mitigation of any emergency or disaster.

DAMAGING WIND OR TORNADO PRECAUTIONS

The following precautions should be observed when working in areas affected by damaging winds or tornadoes:

- All overhead electrical and other utilities should be considered energized until verified as de-energized by the utility company.
- Equipment such as bucket trucks and aerial lifts shall not be used when winds are expected to be sustained at or above 30 mph, or if there is a high probability of wind gusts at or above 30 mph.
- All trees and limbs in the roadway shall be assessed for potential electric line involvement before any contact. If utility lines are found to be involved, do not contact any part of the lines or debris; rather, contact the utility company and secure a safe exclusion zone until de-energized.
- Broken and partially fallen trees, hanging limbs, and debris entangled in standing trees are potentially deadly hazards that can fall on workers positioned beneath them. Check for these hazards overhead upon arrival on-site, designate someone not directly involved in the work as the safety overwatch, and wear hard hats at all times.

DAMAGING WIND OR TORNADO PRECAUTIONS (CONT.)

- Sharp objects of all types may be concealed in debris that can present puncture or cut hazards to hands, arms, feet, and legs. Keep a visual check on debris being moved, lifted, or walked on at all times. Wear safety boots, long sleeves, and leather or cut-resistant gloves.

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Escort Vehicles (Shadow Vehicles)

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD) 6D.0309 A
601 KAR 1:018, *Special overweight or overdimensional motor vehicle load permits*
SHA-1718, *Truck Mounted Attenuators*

PURPOSE & SCOPE

Front or rear escort vehicles (also referred to as shadow vehicles) are used to maximize safety for work crews and the traveling public by providing advance warning where hills or curves eliminate the motorist's sight distance to the work vehicle or job site. A rear escort vehicle shall be used if the equipment/vehicle cannot maintain the posted speed limit during operation.

Generally, flaggers and stationary signing are impractical for moving job sites such as traffic-lane striping, roadside spraying, vac-all sweeping, shoulder operations with a grader, following wide loads, and certain mowing operations. Therefore, moving job sites typically benefit from escort vehicles.

Caution: Escort vehicles shall not be used to transport flammable materials or liquids.

DRIVER RESPONSIBILITIES

The escort driver shall:

- Maintain two-way radio contact with work vehicles.
- Follow the moving work site at a safe distance, usually 500 feet. However, the actual following distance will vary according to conditions, such as type of road, speed of traffic, volume of traffic, and speed of work vehicles.
- Constantly remain aware of the escort vehicle's position in relation to the positions of motorists' vehicles, varying speed and holding back on curves and hillcrests to give more warning to motorists. Escort drivers may have to speed up to regain the proper distance from work vehicles.

SIGNAGE

All escort vehicles shall have appropriate rear-mounted warning signs to properly advise motorists of hazards ahead and be equipped with appropriate safety devices including, but not limited to, truck-mounted attenuators, arrow boards, and lighting packages, in accordance with the *Manual on Uniform Traffic Control Devices* (MUTCD) 6D.0309 A.

On highways consisting of four lanes or greater, a truck mounted attenuator with a rear mounted flashing arrow shall be used as a rear escort vehicle. Truck mounted attenuators shall be used in accordance with **SHA-1718**.

Arrow panels used on multilane highways shall, as a minimum, be Type B (5 feet x 2 1/2 feet). The Kentucky Transportation Cabinet (KYTC), however, recommends that arrow panels Type C (4 feet x 8 feet) be used whenever possible.

Arrow panels shall be in caution mode when operating from the shoulder or emergency strip. All arrow panel use, size, legibility distance, and other specifications shall conform to Section 6F.56 and Figure 6F-6 of the MUTCD.

Arrow panels **shall not** be used on two-lane roads.

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Pothole Patching

SUPERVISOR RESPONSIBILITIES

The supervisor in each county or district shall, as a part of the temporary traffic control plan, consider work location, degree of work involved, sight distance, traffic volume, traffic speed, and road character, when determining necessary traffic control operations to implement during pothole patching.

DEFINITIONS

For the purposes of this section only, the following definitions apply:

- *Stationary work operations* – Pothole patching job site is limited to one location.
- *Mobile work operations* – Pothole patching job site frequently moves and may include numerous locations.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions as a part of pothole patching operations:

- Forewarning and sight distance shall be properly maintained on either stationary or moving pothole-patching work operations.
- Both types of work operations may require additional signage, channelizing devices, attenuators, escorts, arrow panels, high-intensity lights, and/or police participation to maintain a safe work zone.

  Caution: Each worker shall have a planned escape route. No throw-and-go techniques shall be performed.

STATIONARY OPERATIONS

- All work operations performed in dangerous locations (bridges, cuts, high-accident areas, high-speed/high-volume highways) or where heavy workload activities are expected, shall utilize a full lane closure (stationary signage, coned closed lane, and flaggers) for maximum protection.

MOBILE OPERATIONS

- Mobile work operations performed where flaggers can move along with the work, shall utilize stationary warning signs. Work-zone limits are recommended to be a 1-mile safe distance and shall not exceed 2 miles.

- Fast-moving work operations where stationary signage is not feasible shall utilize rear-vehicle mounted signage.

- A traffic observer or lookout shall be positioned to continually watch traffic and warn workers whenever trouble is anticipated. (See also **SHA 1628**.)

  Caution: Typically, work on Kentucky highways does not involve low-volume/low-speed traffic, and adequate sight distance is difficult to maintain. Therefore, all pothole patching moving operations shall utilize escort vehicles to provide adequate sight distance and notification to motorists of the work activity (**SHA-1602**).

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Litter Pickup

GENERAL OPERATIONS & PRECAUTIONS

Employees should incorporate the following procedures and safety precautions when engaged in litter pickup operations:

- Work team should consist of a minimum of two employees.
- Pick up litter while facing oncoming traffic.
- Employees shall wear hi-visibility apparel and other personal protective equipment (PPE) as appropriate for the identified hazards (**SHA-500**).
- The vehicle utilized in this operation shall have, at minimum, level 1 lighting package and appropriate rear-mounted signage in conjunction with appropriate stationary signage.
- Utilizing a shadow truck with a crash cushion is recommended when feasible (**SHA-1602**).

WORK VEHICLES

As it is not practical to use flaggers during litter pickup operations, it is mandatory that work vehicles remain off the roadway whenever possible. If there is not enough shoulder to allow for this, the driver shall park at the nearest off-the-roadway location.

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Guardrail Repair

REFERENCE

Manual on Uniform Traffic Control Devices (MUTCD) Part 6 Notes for Figure 6H-10—Typical Application 10-Lane Closure on a Two-Lane Road Using Flaggers

TRAINING

Training is required for all employees engaged in guardrail and cable barrier repair.

TRAFFIC CONTROL

When a lane of travel is impeded during guardrail repair, there shall be a standard lane closure with flaggers used for traffic control (**SHA-1504**). All standard warning or traffic control devices shall be a part of the temporary traffic control plan (**SHA-1510**).

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Cutting Brush

Caution: Prior to cutting a standing tree, a hazard assessment and job briefing shall be performed.

REFERENCES

- 29 CFR 1926.32(f)
- *Manual on Uniform Traffic Control Devices* (MUTCD)
  - Part 6 Notes for Figure 6H-3—Typical Application 3 Work on the Shoulders
  - Part 6 Notes for Figure 6H-4—Typical Application 4 Short Duration or Mobile Operation on a Shoulder
  - Part 6 Notes for Figure 6H-10—Typical Application 10 Lane Closure on a Two-Lane Road Using Flaggers
  - Part 6 Notes for Figure 6H-17—Typical Application 17 Mobile Operations on a Two-Lane Road

SUPERVISOR RESPONSIBILITIES

In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment. (**SHA-509**).

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Employees shall wear required PPE during brush-cutting operations. The feeding operator and all personnel working within 20 feet of brush-chipping equipment shall wear approved head, eye, hand, foot, and hearing protection (**SHA-500**), and shall maintain a safe distance from one another so as not to create a hazard.

Caution: Loose clothing shall not be worn in proximity to machinery or equipment where entanglement can occur.

WORK VEHICLES & SIGNAGE

Vehicles used in cutting brush shall be parked off the roadway whenever possible, and an appropriate sign may be displayed with a red cone near it.

If the vehicle cannot be parked completely off the traveled portion of the roadway, normal traffic control procedures (including warning signs, flaggers, and channelizing devices) shall be used.

When loading brush on vehicles, a red flag shall be affixed to the rearmost portion of the brush that extends beyond the tailgate section. The load of brush shall be secured so that it does not pose a hazard to the traveling public.

CHIPPER OPERATION

When using a chipper, there should be at least two employees operating it with one person assigned to the safety bar to stop the machine in the event of an emergency.

Material should be loaded from the side of the infeed chute, not directly inline, and no part of the operator body or tools should be placed into the chute area.

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Shouldering Operations with Motor Graders

TRAFFIC CONTROL

Kentucky Transportation Cabinet (KYTC) employees engaged in shouldering operations with motor graders shall observe the following traffic control practices:

- KYTC employees shall not be assigned to flag traffic during ~~a~~ shouldering operations with mobile graders.
- If operations are *slow-moving*, normal warning signs and flagging procedures shall be utilized.
- If the shouldering operations are *fast-moving*, normal flagging procedures are not practical. In this case, an appropriate warning sign shall be placed on each end of the work area.
- When flaggers cannot be used, there shall be a rear escort vehicle with at least a level 1 lighting package and a tailgate-mounted sign. This vehicle shall remain approximately 500 feet behind the shouldering operation.

  When the grader is operated over a hill or in a curve, the driver of the escort vehicle shall remain in a location visible to traffic to provide warning. The escort vehicle shall be in compliance with **SHA-1602**.

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Ditching Operations

TRAFFIC CONTROL

Employees engaged in ditching operations shall observe the following traffic control practices:

- Normal flagging and warning-sign procedures shall be used.
- A ground guide should be used to safely direct dump trucks to and from the vicinity of the operation (**SHA-1503** and **SHA-1504**).
- Radio communication must be maintained between operator, flagger, and ground guide.

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Backfilling

TRAFFIC CONTROL

Employees engaged in backfilling shall ensure the use of proper signage and flaggers to control traffic during the dumping of material along the side of the road (**SHA-1503** and **SHA-1504**).

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Paving Operations

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and precautions as a part of paving operations:

- Paving operations are slow-moving; therefore, normal warning signs and flagger traffic-control procedures shall be used (**SHA 1503** and **SHA-1504**).
- An ABC fire extinguisher shall be available on motorized paving machines (**SHA-206-4**).
- Employees shall exercise *extreme* caution when working on or near the center line due to possible oncoming traffic.

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Bridge Construction, Inspection, & Maintenance

REFERENCE 29 CFR 1926.106

SUPERVISOR RESPONSIBILITIES

In accordance with 29 CFR 1926.32(f), supervisors are designated as competent persons and, after consulting with safety personnel as needed, are responsible for the assessment, selection, and use of appropriate personnel, equipment, and personal protective equipment. (**SHA-509**).

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Employees shall observe general safety rules for personal protective equipment as stated in **SHA-500**, including the following precautions:

- *Fall Precautions* – When working on structures where an employee could fall into a waterway, employees shall wear U.S. Coast Guard-approved life jackets (**SHA-507**). Life jackets are not necessary if a fall-arrest system that incorporates 100 percent tie-off is used.

  When a fall of 4 feet or more is possible, an ANSI-approved harness and lanyard shall be used (**SHA-514**). At least one readily available lifesaving skiff with a buoy and 90 feet of line shall be immediately available at locations where employees are working over or adjacent to water where a drowning hazard may exist (**SHA-414**).

- *Respiratory Precautions* – Employees engaged in sandblasting operations shall be required to be medically evaluated in accordance with the KYTC respiratory protection program (**SHA-406-1**).

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Roadside Operations

PURPOSE & SCOPE

The slow-moving nature of roadside operations creates a hazard to both the crew and public, and requires several safeguards for general operations.

SUPERVISOR RESPONSIBILITIES

The supervisor shall:

- Determine if weather conditions will permit the spraying operation to be conducted safely, as spraying shall not be conducted on extremely windy days.
- Assign responsibility for the operation and maintenance of the spray power equipment to an employee who is well-versed in its operational functions.
- Ensure a first aid kid with eye wash solution is available in each spray truck.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The employee serving as the pesticides applicator shall comply with the personal protective equipment (PPE) requirements shown on the pesticide label and the safety data sheet (SDS).

The *minimum* PPE required for all pesticide applications is long pants, long-sleeved shirts, shoes, and socks. Face shields or goggles approved for these types of operations, chemical-resistant gloves, aprons, or coveralls shall be used by employees while mixing pesticides (**SHA-500**).

Caution: If spray solution comes in contact with eyes, the employee shall immediately wash his or her eyes with clean water or eyewash solution.

TRAFFIC CONTROL

Employees engaged in roadside operations shall observe the following traffic control practices:

- When spraying or fertilizing on a **two-lane highway**, the sprayer unit shall have at minimum a level 2 lighting package and a tailgate-mounted sign approximating CAUTION—SPRAYING OPERATIONS.

  A rear escort vehicle shall be used.

TRAFFIC CONTROL (CONT.)

- When working from a travel lane on a **multilane highway**, the hydro seeder or spray truck shall be equipped with appropriate warning signs and lighting package.

  An escort vehicle equipped with a truck-mounted attenuator with arrow panel shall be used and comply with **SHA-1602**. The operator shall frequently check the arrow panel to ensure the bulbs are operative.

WARNINGS

Due to the risk of bodily harm or death, employees shall not:

- Use pesticides and chemical sprays near open flame.
- Smoke during use.
- Mix weed killers such as Roundup in a galvanized container, as a combustible mixture can result.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and safety precautions as a part of roadside operations:

- All persons who handle, load, mix, or apply pesticides shall be licensed and certified by the Kentucky Department of Agriculture.

- Spraying operations shall be conducted within guidelines prescribed by the Division of Maintenance (**MAIN-700**).

- Safety Data Sheets (SDS) should be readily available when spraying (**SHA-409**).

- Follow the manufacturer's directions and precautions printed on the container of all sprays and chemicals.

- Sprayer and hydro seeder units, other than those mounted on pickup trucks, shall be provided an adequate means of communication between the driver and the operator in rear.

- Crews shall frequently inspect nozzles and hoses for leakage and deterioration.

- Standard guardrail systems shall be provided on units if employees are exposed to falling hazards (**SHA-514**).

GENERAL OPERATIONS & PRECAUTIONS (CONT.)

- Responsibility for the operation and maintenance of the spray power equipment should be assigned to an employee who is well-versed in its operational functions.

- Surfaces on the spray tank and truck should be kept reasonably free from accumulation of spray material by washing frequently.

ADDITIONAL RESOURCES

FOG-608 and **MAIN-700** provide additional information on noxious weed control. The *Pesticide Guidance Manual* also provides information on vegetation management, pesticide use safety, and noxious weed identification.

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Snow & Ice Removal

TRAINING

All snow and ice removal vehicle operators shall undergo annual *Snow & Ice Operation and Safety* training.

GENERAL OPERATIONS & PRECAUTIONS

Vehicles equipped with salt spreaders shall have appropriate warning lights.

Front-mounted snowplows shall have a reflective guide bar attached to each corner of the plow.

Headlights and warning lights shall be used for both daytime and nighttime operations.

Employees shall not climb on sides or top of trucks.

ADDITIONAL RESOURCES

FOG-1000 and **MAIN-1000** provide additional information on snow and ice removal.

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Tractor Mowing

REFERENCES

29 CFR 1926.32

DEFINITIONS

Qualified person – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project. [29 CFR 1926.32(m)]

Competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. [29 CFR 1926.32(f)].

SUPERVISOR RESPONSIBILITIES

It is the responsibility of the employer, manager, and supervisor to provide adequate knowledge and training so that tractor operators can recognize potential hazards and utilize skills necessary to avoid them.

A competent person shall look over the area before mowing operations begin, noting elevation changes and the angle of slope. Good engineering judgement shall be used.

TRAFFIC CONTROL SIGNAGE

Mowers shall be equipped with two red flags on 6-foot staffs, a triangular SLOW-MOVING VEHICLE sign, and appropriate warning lights.

Mower operations shall be conducted between appropriate signage. The END MOWING ZONE sign shall not be placed more than 2 miles from the BEGIN MOWING ZONE or MOWING ZONE sign. Additional MOWING ZONE signs may be placed every 2 miles to extend the mowing zone up to a maximum of 4 miles.

EQUIPMENT SAFETY PRECAUTIONS

All tractors used on highway-mowing operations shall have a rearview mirror mounted on the left side.

The mower arm shall not be permitted to reach over the roadway at any time while mowing the center island or median.

Sickle blades shall be adjusted to allow the blade to swing back when striking a stationary object.

All mowers shall have compliant machine guarding. If the mower is equipped with a bush hog, it shall be equipped with protective chains or guard to prevent throwing objects. A steel mesh screen shall be mounted on the tractor between the operator and the bush hog.

AUTHORIZED OPERATOR SAFETY PRECAUTIONS

For safe operation of a tractor, an employee must be a qualified and authorized operator. To be qualified, an employee must understand and have access to written instructions supplied by the manufacturer.

Authorized mower operators shall:

- Walk the area prior to mowing, if possible.

  Caution: Tractors shall not be operated on slopes greater than 3:1 or 18 degrees.

- Follow all manufacturer guidelines.

- Wear a safety belt.

- Take extra precautions when operating near crests of hills, excavations, or other areas where the machine may tip or drop off, including but not limited to the following:
  - Select a lower gear and travel speed on slopes or hills.
  - Drive vertically up and down slopes.
  - Do <u>not</u> stop or engage the clutch when going up or down slopes.
  - Use extreme caution around hidden culverts, ditches, trees, and road signs.
  - If unable to maneuver around ditches or washouts, cross at approximately 45 degrees.

AUTHORIZED OPERATOR SAFETY PRECAUTIONS (CONT.)

- Make proper observations before backing or turning around equipment.

- Before making any repairs to the cutting blade or knife sections, or cleaning the blade, shut off the mower engine, place the lever activating the knife blades in the neutral position, and block the wheels of the machine to keep it from rolling, if necessary.

- Stay at least 300 feet behind other mowers operating a bush hog, or the distance recommended by the manufacturer.

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Hand Lawn Mowers

GENERAL OPERATIONS & PRECAUTIONS

Employees operating hand lawn mowers shall:

- Ensure the motor has sufficiently cooled before refueling.
- Shut off the engine and disconnect the spark plug wire when changing or sharpening the blade or doing any repair work under the mower.
- Ensure grass discharge is not blown toward other personnel.
- Install and use all guards when the equipment is in operation.
- Follow all manufacturer guidelines for operation, maintenance, and inspection, as detailed in the owner's manual.

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Center-Line Striping

ESCORT VEHICLES

Escort vehicles shall be used on center-line striping operations as follows:

- *Two-Lane Highways*

  Employees conducting center-line striping shall be protected by a rear escort vehicle with at least a level 2 lighting package and a tailgate-mounted warning sign with the message SLOW VEHICLE AHEAD. The rear escort vehicle shall remain approximately 500 feet behind the striping operation at all times.

  A front escort vehicle is optional. If used, the front escort vehicle shall have minimum-level lighting and a sign approximating PASS WITH CAUTION. The driver of the front escort vehicle shall always be positioned to offer maximum warning for oncoming motorists.

  All escort vehicles used shall comply with **SHA-1602**.

- *Highways of Four Lanes or Greater*

  A truck-mounted attenuator with a rear-mounted flashing arrow shall be used as a rear escort vehicle (**SHA-1602**).

  Truck-mounted attenuators shall be used in accordance with **SHA-1718**.

OTHER VEHICLES

The paint-mixing truck shall park at a predetermined location and not be part of the moving striping operation.

Two 20-ABC fire extinguishers shall be provided on vehicles used for mixing paint or paint striping (**SHA-206-4**).

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Thermoplastic-Striping Operations

GENERAL PRECAUTIONS

Since thermoplastic striping is a stationary job, the work area shall be protected by a series of channelizing devices. If the equipment must be located in the traveled portion of the roadway, a temporary traffic control plan shall be employed that includes the required warning lights, signage, and number of flaggers (**SHA-1500**).

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Employees engaged in mixture operations involving glass beads shall wear ANSI-approved eye protection (**SHA-504**).

HAZARDOUS WASTE DISPOSAL

All waste products from this operation, such as leftover paint or flushed line residue, shall be collected and disposed of in accordance with the KYTC Division of Environmental Analysis hazardous waste program (**EA-1000**).

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Traffic Signal Work

GENERAL

PRECAUTIONS

Since traffic signal work is a stationary job, the work vehicle shall be protected by a series of channelizing devices.

Signage shall be used at all times, including during shoulder work. If the equipment must be in the traveled portion of the roadway, adequate warning lights (appropriately illuminated at night), signage, and flaggers shall be used.

The use of law enforcement for traffic control is suggested where signals are mounted diagonally across an intersection. If law enforcement is unavailable and conditions warrant, place the traffic signal on all-red flash, place stop signs on all approaches, or implement both (**SHA-1500**).

Two or more individuals shall be on the scene during bucket-truck operations. Bucket-truck work shall comply with **SHA-1717** and **FOG-1500**. Overhead work from the bucket shall be performed within the coned work area only.

Caution: No portion of an aerial lift platform or supporting structure shall extend over an open lane of traffic, regardless of the working height.

Platforms on aerial lifts (such as, autocranes or levelator trucks) shall not be operated in excess of the posted capacity of the platform.

A truck-mounted attenuator and arrow panel is recommended in affected lanes on roads with five or more lanes and posted speeds of 45 mph or greater.

FALL PROTECTION

Adequate guard railing and fall protection shall be provided if employees are working at heights above 4 feet. Operators shall utilize full fall protection (**SHA-409**).

HIGH WIND EVENTS

Equipment such as bucket trucks and aerial lifts should not be used when winds are expected to be sustained at 30 mph or above, or there is a high probability of wind gusts of 30 mph or above.

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KENTUCKY 811

Follow all procedures for calling 811 prior to digging.

JOBSITE SETUPS

If crews and equipment are performing work on the right of way (ROW) or in the traveled portion of the roadway, one of the jobsite setup options listed below shall be followed:

- *Manual on Uniform Traffic Control Devices*, (MUTCD) Part 6 Notes for Figure 6H-3—Typical Application 3 Work on the Shoulders
- MUTCD Part 6 Notes for Figure 6H-4—Typical Application 4 Short Duration or Mobile Operation on a Shoulder
- MUTCD Part 6 Notes for Figure 6H-10—Typical Application 10 Lane Closure on a Two-Lane Road Using Flaggers
- MUTCD Part 6 Notes for Figure 6H-17—Typical Application 17 Mobile Operations on a Two-Lane Road

Caution: In all setups, adequate warning lights, signage, channeling devices, and flaggers shall be used.

Since sign installation is a stationary job, the work vehicle shall be protected by a series of channelizing devices.

A traffic observer or lookout shall be positioned to continually watch traffic and warn workers whenever trouble is anticipated.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personnel driving signposts shall use the appropriate PPE including eye, foot, hand, head, and hearing protection (**SHA-500**).

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Survey Crews

JOBSITE SETUPS

If survey crews are performing work where they or their equipment is on the right of way or in the traveled portion of the roadway, one of following jobsite setup options shall be followed:

- *Manual on Uniform Traffic Control Devices*, (MUTCD) Part 6 Notes for Figure 6H-3—Typical Application 3 Work on the Shoulders
- MUTCD Part 6 Notes for Figure 6H-4—Typical Application 4 Short Duration or Mobile Operation on a Shoulder
- MUTCD Part 6 Notes for Figure 6H-10—Typical Application 10 Lane Closure on a Two-Lane Road Using Flaggers
- MUTCD Part 6 Notes for Figure 6H-17—Typical Application 17 Mobile Operations on a Two-Lane Road

In all setups, adequate warning lights, signage, channeling devices, and flaggers shall be used. A SURVEY CREW sign may also be used.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All employees engaged in survey operations shall follow the ANSI standard for high visibility safety apparel. (See also **SHA-500**.)

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Slope Mowing

REFERENCES

29 CFR 1926.32

DEFINITIONS

Qualified person – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project. [29 CFR 1926.32(m)]

Competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. [29 CFR 1926.32(f)].

SUPERVISOR RESPONSIBILITIES

Supervisors should observe the safety precautions noted in the manufacturer's guidelines and this policy.

It is the responsibility of the employer, manager, and supervisor to provide adequate knowledge and training so that tractor operators can recognize potential hazards and utilize skills necessary to avoid them.

A competent person shall look over the area before mowing operations begin, noting elevation changes and the angle of slope. Good engineering judgement shall be used.

GENERAL OPERATIONS & PRECAUTIONS

All equipment shall be used only for the work for which it is intended and designed.

Supervisors and slope mower operators should observe the following safety precautions:

GENERAL OPERATIONS & PRECAUTIONS (CONT.)

- Before daily mowing operations begin, the area to be mowed should be physically walked and inspected by the county superintendent, crew leader, or slope mower equipment operator, to check for potentially dangerous, foreign objects including, but not limited to, old wire, old guardrail, and signposts.

  - Objects with the potential to be thrown from a mower should be removed from the site.

  - Potentially dangerous objects that cannot be removed from the mowing site should be flagged or painted for visibility.

- All manufacturer guidelines for operation, maintenance, and inspection shall be followed. See the owner's manual, **SHA-405-2**, and **FOG-701** for additional information.

- Operators must be qualified and authorized. To be qualified, the operator must understand and have access to written instructions supplied by the manufacturer.

- When in operation, employees shall not cut brush larger than 5 inches in diameter.

- When using the *forestry head* for mowing operations, the equipment (tractor skid steer or excavator) shall be equipped with a forestry package.

- For *rotary-type cutter heads* the following additional requirements apply:

  - No brush cutting will be done within 300 feet of dwellings, businesses, residences, pedestrian areas, other employees, or other KYTC equipment. **Hand cutting only is required in these areas.**

  - Traffic shall be stopped when brush cutting equipment is in operation; however, no longer than 20 minutes.

TRAFFIC CONTROL

Slope mowing operations shall utilize appropriate traffic control, including the following safety precautions:

- Traffic control shall be conducted as set forth in the latest version of the *Manual on Uniform Traffic Control Devices* (MUTCD) and KYTC *Standard Drawings*.
- All employees and flaggers shall wear hardhats and eye protection.
- Flaggers shall be equipped with radio equipment to maintain contact with brush cutting equipment operators regarding traffic flow.
- When using rotary-type cutter heads, traffic shall be stopped when brush cutting equipment is in operation; however, no longer than 20 minutes.

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Trailers & Towed Equipment

SUPERVISOR RESPONSIBILITIES

Supervisors should verify that operators are capable and qualified before allowing equipment to be operated unsupervised. Both supervisors and operators should follow all Federal Motor Carrier Safety Administration (FMCSA) guidelines for trailers and towed equipment.

OPERATOR RESPONSIBILITIES

Operators responsibilities may include, but are not limited to, the following:

- Perform a preoperational check of the equipment.
- Become familiar with the operator's manual.
- Report needed repairs promptly.
- Ensure the hitch ball size required by the trailer socket matches the size of the tow vehicle drawbar tow ball.
- Perform a visual and manual check of the hitch lock mechanism to confirm all are secure and locked prior to moving trailer.
- Make sure cargo is properly loaded and secured, and is using only approved chain and load binders.
- Use and secure the proper strength safety chains on any attachment in tow with no more than 10% load weight on the trailer tongue.

  Note: **SHA-1703** and **SHA-1626** provide additional information.

- Be aware of height and width of load.
- Plan ahead to minimize the need for backing.

  Note: Backing equipment should be done slowly while the operator frequently checks the mirrors, and with the help of a spotter. Backup alarms should be working properly. An observer should be used as well, when available.

- Make sure trailer bed and ramps are clear of any debris.

OPERATOR RESPONSIBILITIES (CONT.)

- Make sure tilt-beds or ramps are secure before putting trailer in use.
- Hook, unhook, load, and unload on stable ground with trailer secure.
- Be sure taillights and turn signals are in view when towing any attachment that does not have taillight hookup.
- Operator shall ensure they know the weight of the equipment they are towing, and the towing vehicle rating is sufficient.

WARNINGS

Operators shall not:

- Use any equipment deemed unsafe.
- Load a trailer beyond its recommended capacity.
- Allow anyone to stand or pass between the truck and trailer when backing to hook-up the trailer.

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Working Near Railroads (RR)

REFERENCES

Federal Railroad Administration (FRA); KRS 277; **SHA-1506** (additional information on highway-rail grade crossings)

GENERAL PRECAUTIONS

Employees working near railroads should take the following precautions:

- Always look in both directions prior to crossing RR tracks.
- Do not cross within 50 feet (15 meters) in front or behind a nonmoving train unless instructed by emergency or railroad personnel.
- Do not crawl under stopped train cars or cross RR tracks between standing train cars.
- Do not block or disrupt access roads to and across tracks.
- Do not park a vehicle or equipment within 20 feet (6 meters) of RR tracks.
- Materials, tools, or equipment shall not be stored on the RR right of way.

EMERGENCY NOTIFICATION SYSTEMS (ENS)

The purpose of the ENS sign is to provide the public with critical emergency contact information at every highway-rail grade crossing. The information contained on the ENS sign enables the public to reach the railroad operator responsible for the crossing and to identify the specific crossing in the event of an emergency.

For emergency incidents occurring on or near railroad crossings:

1. Call 911 and provide the crossing identification number on the ENS sign located at every highway-rail grade crossing.
2. Call the emergency phone number provided on the ENS sign.

Figure 18. ENS Sign

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Culvert & Subsurface Structure Entry

Caution: It is recommended that supervisors and employees consult **SHA-406-5**, *Confined Spaces*, prior to entering a culvert or subsurface structure.

TRAINING REQUIREMENTS

All employees who may enter, attend, or supervise employees entering either non permit-required or permit-required confined spaces must have attended a confined space training program or refresher course within the past year, and hold current First Aid and CPR certification [29 CFR 1910.146(G) and 29 CFR 1910(K)(2)(iii)].

New employees who will participate in confined space entry shall be trained prior to entering a confined space. Rescue and recovery training shall be completed annually.

GENERAL PRECAUTIONS

Employees may inspect culverts and other subsurface structures *after* receiving appropriate training.

Prior to entry:

- Air quality shall be checked for oxygen deficiency or the presence of harmful contaminants.
- Available as-built or other plans should be reviewed.
- A helmet lamp or flashlight may be used to improve illumination.

WARNINGS

No employee (trained or untrained) shall enter culverts or structures having the following characteristics:

- A diameter or opening of 48 inches (900 millimeters) or less
- Debris snares or other obstructions
- Water depth above boot tops
- Water current or incline that presents a hindrance to stable footing

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REFERENCES

Federal Motor Carrier Safety Administration (FMCSA)

CARGO

Cargo such as corrugated pipe, concrete pipe, and signs shall be secured with adjustable tie downs such as ratchets or binders. Each tie-down shall be attached and secured in a manner that prevents it from becoming loose, unfastening, opening, or releasing while the vehicle is in transit.

The total working load limit of the tie-downs must be at least one-half times the weight of the equipment being transported.

Grade 70 chains shall be used for load securement.

Example: If a load weighs 5,000 lbs., at least 2,500 lbs. of tie-downs are needed.

A minimum of two tie-downs are to be used if the cargo is less than ten feet in length. One additional tie down is required for every fraction beyond the first ten feet of length.

Example: one piece of corrugated pipe with a length of twenty feet, six inches (20' 6"), will need to be secured with a minimum of three tie-downs *if a header board is in place and the cargo is positioned to prevent forward movement*. If a header board is *not* in place and the cargo is *not* positioned to prevent forward movement, an additional tie-down is required.

All tie-downs, cargo securement systems, parts, and components used to secure cargo shall be in proper working order with no damaged or weakened components (cracked, twisted, bent, knotted, stretched, or broken).

CARGO PLACEMENT & RESTRAINT

Cargo that is likely to roll, such as concrete or corrugated steel pipe, must be restrained by blocks, wedges, cradle, or other means to prevent rolling and that is not capable of unfastening or loosening while the vehicle is in transit.

Cargo placed beside each other must be in direct contact with each other or otherwise secured to prevent the load from shifting.

MOTORIZED EQUIPMENT GREATER THAN 10,000 POUNDS

All heavy vehicles and equipment, such as backhoes, excavators, and loaders, must be secured as close as possible to the front and rear of the equipment by a minimum of four tie-downs.

Accessory equipment, such as hydraulic shovels, buckets, and blades, shall be completely lowered and secured to the trailer. Articulated vehicles must be secured in a manner that prevents movement while in transit. For example, a loader with locking pins that are not engaged needs a tie-down.

The total working load limit of the tie-downs must be at least one-half times the weight of the equipment being transported.

Example: If a load weighs 30,000 lbs., at least 15,000 lbs. of tie-downs are needed.

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Field Data Collection Activities

PRECAUTIONS FOR DATA COLLECTION WHILE TRAVELLING

Employees engaged in data collection while traveling at reduced speed shall take the following precautions, as applicable:

- Wear seatbelts when travelling. Seatbelt use is also recommended while parked on the shoulder or right of way.
- Worker safety apparel shall be worn (**SHA-509** and **SHA-1504**).
- Drive as far to the right of the traveled roadway as the nature of the work permits.
- Park on the shoulder or as far as possible to the right of the traveled roadway when brief stops are necessary.
- Vehicles used in data collection activities shall be equipped with the necessary safety devices such as flashing lights, warning signs, and beacons.
- Exercise extreme caution when it is necessary to take measurements or conduct other activities on the roadway surface.

  Placement of an observer to detect oncoming traffic is advisable when conducting activities on the roadway surface.
- Employees shall use reasonable care and safety equipment to forewarn the motoring public when placing, adjusting, or removing a recorder.

PRECAUTIONS FOR DATA COLLECTION BY OBSERVATION

Employees collecting data by observation shall take the following precautions, as applicable:

- When possible, park in places that are out of the way of other traffic such as driveways, parks, parking areas, or on extra-wide shoulders.

PRECAUTIONS FOR DATA COLLECTION BY OBSERVATION (CONT.)

- The vehicle shall be parked off the roadway and in such a manner so that it will not block the sight distance of approaching traffic.

- If warning signs are needed, a sufficient number in accordance with the *Manual on Uniform Traffic Control Devices* (MUTCD) standards shall be located in advance of the work location to inform the public (**SHA-1501**).

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Equipment Roadeo

OVERVIEW

The Equipment Roadeo event shall adhere to all safety policies as noted in the *Employee Safety & Health Manual* (SAFE) and the *Safety and Health Administration Guide* (SHA). They include, but are not limited to, the following: foot protection, eye protection, vehicle and equipment safety, high visibility apparel, head protection, and hand protection (**SHA-500**).

Designated first-aid stations and responders shall be identified in the job briefing prior to the event (**SHA-700**).

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Hot Box Operations

GENERAL OPERATIONS & PRECAUTIONS

Employees operating the hot box should observe the following general procedures and precautions:

- All employees operating the hot box must have adequate training.
- Review operator's manual before use.
- Use of a release agent is required prior to operating the hot box.
- Maximum temperature settings are as follows:
  - **Hot** mix – 250 degrees
  - **Cold** mix – 120 degrees

  Caution: Temperature settings are not to be adjusted above the maximum settings.

- The hot box is not to be towed at speeds greater than 60 mph.
- The hot box shall be turned off when towed. It is only to be turned on when parked on the lot, or on the job site.

CLEANING PROCEDURES

Employees should observe the following steps when cleaning the hot box:

1. Turn off the hot box.
2. Remove the remaining hot mix or cold mix.
3. Let equipment cool for at least 30 minutes.
4. Apply the release/cleaning agent and let sit for at least 30 minutes.
5. Pressure wash product off.
6. If all the hot mix or cold mix does not come off, repeat process.

Caution: The use of spud bars, hammers, and heavy equipment are prohibited. Never use diesel fuel to clean the equipment.

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"Lane Blade" Debris & Litter Removal

SAFETY ADVANTAGES

The Lane Blade tool is recommended for debris and litter removal from roadways over other removal methods due to the following safety advantages:

- Removes debris quickly.
- Workers remain in cab, out of inclement weather, and not on foot.
- Potentially reduces injury claims.
- Improves employee morale to be provided access to a safer tool.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall incorporate the following procedures and safety precautions when using Lane Blade for debris and litter removal:

- Assess the task before deploying Lane Blade to determine if Lane Blade is the correct tool for debris removal.
- Proper personal protective equipment (PPE) shall always be worn in accordance with existing policies. (**SHA-500**)
- The operator and occupants in vehicle shall always wear seat belts.
- Use rotating, flashing lights on work vehicle.
- Operate Lane Blade below 20 mph to reduce danger of ricocheting debris into adjacent lanes.
- Rear escort vehicle shall be used if the equipment or vehicle cannot maintain the posted speed limit during operation. (**SHA-1602**)
- On highways four lanes or greater, a truck mounted attenuator with a rear mounted flashing arrow shall be used as a rear escort vehicle.
- Truck mounted attenuators shall be used in accordance with **SHA-1718**.

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General Responsibilities & Requirements

REFERENCES

29 CFR 1926; KRS 186.010 and KRS 189.125; 603 KAR 5:025

DEFINITIONS

Competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. [29 CFR 1926.32(f)].

Fully controlled access highway – A highway which gives preference to through traffic, which shall have access only at selected public roads or streets, and which shall have no highway grade crossing or intersection (603 KAR 5:025).

Qualified person – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project. [29 CFR 1926.32(m)]

SUPERVISOR RESPONSIBILITIES

Supervisors shall:

- Verify that operators are capable and qualified before allowing the equipment to be operated unsupervised.
- Report safety hazards concerning assigned vehicles or equipment, both those personally observed and those reported by other employees, to the proper authority (**SHA-412**).
- Observe the same safety precautions as those required of all employees.

OPERATOR RESPONSIBILITIES

The driver or operator of a state-owned or state-leased vehicle or piece of equipment shall observe the following vehicle safety precautions:

- Follow the manufacturer operator and maintenance manuals in the absence of regulatory standards.

- Perform safety inspections and walk-arounds of assigned vehicles and equipment each morning before putting them into operation.

  Note: Equipment that does not require a license plate shall be inspected in the same manner as licensed vehicles.

  Items to check during safety inspections and walk-arounds may include, but are not limited to, the following:

  - Items properly secured – Cabs of vehicles shall be kept free of loose work materials and trash. All required equipment, including first-aid kits, fire extinguishers, and tools, shall be secured.

  - Glass – All cracked glass on vehicles and equipment shall be replaced prior to use if the operator's vision is restricted or distorted.

  - Horn – An operable horn is required on all vehicles and equipment.

  - Mirrors, lights, turn signals, brakes (including emergency brake)

  - Steps and running boards (clean and in good repair)

  - Tires and wheels – All licensed-vehicle tires shall be properly inflated and shall never have less than 1/16 inch of tire tread, except trucks, which shall have at least 1/8 inch of tread on front tires. Non-licensed equipment shall not have bald tires or tires with exposed cord.

    Caution: When airing loose tires mounted on rims with split lock rings, employees shall follow procedures outlined in **SHA-405-1**.

  - Exhaust system, steering mechanisms, wheel bearings

  - Towing systems – Equipment being towed shall have two safety chains properly connected to the towing vehicle.

OPERATOR RESPONSIBILITIES (CONT.)

- ♦ Required signage and warning lights – All equipment designed to operate under 25 mph shall have a SLOW-MOVING VEHICLE emblem mounted on the rear in a readily visible location, preferably to left center of equipment.

  All equipment and vehicles which will operate under the posted speed limit or other equipment producing traffic hazards to motorists shall have operable warning lights and a shadow vehicle following. Shadow vehicles shall comply with **SHA-1602.**

- ♦ Backup alarms – For backing all equipment, a backup alarm that meets federal standards is required. Backup alarms shall be maintained in an operable condition.

Caution: Operators shall not be permitted to bypass, override or defeat any manufacturers' installed safety devices, interlocks, or features. Equipment repair technicians may be permitted to do so under controlled conditions for repair or diagnosis at discretion of the equipment manager.

- ➢ Report through chain of command any safety hazards or inoperable safety features concerning an assigned vehicle or equipment.

- ➢ Use the provided seat belt in the manner in which the manufacturer intends, and ensure that all passengers buckle their seat belts *before* operation of the vehicle or equipment.

  Caution: Seat belts shall not be secured behind the seat of any state-owned or state-leased vehicle or equipment, or altered by other means which prevents required seat belt use by operators or passengers.

Operators shall observe the following precautions when vehicles or equipment are actively in operation:

- ➢ Cell phones or other electronic devices shall not be used while operating state-owned or state-leased vehicles or equipment.

- ➢ Emergency brakes shall be set on all unattended equipment. Vehicles with automatic transmissions shall be left in "park." Vehicles with standard transmissions shall be left in "reverse" gear when facing downhill and "low" gear when facing uphill.

OPERATOR RESPONSIBILITIES (CONT.)

- Chocking or blocking of wheels is required when jacks are used for changing tires or the vehicle is parked on an incline.

- All vehicles and equipment shall have engines turned off while refueling.

  Caution: Cell phones and other electronic devices shall be turned off while refueling.

- A backup guide is highly recommended when rear vision is restricted. If no backup guide is available, the operator shall walk around the vehicle before backing and continually check for the presence and position of individuals on foot.

- Off-road equipment traveling a roadway shall utilize a shadow vehicle. Shadow vehicles shall comply with **SHA-1602**.

- Most earthmoving equipment requires a sight distance of 1,000 feet to safely turn around. Flag persons shall be positioned when this sight distance is not available.

Operators shall comply with the following prohibited uses of toll roads, interstate highways, and other fully controlled access highways at all times (603 KAR 5:025):

- Bicycles or motor scooters
- Vehicles drawn by animals
- Animals led, ridden, or driven on hoof
- Vehicles with improperly secured loads or loaded with animals not properly confined
- Vehicles with metal treads and vehicles with caterpillar treads
- Farm implements which are not being transported on a straight truck or truck trailer combination or a semitrailer
- Construction equipment other than motor trucks, except by special permit
- Moped, as defined in KRS 186.010(5)

EMPLOYEE RESPONSIBILITIES

All employees, including operators, shall comply with the following:

- Smoking is not permitted in a KYTC-owned or leased vehicle (**GAP-1104-2**).

- Buckle seat belts prior to the operation of a vehicle or equipment.

  Caution: Seat belts shall not be shared.

- Maintain unobstructed hearing while working around or while operating motor vehicles.

  Employees shall not use any type of earphone device in one or both ears. This prohibition does not apply to hearing aids, personal protective equipment, or use of earphone-type, two-way radio systems, or cell phones required for safety.

- Cell phones or other electronic devices shall not be used while working around or in close proximity to vehicles or equipment while they are in use.

- Personnel shall not ride on the sides or top of equipment. Both the operator and the person riding shall be held accountable.

- When working on foot, employees must always communicate their presence and position to equipment operators.

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Following Distance

GENERAL PRECAUTIONS

Vehicles in convoy or maintenance operations shall have at least 300 feet between vehicles.

THREE-SECOND RULE

Vehicle operators should use the "three-second rule" to determine safe following distance. When the vehicle travelling in front of you passes an obstacle, count "1-one thousand, 2-one thousand, 3-one thousand." If the vehicle you are in has not passed the same obstacle at the end of "3-one thousand," you are travelling at a safe following distance.

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Transport Operations

REFERENCES

See **SHA-1701** for additional vehicle and equipment safety responsibilities.

SUPERVISOR RESPONSIBILITIES

The supervisor in charge of the equipment being moved during transport operations shall provide the following:

- Traffic control measures, including flag persons and signs, as necessary. (**SHA-1500**)
- Escort vehicles (**SHA-1602**)
  - On two-lane highways, an escort vehicle shall be provided anytime equipment is transported on "lowboys" and a wide-load situation exists. The escort vehicle shall have an adequate warning light system and be positioned to offer maximum protection to oncoming motorists, including in curves and over hills.
  - All loads over 10 1/2 feet in width or 75 feet in length (depending on road alignment) shall have an escort vehicle provided. An escort vehicle shall also be provided whenever the blade or bucket on equipment extends over the lowboy.

GENERAL PRECAUTIONS

Employees participating in transport operations shall take the following general safety precautions:

- The following weight capacities shall not be exceeded:
  - Trailer load
  - Two-vehicle maximum towing load
  - Vehicle tongue weight
- Trailer taillights and turn signals shall be visible and in working condition.
- Cargo shall be secured by appropriately rated transport chain or web-strap bindings (**SHA-1627**).

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Drivers' Licenses

LICENSE REQUIRED

In accordance with Kentucky Transportation Cabinet (KYTC) policy (**GAP-1104-2**) and state law (KRS 186.620), all employees operating state vehicles and road equipment must have a valid driver's license with the appropriate endorsements as outlined in the classification specifications.

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Driver Responsibility

REFERENCE GAP-1104-2

EXPECTATIONS

An operator of a Kentucky Transportation Cabinet (KYTC) owned or leased vehicle is expected to abide by all traffic laws and KYTC policies, and is responsible for the safe operation of the vehicle.

Any non-driving activity conducted while driving is a potential distraction and increases the risk of crash or injury. Therefore, employees shall refrain from driving or operating any vehicle or piece of equipment while distracted. This includes any activity that diverts the operator's attention including talking on the phone, texting, eating, drinking, talking to others in the vehicle, and adjusting entertainment or navigation systems.

Caution: Sending or reading a text takes the operator's eyes away from the road an average of five seconds. At 55 mph, that equates to driving the length of a football field with your eyes closed.

LIABILITY

Operating a KYTC vehicle does not grant the operator immunity from state or federal law. In case of an accident or violation of the law, the operator shall be held to the same degree of responsibility as if operating a privately-owned vehicle. The operator may also be subject to disciplinary action by the KYTC.

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Passenger Cars & Trucks

OPERATOR DESIGNATION AND RESTRICTIONS

The Kentucky Transportation Cabinet (KYTC) Secretary, division heads, or chief district engineers may prohibit any employee from operating KYTC-owned or leased equipment or passenger vehicles when such restriction is in the best interest of the employee, KYTC, or the general public.

Immediate supervisors shall have the authority to determine who will operate a department vehicle among their personnel.

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Subject

Heavy Duty Trucks

REFERENCES

See **SHA-206-3** and **SHA-1701** for information on pre-operation safety checklists, as well as additional vehicle and equipment safety responsibilities.

OPERATOR RESPONSIBILITIES

Operators of heavy duty trucks shall observe the following safety precautions:

- All trucks shall be checked prior to and after each use to ensure operating systems are functioning properly.
- Employees riding in trucks with seat belts shall wear belts whenever truck is in operation.
- The truck cab compartment shall contain no more passengers than the number of available seat belts.
- When driving too slowly for traffic conditions, employees shall pull safely off roadway to let traffic pass.
- Dump trucks shall be equipped with mud flaps.
- All loads containing materials subject to shifting or dislodging shall be covered with a tarp.

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Bulldozers

REFERENCES

See **SHA-206-3** and **SHA-1701** for information on pre-operation safety checklists, as well as additional vehicle and equipment safety responsibilities.

GENERAL PRECAUTIONS

Bulldozer operators shall observe the following safety precautions:

- Bulldozers shall be equipped with the following when used in site-cleaning operations:
  - An overhead guard which shall be 1/8-inch steel plate or 1/4-inch woven wire mesh with openings 1 inch or smaller.
  - A rear guard which shall be 1/4-inch woven wire mesh with openings 1 inch or smaller.

- When descending a slope, the operator shall:
  - Doze two or three blades full of dirt to the edge of the slope.
  - Ride down the slope with the edge of dirt in front of the blade.

  Caution: The operator shall not lower the blade in an attempt to regain lost dirt, as doing so could overturn the bulldozer.

- Extreme care shall be used when working near cuts or fills.

- Prior to leaving a bulldozer unattended, the operator shall completely lower the blade.

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Cranes

REFERENCES

See **SHA-206-3** and **SHA-1701** for information on pre-operation safety checklists, as well as additional vehicle and equipment safety responsibilities. **SHA-407-10** provides specific safety information on working around power lines.

OPERATOR REQUIREMENTS

Crane operators shall be qualified and certified per OSHA Standard, 29 CFR 1926.1427, and all operations of cranes shall be in accordance with 29 CFR 1926.1427.

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VEHICLE & EQUIPMENT SAFETY	Oil Distributors

REFERENCES

See **SHA-206-3** and **SHA-1701** for information on pre-operation safety checklists, as well as additional vehicle and equipment safety responsibilities. **SHA-500** provides information on personal protective equipment (PPE).

GENERAL PRECAUTIONS

Oil distributer operators and other employees shall observe the following general safety precautions:

- Two dry-chemical fire extinguishers having at least a 20-pound ABC rating shall be mounted on the front or side. Extinguishers shall be placed approximately 20 feet to rear of distributor while oil is being heated.
- Exposed shaft couplings and pulley belts shall be shielded.
- Whenever possible, oil distributor burners shall be lit in a segregated area away from vehicles and other structures.

  Caution:
  - Burners shall not be lit within 50 feet of gasoline, diesel, or kerosene storage.
  - Burners shall not be operating while distributor is being driven.
  - Oil shall not be heated when oil level is below flues.

- The hand spray bar and other lines shall be cleaned after each day's use. Waste materials shall be sprayed into a container and collected as part of the hazardous waste program found online at:

  https://eec.ky.gov/Environmental-Protection/Waste/hazardous-waste/Pages/default.aspx

  Caution:
  - Gasoline shall not be used for cleaning purposes.
  - Employees shall not transport open containers of gasoline on the oil distributor.

GENERAL PRECAUTIONS (CONT.)

- On windy days, employees shall:
  - Use extreme care to prevent oil from being blown onto private cars and other property.
  - Work so the wind will carry oil vapor away from truck exhaust or burners.

    Caution: This type of operation requires maintaining steps and platforms in a non-slippery condition. Personnel shall be provided a grab bar or railing when operating from rear of distributor.

- Special care shall be given to keep taillights clean and free of oil.

- LP gas shall be limited to one container per vehicle, with a capacity of not more than 100 pounds when stored within buildings. All containers' valves shall be closed.

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	Chapter VEHICLE & EQUIPMENT SAFETY
	Subject Forklift Trucks

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

SUPERVISOR RESPONSIBILITIES

Only properly trained and authorized personnel shall be permitted to operate forklifts. The immediate supervisor is responsible for ensuring the proper training of forklift truck operators. (Certifications are valid for up to 3 years). No one under the age of 18 shall be allowed to operate a forklift.

OPERATOR RESPONSIBILITIES

Forklift truck operators shall:

- Inspect forklift trucks prior to use according to either TC 25-165, *Internal Combustion Engine Industrial Truck Operation Checklist*, or TC 25-166, *Electric Industrial Truck Daily Operation Checklist* (**Exhibit 9028** and **Exhibit 9029**).

  Safety requirements include, but are not limited to, the following:
  - An overhead guard shall be provided.
  - Forklifts shall be equipped with a 5-pound ABC or all-purpose fire extinguisher (**SHA-206-4**).
  - Forklifts shall have an audible horn.

- Lower loads to the lowest position possible when moving from one location to another.

- Prior to leaving a forklift unattended:
  - Fully lower forks.
  - Place controls in neutral.
  - Engage emergency brake.
  - Shut off power.
  - Chock wheels when parked on an incline.

PROHIBITED ACTIVITIES

Forklift truck operators shall not:

- Allow other employees to ride on forklifts.
- Lift personnel unless an approved safety platform is provided. The platform shall have toe boards, handrails, and mid-rails. (**SHA-408**)
- Permit personnel to be positioned beneath any raised portion of the forklift.
- Permit arms and legs to be placed between uprights of mast or outside running lines of truck.
- Use cell phones or any other electronic devices including ear buds, tablets, kindles, or like devices while operating state-owned or state-leased forklifts.

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Graders

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

LIGHTING & SIGNAGE REQUIREMENTS

All equipment and vehicles operating under the posted speed limit, as well as other equipment producing traffic hazards to motorists, shall have operable warning lights and a shadow vehicle following. Shadow vehicles shall comply with **SHA-1602.**

All graders shall have operable warning lights, a working backup alarm, and a SLOW-MOVING VEHICLE sign mounted in the rear, preferably to left center.

GENERAL PRECAUTIONS

Employees shall observe the following safety precautions when operating or working in the vicinity of graders:

- Riders shall not be permitted at any location other than seated in grader cab.
- The blade shall be lowered to the ground when grader is left unattended.
- Graders used for snow and ice removal shall have a reflective guide bar attached to the blade corner nearest the traffic side.

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Front-End Loaders, Bantams, Gradalls, & Excavators

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

LIGHTING & SIGNAGE REQUIREMENTS

All equipment and vehicles operating under the posted speed limit, as well as other equipment producing traffic hazards to motorists, shall have operable warning lights and a shadow vehicle following. Shadow vehicles shall comply with **SHA-1602.**

All above-mentioned equipment shall have operable warning lights and a SLOW-MOVING VEHICLE sign mounted in rear, preferably to left center, as well as a working backup alarm.

OPERATOR RESPONSIBILITIES

Employees shall observe the following safety precautions when operating front end loaders, bantams, gradalls, and excavators:

- Wear seat belts.
- Lower bucket to the ground and engage parking brake upon shutting down or leaving equipment.
- Carry the bucket as close to the ground as possible when moving forward for best machine stability and visibility.
- Whenever possible, travel forward with bucket loaded when backing down steep inclines.
- Properly chock wheels when parked on incline.

PROHIBITED ACTIVITIES

Operators shall <u>not</u>:

- Operate equipment with personnel working directly beneath bucket.
- Elevate or transport personnel in the materials bucket.

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Backhoes

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

LIGHTING & SIGNAGE REQUIREMENTS

All equipment and vehicles operating under the posted speed limit, as well as other equipment producing traffic hazards to motorists, shall have operable warning lights and a shadow vehicle following. Shadow vehicles shall comply with **SHA-1602.**

All above-mentioned equipment shall have operable warning lights and a SLOW-MOVING VEHICLE sign mounted in rear, preferably to left center, as well as a working backup alarm.

OPERATOR RESPONSIBILITIES

Backhoe operators shall observe the following safety precautions:

- Backhoes shall:
  - Be equipped with roll bars.
  - Have a working backup alarm.

- Operators shall:
  - Wear seat belts.
  - Extend outriggers and be on solid footing before beginning work.
  - Lower the bucket, boom, and outriggers when not in use.

  Caution: The boom shall not be swung over or toward employees.

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Tractors

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

LIGHTING & SIGNAGE REQUIREMENTS

All equipment and vehicles operating under the posted speed limit, as well as other equipment producing traffic hazards to motorists, shall have operable warning lights and a shadow vehicle following. Shadow vehicles shall comply with **SHA-1602.**

All above-mentioned equipment shall have operable warning lights and a SLOW-MOVING VEHICLE sign mounted in rear, preferably to left center, as well as a working backup alarm.

OPERATOR RESPONSIBILITIES

Tractor operators shall observe the following safety precautions:

- Wear seat belts at all times.
- Place a protective shield over the power takeoff.
- Be especially watchful for culverts and other fixtures that may be hidden by grass or weeds.

PROHIBITED ACTIVITIES

Tractor operators shall <u>not</u>:

- Allow other employees to ride on tractors or attached equipment.
- Operate tractors on slopes greater than 3:1 or 18 degrees.

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Rollers

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

LIGHTING REQUIREMENTS

All rollers shall be equipped with warning lights which shall be functional during maintenance operations.

TOWING REQUIREMENTS

When rollers are towed, warning lights shall be in operation, and roller drums shall be chained to the frame.

OPERATOR RESPONSIBILITIES

Roller operators shall observe the following safety precautions:

- Wear seat belts when operating equipment.
- Exercise extreme care on shouldering operations, especially near embankments.
- Ensure emergency brakes are operational.

Caution: Roller operators shall not use steel-wheeled rollers to roll shoulders less than 18 inches in width.

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Bucket Trucks (Aerial Lifts, "Cherry Pickers," Autocranes, & Ladder Trucks)

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

CAUTION

The following special circumstances shall be considered prior to authorization and operation of bucket trucks and other aerial lifts:

- Power Lines
  Bucket trucks used around energized equipment shall have an insulated platform. An aerial lift must maintain at least 10 feet (3 meters) minimum clearance between electrical lines and any part of the equipment. **SHA-407-10** provides additional information for working around power lines.

- High Winds
  Equipment such as bucket trucks and aerial lifts should not be used when winds are expected to be sustained 30 mph or above, or there is a high probability of gusts of 30 mph or above. **SHA-1601-6** provides additional information on responding to damaging wind or tornado events.

- Traffic Signal Work
  Traffic-signal work shall comply with **SHA-500** and **SHA-1500**. The lift or platform must not extend over top of active traffic lanes.

SUPERVISOR RESPONSIBILITIES

Supervisors shall:

- Ensure only devices designed and approved for lifting personnel may be used as aerial lifts.

- Permit only trained and authorized personnel to operate a bucket truck or other aerial lift.

SUPERVISOR RESPONSIBILITIES (CONT.)

- Maintain a record of written monthly inspections of the bucket truck and boom equipment on TC 25-168, *Aerial Device Bucket Truck Daily Checklist* (**Exhibit 9007**).

- Ensure annual dielectric testing of insulation values.

- Ensure bucket trucks or other aerial devices are not modified without first obtaining written permission from the manufacturer.

OPERATOR RESPONSIBILITIES

Bucket truck (aerial lift, "cherry picker," autocrane, and ladder truck) operators and employees working in the vicinity shall observe the following safety precautions:

- Use lift equipment only as a work platform from which work is performed.

- Ensure bucket trucks or other aerial devices are not field modified without first consulting the on-site supervisor and obtaining written permission from the manufacturer.

- Use only nonconductive hydraulic fluids.

  Note: Adding the incorrect fluid will require purging of the entire system and a new dielectric test.

- Prior to beginning work:

  - Chock wheels.
  - Properly use and position outriggers (stabilizers).

- Do not exceed load limits of a bucket, boom, or jib crane as specified by the manufacturer.

  Note: The boom shall not be used to lift or move materials unless equipped with a jib boom rated for lifting.

- Do not exit, or permit another employee to exit, the platform while it is elevated.

OPERATOR RESPONSIBILITIES (CONT.)

- Always stand firmly on the floor of the basket. Do not sit or climb on the edge of the basket, or use planks, ladders, or other devices to extend the work area.

- Utilize a personal fall arrest system (PFAS) at all times in the bucket or platform. The PFAS shall consist of a body harness adjusted for proper fit, and either a self-retracting lanyard (SRL) or fall restraint lanyard that will prevent ejection from the platform.

  Caution: PFAS lanyards shall only be connected to designated anchor points provided by the equipment manufacturer for life safety. PFAS lanyards shall not be attached to any other point, including adjacent structures or equipment.

- Truck beds shall be kept orderly and clean.

- Booms shall be kept free of dirt, oil, and road grime.

- Prior to transit:
  - The boom and bucket shall be cradled and locked down, either hydraulically or manually.
  - Overhead clearances shall be checked.

PROHIBITED ACTIVITIES

Bucket trucks or other aerial personnel lifts shall not be used for purposes of transporting personnel wishing to egress onto an elevated surface or location.

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VEHICLE & EQUIPMENT SAFETY	Truck-Mounted Attenuators

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

GENERAL PRECAUTIONS

Employees shall observe the following safety precautions when working with truck-mounted attenuators:

- Truck-mounted attenuators may be utilized on moving or stationary work sites.

  Note: On moving jobsites, appropriate rear-mounted warning signs shall be displayed to provide advance warning.

- Truck-mounted attenuators shall be mounted on well-maintained and reliable vehicles, which shall follow attenuator manufacturer's guidelines for minimum operating weight.

- Flashing-arrow panels shall be mounted on the vehicle. A 4-foot x 8-foot arrow panel is the appropriate size for high-speed, high-volume highways. (**SHA-1719**)

- All safety devices and lighting shall be kept clean and in proper working order.

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Arrow Panel

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

REFERENCES

Manual on Uniform Traffic Control Devices, (MUTCD) Section 6F.61 and Figure 6F-6

GENERAL PRECAUTIONS

Arrow panels are key to work-zone safety; therefore, employees shall observe the following precautions:

- Arrow panels shall be maintained and repaired in accordance with the manufacturer's recommended guidelines, using only the manufacturer's listed and approved parts.

  An arrow panel with burnt-out lamp elements or inoperative parts shall be repaired immediately.

- Arrow panels shall meet the minimum size, visibility, legibility distance, number of elements, and other specifications according to the MUTCD.

- Truck-mounted or trailer-mounted arrow-panel vehicles shall be maintained in reliable condition

- Arrow panel trailers shall be detached from the towing vehicle while the panel is in use.

PROHIBITED ACTIVITIES

Arrow panels shall not be towed with the display active as part of a mobile operation.

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Sky Trimmer

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

GENERAL PRECAUTIONS

Employees working with sky trimmers shall follow all manufacturer guidelines for operation, maintenance, and inspection as detailed in the owner's manual.

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Emergency Lighting

REFERENCES

Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition, Chapter 6H, Typical Applications
KRS 189.232, Definition of "highway work zone"
KRS 189.910, Definitions for KRS 189.020 to 189.950
KRS 189.920, Flashing lights
KRS 189.940, Exemptions from traffic regulations

PURPOSE & SCOPE

Emergency lighting shall be used to increase the visibility of KYTC vehicles. An adequate minimum level of warning lighting on such vehicles is established to increase the safety of KYTC employees, as well as the traveling public, and to improve overall consistency statewide.

SUPERVISOR RESPONSIBILITIES

Lighting purchases outside of this policy's guidelines shall have approval of the chief district engineer or the division head (or designee) and should be based on sound engineering judgement.

GUIDELINES

The intent of these guidelines is for every KYTC vehicle to have a minimum level of emergency lighting.

Warning light guidelines for KYTC vehicles are as follows:

- All fleet vehicles purchased after March 17, 2017, shall comply with these guidelines.
- Vehicles requiring fleet lighting repairs will be upgraded to comply with these guidelines depending on remaining life of the vehicle.
- All lighting shall meet SAE J595 or SAE J845 Class 1 Standard, and SAE J578 for colors as verified by an AMECA (Automotive Manufacturers Equipment Compliance Agency) certified lab.

GUIDELINES (CONT.)

- Recommended minimum lighting levels are as follows:

Table 5. Minimum Emergency Lighting Levels for Vehicles

Exposure	Vehicle Type Examples	Lighting
Low-Medium - Periodically stopped in roadway and/or periodically operates at slow speeds on roadway	Sedans	**Level 1** – One flashing LED roof-mounted 15" (min) Mini-Bar w/360 visibility Use colors ***Amber/White*** (front) ***Amber/White*** (rear).
High - Frequently stopped in roadway and/or operates at slow speeds on roadway	Sedans, Pickups & SUVs	**Level 2** – Two front-facing mounted LED strobes; use color ***Amber*** or ***White*** ***and*** Two rear-facing LED strobes mounted rear of vehicle. Use color **Amber/*White*** One flashing LED roof-mounted 22" (min) Mini-Bar w/360 visibility. Use colors ***Amber/White*** (front) ***Amber/White*** (rear).

- It is recommended that the predominant light pattern be flashing.
  - A pattern which alternates from one side of the vehicle to the other is preferable to one in which lights on both sides of the vehicle are flashing at the same time.
  - It is also recommended that a slower flash frequency be used, since this will give a higher response to the longer light pattern than a short flash.
  - A flash pattern such as a double flash or a pattern similar to a rotating beacon will provide an appearance that enables vehicle identification and should improve response.

- Since most maintenance vehicles are used both in the day and at night, a system that automatically dims the top-mounted light strobes should be considered based on engineering judgment.

  Caution: Using too many lights or lights with too high an effective intensity may impede the ability of other drivers to detect a pedestrian.

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Portable Changeable Message Signs (PCMS)

REFERENCES

Manual on Uniform Traffic Control Devices, (MUTCD) 6F.60

GENERAL OPERATIONS & PRECAUTIONS

Employees shall observe the following safety precautions when working with portable changeable message signs (PCMS):

- PCMS is a supplement to the static sign; it is not to be considered a substitute.
- PCMS shall meet the minimum visibility and legibility standards established in the MUTCD.
- PCMS should be placed off the shoulder of the roadway and behind a traffic barrier, if practical. Where a traffic barrier is not available to shield the PCMS, it should be placed off the shoulder and outside of the clear zone.

  Note: If a PCMS has to be placed on the shoulder of the roadway or within the clear zone (rare occurrence), it should be placed behind a guardrail or barrier. If it cannot be protected by a guardrail or barrier, then it is recommended that orange cones or drums be used to increase the likelihood that motorists will notice the PCMS.
- When PCMS are not being used to display TTC messages, they should be relocated such that they are outside of the clear zone or shielded behind a traffic barrier and turned away from traffic. As noted previously, if relocation or shielding is not practical, PCMS should be delineated with retroreflective TTC devices.
- Vehicles shall not be parked within gore areas.
- PCMS should not be placed within the natural path of a driver (such as, the outside of a curve).

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Retroreflective Conspicuity

REFERENCES

NCHRP 13-02, *Guidelines for the Selection and Application of Warning Lights on Roadway Operations Equipment*, March 31, 2008
SAE J845 (*Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*) Current Edition, Class 1, Class 2, Class 3
SAE J595 (*Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles*) Current Edition, Class 1, Class 2, Class 3
SAE J578 (*Color Specification for Electric Signal Lighting Devices*) Current Edition

GUIDELINES

Retroreflective conspicuity chevron tape should be considered based on sound engineering judgement for "High Exposure" vehicles for additional visibility.

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Parking Equipment

GUIDELINES

Employees shall observe the following guidelines when parking KYTC-owned or leased equipment:

- All equipment shall be parked as far as possible off the roadway surface and on the same side of the highway.

  Caution: If both sides of the highway must be used for equipment parking, employees shall use utmost caution in crossing open lanes of traffic.

- When feasible, vehicles should always back into a space when parking or turning around in order to pull out for clearer visibility when exiting.

- Avoid parking in the following areas:
  - Near obstacles that may be concealed in blind spots, such as fire hydrants or posts
  - Within 50 feet of a flagger station
  - In the blind spot of another parked vehicle or equipment.

Note: Vehicles should only be parked in designated parking spaces, away from garage doors, and clear of travel paths of other vehicles or equipment.

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U-Turns

REFERENCES

See **SHA-1701** for additional vehicle safety responsibilities.

GENERAL PRECAUTIONS

Vehicle operators should avoid U-turns on limited access, high speed roadways or areas by using adjacent interchanges whenever possible.

Operators should use reasonable judgment in proceeding to a location (such as a ramp interchange) where a safe U-turn can be executed.

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Disabled Vehicles

GUIDELINES

Disabled vehicles shall be moved as far off the pavement as possible, with emergency lighting (including flashers) activated.

For CDL drivers operating commercial vehicles, emergency/reflective warning devices shall be placed in accordance with the FMCSA and DOT requirements.

For all other vehicles, cones or other emergency reflective warning devices (if available) may be placed at least 100 feet (30 meters) to the rear of the disabled vehicle, or up to 300 feet (100 meters) to the rear of the disabled vehicle in situations where sight distance is limited.

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Aggressive Driving

GUIDELINES

Employees shall not engage in aggressive driving. It is a dangerous and illegal behavior that will not be tolerated from employees driving or operating KYTC-owned or leased vehicles and equipment.

If an employee encounters an aggressive or otherwise dangerous driver, the employee shall:

- Pull over at the first safe opportunity.
- Let the vehicle pass.
- Dial 911 to report the incident.

Caution: Employees shall not engage with aggressive drivers in any way including, but not limited to, attempting to block the aggressive driver's path, speeding up, or responding aggressively.

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Winter Driving

REFERENCES

See **SHA-1701** for additional vehicle and equipment safety responsibilities.

GENERAL PRECAUTIONS

Employees shall adhere to the following safety tips when driving during winter weather:

- Recognize that driving conditions can change constantly.
- Check that windshield wipers are in good condition.
- Salty residue can diminish the effectiveness of lights by fifty percent; therefore, remove accumulated snow, ice, and salt from vehicle windows, mirrors, and lights before driving.

  Note: The entire windshield should be cleaned so that sight is not obstructed.
- Scrape, brush, defrost, or wipe off inside fog.
- Gently accelerate, brake, and turn when initially assessing road conditions. Driving at too high of a speed on slippery roads is a common hazard.
- Allow extra stopping distances between vehicles, especially on ice.

  Caution: Depending on air and surface temperatures, braking distance on ice can be 4 to 10 times greater than that of dry pavement.

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Stockpile Safety

REFERENCES

See **SHA-206-3** for additional vehicle and equipment safety responsibilities.

SUPERVISOR RESPONSIBILITIES

Safety personnel or the on-site supervisor shall be consulted for safe stacking slopes.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall take extreme care when sampling or working near stockpiles, including the following safety precautions:

- Sampling from steep sloped stockpiles shall be performed by machine.

  Caution: Steep sloped stockpiles may fall to the angle of repose without warning.

- Stockpiles are stable when sloped or benched at the angle of repose (approximately 1 vertical to 1 ½ horizontal).

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Conveyor Safety

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

WARNING

Serious injuries and death have resulted from clothing and other items getting caught by a conveyor and pulling an employee into the pinch point between the roller and the belt.

Any loose item can become caught, including the following:

- Loose-fitting clothing
- Long hair (including beards)
- Jewelry, such as chains and watches
- Shoestrings
- Tools

Note: Virtually any tool can be grabbed and pulled when it comes into contact with a conveyer.

Therefore, employees should avoid wearing loose clothing items; band the ends of sleeves and pant legs; tuck in or pin up long hair; remove jewelry; and never use tools near a moving conveyer belt.

GENERAL OPERATIONS & PRECAUTIONS

Employees shall:

- Follow all manufacturer guidelines for operation.
- Ensure conveyor belts are stopped prior to sampling material.
- Use a spotter if repositioning is necessary during use.
- Observe the following safety precautions when towing or transporting conveyers by roadway, due to the length and long rear swing clearance creating special hazards for other traffic:
  - An escort vehicle shall be provided, as well as a shadow vehicle equipped with an adequate warning light system.
  - Escort and shadow vehicles shall be positioned to offer maximum protection to oncoming motorists, particularly in blind spots such as curves and hills (**SHA-1602**).
  - A spotter shall be used for all backing and positioning while in transport.

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ADMINISTRATION GUIDE

Chapter

VEHICLE & EQUIPMENT SAFETY

Subject

Backing

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities. **SHA-1724** provides general information on parking equipment.

OPERATOR RESPONSIBILITIES

Operators and drivers shall:

- Avoid backing equipment whenever possible. If backing is the only option and no spotter is available, sound the horn as warning, then check all rear-view mirrors and unobstructed windows before beginning to back the vehicle.

- Avoid backing into intersections, over pedestrian crosswalks, or around corners.

- Take additional precautions when backing into traffic. A flagger or spotter may be needed and, in some cases, work zone protection may be required.

- Before backing a vehicle, the driver or passenger shall walk around the vehicle to determine that there is sufficient area to complete the backing maneuver. The driver should back the vehicle slowly and cautiously, looking to the rear while backing.

  Caution: The driver cannot assume that because an area was clear when the vehicle started backing, it will remain clear the entirety of the backing maneuver. A car may pull up or an employee or pedestrian may walk behind the vehicle.

  Therefore, it is necessary not only to determine clearance before getting in the vehicle, but to remain vigilant in checking for changing conditions throughout the duration of the backing maneuver.

OPERATOR RESPONSIBILITIES (CONT.)

If possible, a fellow employee should give guidance while the driver is backing the vehicle. The employee giving directions should stand in full view of the driver, as well as all vehicle and pedestrian traffic, and have an unobstructed view of the backing path. If these conditions cannot be met, additional signal persons should be used.

The driver is legally responsible for accidents that occur while backing a vehicle, even if another employee is giving guidance.

BACKING INTO A PARKING SPACE

Drivers shall observe the following special precautions when backing a vehicle into a parking space:

- Always park in designated parking areas.
- When parking in a designated lot, choose a space that allows the driver to pull forward when exiting the space.
- When necessary, back the vehicle into the parking space in order to be positioned to pull forward when exiting.

Note: When parallel parking at a curb, try to allow sufficient clearance in front of the vehicle to avoid backing when leaving.

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Chapter
VEHICLE & EQUIPMENT SAFETY

Subject
Scissor Lifts

REFERENCES

See **SHA-206-3** and **SHA-1701** for additional vehicle and equipment safety responsibilities.

DEFINITIONS

Scissor lifts – Work platforms used to safely move workers vertically and to different locations. Used in a variety of industries, including construction, scissor lifts differ from aerial lifts in that the lifting mechanism moves the work platform straight up and down by using crossed beams functioning in a scissor-like fashion.

SUPERVISOR RESPONSIBILITIES

Only trained workers shall be allowed to operate scissor lifts. Employers must comply with the following Occupational Safety and Health Administration (OSHA) standards to protect workers from hazards associated with scissor lifts:

- **General Industry**
  - 29 CFR 1910.23, *Guarding Floor and Wall Openings and Holes*
  - 29 CFR 1910.28, *Safety Requirements for Scaffolding*
  - 29 CFR 1910.29, *Manually Propelled Mobile Ladder Stands and Scaffolds (Towers)*
  - 29 CFR 1910.333, *Selection and Use of Work Practices*

- **Construction**
  - 29 CFR 1926.21, *Safety Training and Education*
  - 29 CFR 1926.451, *General Requirements*
  - 29 CFR 1926.452, *Additional Requirements to Specific Types of Scaffolds*
  - 29 CFR 1926.454, *Training Requirements*
  - 29 CFR 1926 Subpart V

RECOGNIZED HAZARDS

When extended and stationary, scissor lifts present fall hazards similar to scaffolding; therefore, users should take safety precautions to mitigate fall risk (**SHA-408-2**, **SHA-514**).

RECOGNIZED HAZARDS (CONT.)

Additionally, using scissor lifts safely depends on equipment capabilities and limitations, as well as safe work practices specific to scissor lifts.

When not used properly, scissor lifts can present a serious hazard to workers. OSHA's investigations have found that most scissor lift injuries and fatalities involve inadequate implementation of the following:

- Fall protection
- Stabilization
- Positioning

RESPONSE TO RECOGNIZED HAZARDS

Employees working with scissor lifts shall follow all manufacturer guidelines, and shall observe the following procedures and safety precautions in response to OSHA's identification of recognized hazards:

- **Fall Protection**

  Scissor lifts shall have guardrails installed to prevent workers from falling (See also **SHA-514** for information on personal protective equipment).

- **Stabilization & Collapse Prevention**

  Follow the manufacturer's instructions for safe movement. This usually rules out moving the lift in an elevated position.

  - Isolate the scissor lift or implement traffic control measures to ensure that other equipment cannot contact the scissor lift.
  - Select work locations with firm, level surfaces away from hazards that can cause instability (such as, drop-offs, holes, slopes, bumps, ground obstructions, or debris).
  - Use the scissor lift outside only when weather conditions are good. All scissor lifts have a wind rating for outdoor use. Operators shall always operate the scissor lift below this rating.

  Employees shall observe the following safety precautions to prevent collapse of scissor lifts:
  - Ensure that safety systems designed to stop a collapse are maintained and not bypassed.
  - Never allow the weight on the work platform to exceed the manufacturer's load rating.

RESPONSE TO RECOGNIZED HAZARDS (CONT.)

- Never allow equipment other than the scissor mechanism to be used to raise the work platform (such as, using a forklift to lift the work platform).
- Keep the lift from being struck by other moving equipment on the worksite by isolating the scissor lift or implementing traffic control measures.

➢ **Positioning**

- Select work locations that do not approach electrical power sources (such as, power lines, transformers) by at least 10 feet and that do not pose other overhead hazards (such as, other utilities, branches, overhangs).

  If the job task requires work near an electrical source, ensure that the worker is qualified and has received the required electrical training. Position the scissor lift to avoid electrocution, arc flash, and thermal burns when working near energized power lines.

  Caution: Since electricity can arc (jump) from the power line to the scissor lift or worker, electrocution can occur even if neither the scissor lift nor the worker touches the power line (**SHA-407-10**).

- Be aware of others within the work area when positioning a scissor lift. Crushing hazards are present in workplaces using scissor lifts and may expose workers nearby, even those not working on the scissor lift.

- Implement traffic control measures around the scissor lift to prevent other workers or vehicles from getting too close (**SHA-1500**).

- Use ground guides when operating or moving the scissor lift around the workplace.

MAINTENANCE

Scissor lifts shall be maintained in accordance with manufacturer guidelines to ensure safe use.

Manufacturer's maintenance and inspection information should include instructions for completion of the following tasks. If not, or if unsure about how to proceed, employees should consult the safety representative or immediate supervisor before taking any action.

MAINTENANCE (CONT.)

- Test and inspect controls and components before each use.
- Ensure that guardrail systems are in good working condition.
- Verify that brakes, once set, will hold the scissor lift in position.
- Verify tires are in good condition and inspected daily.
- Ensure batteries are properly charged and maintained.

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Chapter	Subject
HEALTH & WELLNESS	Overview

REFERENCES

101 KAR 2:150, *State Safety Program*

RATIONALE

Research suggests healthy employees are safe employees. Wellness programs are provided to employees as a preventative measure to help them avoid illness, while improving and maintaining their general health through education, communication, and a supportive work environment.

PURPOSE & SCOPE

In an effort to ensure a safe and healthy work environment and to comply with 101 KAR 2:150, the Kentucky Transportation Cabinet (KYTC) has assigned the Secretary's Office of Safety with the responsibility to develop, update, oversee, coordinate, evaluate, and administer the KYTC Safety and Health Program.

RESOURCES

Resources and tools are available to employees trying to create a healthy workplace, whether they are members of the Kentucky Employees' Health Plan (KEHP) or choose to waive health insurance with KEHP.

Employees may contact their designated Benefits Administrator to request a representative to speak to employees at a worksite regarding healthy workplaces, or to schedule a biometric screening day.

SECRETARY'S OFFICE OF SAFETY RESPONSIBILITIES

The Secretary's Office of Safety (SOS) shall:

- Participate in the annual KYTC Health Fair and screenings for employees at the Transportation Cabinet Office Building (TCOB).
- Assist individual districts in holding local employee health fairs.
- Share updated health and wellness information.
- Support ongoing state government health and wellness initiatives.

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Chapter	*Subject*
HEALTH & WELLNESS	Personal Hygiene

PURPOSE & SCOPE

Good personal hygiene is essential across all KYTC work environments, including field locations, labs, and plants. Germs are transmitted through hand-to-mouth contact, resulting in illness. Chemicals and bacteria easily enter the body through the eyes, mouth, ears, and nose.

To maintain a healthy workplace, employees must practice the basic personal hygiene measures outlined below.

GENERAL PRECAUTIONS

Employees should incorporate the following precautions into their daily routine:

- Wash hands before breaks, lunch, and immediately after work to mitigate the spread of germs and prevent illness.
- Personal protective equipment (PPE) such as eye and ear protection, respirators, and gloves, shall be provided to eliminate or minimize exposures and prevent direct contact (**SHA-500**). Request PPE through your immediate supervisor.

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Chapter	Subject
HEALTH & WELLNESS	Hearing Conservation

REFERENCES

29 CFR 1910.95(G), *Occupational Noise Exposure*
29 CFR 1926.52(D), *Occupational Noise Exposure*
29 CFR 1926.101(E), *Hearing Protection*
29 CFR 1904.10(C), *Recordkeeping Forms and Recording Criteria*
Kentucky Administrative Regulations Title 803

BACKGROUND INFORMATION

Sound consists of pressure changes caused by vibration or turbulence. These pressure changes produce waves emanating away from the source. Noise – *unwanted* sound – is one of the most pervasive occupational health problems, and is a by-product of many industrial processes.

Exposure to high levels of noise causes hearing loss and may cause other harmful health effects as well. The extent of damage depends primarily on the intensity of the noise and the duration of exposure.

Noise-induced hearing loss can be temporary or permanent. Temporary hearing loss results from short-term exposures to noise, with normal hearing returning after a period of rest. Generally, prolonged exposure to high noise levels over an extended period of time gradually causes permanent damage.

PURPOSE & SCOPE

The purpose of the hearing conservation program is to minimize occupational hearing loss by providing hearing protection, training, and referral for annual hearing tests to all employees working with equipment or in work areas that have noise levels at or above 85 dBA over an eight-hour time-weighted average (TWA).

SECRETARY'S OFFICE OF SAFETY RESPONSIBILITIES

Secretary's Office of Safety (SOS) is responsible for establishing the hearing conservation program and implementation guidance. Employees participating in the program should contact their designated safety coordinator or SOS team member if further information is needed.

PERMISSIBLE NOISE EXPOSURE IN GENERAL INDUSTRY & CONSTRUCTION

If employees are subjected to sustained sound exceeding 85 dBa, feasible administrative or engineering controls shall be utilized (**SHA-401**). If such controls fail to reduce sound levels, personal protective equipment (PPE) shall be provided and used to reduce sound levels to within the acceptable range (**SHA-510**).

If the variations in noise level involve maxima at intervals of 1 second or less, it is considered continuous. Protection against the effects of noise exposure shall be provided when the sustained sound levels exceed 85 dBa.

INJURY REPORTING

Every work-related personal injury or illness shall be reported immediately to the supervisor or as soon as the employee is physically able to do so (**SHA-700**).

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Chapter
HEALTH & WELLNESS

Subject
Nuclear Density Gauge Program

REFERENCES KRS 211.842, KRS 211.848, 902 KAR 100, and **CST 800**.

PURPOSE & SCOPE Kentucky Transportation Cabinet (KYTC) personnel involved in construction operations should be knowledgeable of and able to fulfill their responsibilities with respect to the care and handling of nuclear density gauges. The safety and welfare of the operator and the general public are paramount and shall take precedence over all other considerations.

DEFINITIONS *Nuclear gauge* (density meter) – A soil testing device that uses two different types of radioactive material to measure the moisture of soils and rock, as well as the density or compaction of such.

ADMINISTRATIVE RESPONSIBILITIES The Central Office, Division of Construction, is licensed under the provisions of 902 KAR 100 to possess and use nuclear density gauges. The oversight responsibilities, by license, fall under the designated radiation safety officer (RSO) named by the Director of the Division of Construction. All gauges are assigned and issued by the Division of Construction under the authority of this license (**CST-802** through **CST-805**).

REPORTING REQUIREMENTS All incidents, accidents, and personnel exposure to radiation in excess of ALARA (as low as reasonably achievable) or 902 KAR 100:019 limits shall be investigated and reported to KYTC and other authorities, as appropriate, within required time limits. The district RSO is responsible for reporting to the state RSO, who then reports to the proper authorities. (**SHA-1625**).

GENERAL PRECAUTIONS Because nuclear gauges use small amounts of radioactive material, certain laws and standards must be met to ensure the safe operation of such. KYTC is licensed to possess and use these devices by the Kentucky Cabinet for Families and Children. Operators of nuclear density gauges shall keep them in their possession or properly secured at all times.

Only those who are certified can operate and transport the density meter.

TRAINING & RECORDKEEPING

Potential operators should be given proper safety and hazardous materials training prior to issuance of their thermoluminescent dosimeter (TLD) badges. Training records should be available 5 years after the employees' last use of a gauge.

Employees should be trained on how to understand the TLD analysis reports every three years or when a change in reporting method occurs.

Operators should receive the following:

- Training in emergency procedures and recommended procedures for use
- Hazardous materials training (as required by Subpart H of 49 CFR) that shall be current within 3 years, if qualifying for vehicular transport of the gauges
- Training in biological effects and radiological health requirements prior to usage

The initial safety training received shall be, at a minimum, a radiation safety training class presented by one of the density gauge manufacturers. KYTC shall not conduct the initial safety training, but can provide hazardous materials training. Records should be updated on the NGI.

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Chapter	HEALTH & WELLNESS
Subject	Heat Exposure

REFERENCES

29 CFR 1910.151, 1926.50
Occupational Safety and Health Administration (OSHA) Heat Exposure
SHA-702, *Medical & First Aid*

TEMPERATURE MONITORING RESPONSIBILITIES

Safety personnel and supervisors are responsible for monitoring the on-site, daily weather and workplace conditions to determine if workers will be exposed to temperatures greater than 70 °F (21 °C), and conducting a heat hazard assessment as necessary.

Note: The National Weather Service should be the primary source used to monitor weather conditions, including forecasted temperatures. Alternative sources include Intellicast and Weather Underground. Regardless of source, use the closest weather station to the worksite location.

HEAT HAZARD ASSESSMENTS

When weather or workplace conditions are expected to exceed 70°F (21°C) for more than an hour during the work shift, a heat hazard assessment must be conducted to take into account environmental and work factors associated with heat stress and heat-related illnesses.

When conducting a heat hazard assessment, the following weather information is required:

- Air temperature (°F)
- Humidity (%)
- Wind speed (mph)
- Barometric pressure (inches)
- Longitude and latitude
- Cloud cover
- Solar irradiance

Work factors to consider when conducting a heat hazard assessment include metabolic work rate (physical exertion) and clothing.

PREVENTING HEAT ILLNESS

Supervisors should consider one or more of the following precautions to prevent heat-related illness:

- Adjust work schedules to ensure workers are acclimated to work in hot conditions.
- Schedule work requiring heavy physical exertion during the coolest parts of the day.
- Modify the work-rest schedule to shorten heat exposure periods by including frequent rest breaks.

  Note: Shorter, more frequent breaks are more effective than longer, less frequent rest breaks.
- Encourage adequate water intake at frequent intervals to prevent dehydration. (For example, encourage one 8-ounce cup of cool water or electrolyte replacement fluid every 15- 20 minutes.)
- The supervisor or foreman is responsible for making sure drinking water is provided, in addition to the following:
  - Ensure water containers are clean and sanitary prior to filling.
  - Ensure water containers are filled at a sanitary location.
  - Provide sufficient disposable cups and a place for disposing cups.
  - Ensure workers do not share cups, and do properly dispose of used cups.
  - Prohibit workers from opening the cooler top to fill cups; rather, workers should only use the provided spigot.
- Pure and cool potable water must be made available to workers at no additional cost.
  - Do not use water from irrigation, sprinklers, or firefighting systems.
  - Do not use water from a garden hose, as it may contain contaminants from the hose such as bacteria and other microbes.
  - Water quantities need to be sufficient, with at least 1 quart of water available per worker, per hour, for the entire shift.
  - Locate water containers as close as practicable to work sites at all times.
  - Encourage workers to frequently drink water and to not wait until feeling thirsty.
- Provide a shaded and/or air-conditioned space nearby for rest and water breaks.
- Train workers to recognize the signs and symptoms of heat-induced illness, heat illness prevention strategies, and immediate first aid (**SHA-702**).

PREVENTING HEAT ILLNESS (CONT.)

- Alert workers to extreme heat events or heat stress conditions and provide a short review of the heat-illness prevention strategies to consider throughout the day.
- Work in pairs (buddy system) and monitor each other for signs and symptoms of heat stress or illness.
- Avoid caffeine and alcohol before and while working in a hot environment.
- Ask employees to report existing illnesses or medical conditions that may put them at high risk of heat stress, such as diarrhea, fever, and infection.
- *Medically screen* for work in hot environments. *Medical Screening* – Take into consideration employee's medical history, physical fitness level, and any pre-existing conditions that could increase their risk of heat-related illness.

HEAT RELATED EMERGENCIES

When workers are exposed to heat stress conditions, it is critical to ensure that first aid and medical services are readily available in the event a worker suffers from a heat illness. As noted in **SHA-702**, in the absence of an infirmary, clinic, or hospital in proximity to the workplace, a fully stocked first-aid kit and a person adequately trained to render first aid shall be present at every jobsite for the duration of the job (29 CFR 1910.151, 1926.50).

Supervisors should check for inclusion of the following supplies in the on-site first-aid kit prior to working in heat stress conditions:

- Reliable oral thermometer for checking body temperature.
- Reliable instrument or timer for checking heart rate.
- Cool water or electrolyte replacement fluids.
- Cold packs or ice packs for treatment of heat stroke.
- Spray bottles with water or an available water source for treating heat stroke.

See **SHA-702** for the differences between heat cramps, heat exhaustion, and heat stroke, as well the signs, symptoms, and first-aid response to all three.

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JOB SAFETY ANALYSIS & PPE CERTIFICATION OF HAZARD ASSESSMENT

Job/Task:		**Location:**	Sheet ___ of ___
Date:	**Reference Location(s):**	**Department or District:**	
Submitted by:		**Reviewed by:**	**Forward signed copies to:** Secretary's Office of Safety Supervisor/Facility Manager District Safety Coordinator
Name of person conducting assessment ____ Date		Name of person reviewing ____ Date	
Required and/or Recommended Personal Protective Equipment:			

EXPLANATION OF JOB	HAZARDS			SAFE JOB PROCEDURES, CONTROLS, & TRAINING
	TYPE	SOURCE	BODY PART	

Note: Engineering, work practice, and/or administrative hazard controls such as guarding must be used, if feasible, before requiring employees to use personal protective equipment.

Equipment Procedures/Requirements

- Operate equipment in strict accordance with manufacturer's instructions.
- Report any observed defect or safety hazard to your supervisor immediately.

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JOB BRIEFING

INSTRUCTIONS: *This form shall be completed by the Supervisor, Superintendent, or Crew Leader in charge of the work/job site and kept on file for two months.*

SECTION 1: BRIEFING INFORMATION

Reason for the job briefing: ☑ Start of Job ☐ Change in Job ☐ Restart of Job

CREW NAME	CREW NUMBER	DATE	TIME	
David County Maint.	999	1/14/25	07:05	☑ AM ☐ PM

SECTION 2: JOB DESCRIPTION *(Text limited for accurate printing. Use Section 2 continuation page if needed.)*

Setting new stop sign, post and post anchor at intersection of Ky 999 & US 000.

SECTION 3: TOPICS REVIEWED

		YES	N/A	COMMENTS
1	Hazards associated with the job (Job Safety Analysis) Traffic, Underground utilities	☑	☐	Bll locate complete + marked
2	Work procedures involved Drive new anchor, install post + sign.	☑	☐	
3	Special precautions Park off roadway	☑	☐	
4	Energy source controls	☐	☑	
5	Personal Protective Equipment (PPE) requirements High vis, gloves, eye protection, boots	☑	☐	
6	Temporary traffic control plan Shoulder Work Ahead signs - all approaches	☑	☐	
7	Weather conditions Clear, dry, 38°F	☑	☐	
8	Identification of the employee who is First Aid/CPR certified Jerry Tech	☑	☐	

In the space below, note any additional safety hazards identified during the job briefing and how they were addressed. *(Text limited for accurate printing. Use Section 3 continuation page if needed.)*

Park work vehicle so temporary stop sign remains clearly visible to traffic until job is complete.
Remove temporary STOP sign when permanent sign is installed.

SECTION 4: CERTIFICATION

Each crew member shall initial one of the boxes below to certify that he or she has participated in and understands the job briefing as described above. The Supervisor, Superintendent, or Crew Leader who conducted the briefing shall sign below.

CREW MEMBERS						JOB BRIEFING CONDUCTED BY *(print name and title)*	
GA	JC	MT	BAC	NT		Doug Highway	
						SIGNATURE	DATE
						Doug Highway	1/14/25

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NOTICE OF SAFETY VIOLATION

SECTION 1: EMPLOYEE INFORMATION

FIRST NAME	LAST NAME	JOB TITLE		
Chance	Laster	HTA I		
COUNTY	**CREW**	**DATE**	**TIME**	**DIVISION/DISTRICT**
David	999	1/14/25	10:30 am	14

SECTION 2: VIOLATION DETAILS

☒ First Offense	☐ Second Offense	☐ Third Offense
☐ Repeat Violation	☒ Hazardous Violation	☒ Photos Taken

SPECIFIC LOCATION OF VIOLATION: KY 999 @ 14.5 MP

ADDITIONAL NOTES *(text limited for accurate printing)*
Employee found sitting on a tree stump 25 ft. from road and talking on a cell phone while flagging.

SECTION 3: NATURE OF VIOLATION

☐ Unsafe Act	☐ PPE Violation	☒ Safety Policy Violation
☐ Unsafe Act with Injury	☐ Repeat PPE Violation	☐ Other

ADDITIONAL NOTES *(text limited for accurate printing)*
Policy requires flaggers to remain at the flagger station, focused on flagging duties at all times. Personal cell phone use while flagging is prohibited.

SECTION 4: RECOMMENDATIONS

☐ None	☐ Meeting with Supervisor and/or Next-Line Supervisor	☐ Forward Violation to OHRM Employee Compliance Branch
☒ Counseling/Retraining		
☒ Verbal Reprimand	☐ Forward Violation to District Loss Control/Safety Committee	☐ Other
☐ Written Reprimand		

ADDITIONAL NOTES *(text limited for accurate printing)*
Safety Coordinator took action to correct the violation when found. Recommend additional follow-up action from Supervisor.

SECTION 5: SIGNATURE

SAFETY REPRESENTATIVE TITLE	SIGNATURE	DATE
Safety Coordinator	James Safety	1/14/25

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FACILITY SAFETY INSPECTION

SECTION 1: FACILITY INFORMATION

DATE	TIME	COUNTY/LOCATION	TYPE OF INSPECTION
1/14/25	1:50pm	David Co./Dist. 14	☒ Monthly ☐ Annual
TYPE OF FACILITY		INSPECTED BY	☐ Follow-up *Date of original inspection:*
County Maint.		Jane Safety	

SECTION 2: INSPECTION *(O = OK/Satisfactory, X = Requires Correction, H = Immediate Hazard, N/A = Not Applicable)*

GENERAL	O	X	H	N/A	CORRECTIVE ACTION
General Housekeeping *(trip hazards, storage, grease/oil, etc.)*	✓				
Chemical containers properly labeled/identified	✓				
Extension cords, hoses not in walkway		✓			
Eyewash Stations working, stocked, and unobstructed	✓				
Fire Extinguishers unobstructed	✓				
Fire Extinguishers mounted, marked, and properly charged	✓				Due for annual inspection
Annual Fire Drill conducted	✓				
Exits marked, unobstructed, and unlocked	✓				
Doors not for exit properly marked	✓				
Lighted exit signs and/or emergency lights operational	✓				
Exit signs mounted *(if lighted exit signs are not installed)*	✓				
First aid kit(s) stocked and available		✓			Expired, need replacement
Bloodborne Pathogen cleanup kit stocked and available	✓				
Sharps containment	✓				
Break/Crew Room clean *(food area, ice machine, refrigerator)*	✓				
Restroom(s) clean	✓				
Gas furnace/water heater burners, vents, and air inlets intact and unobstructed	✓				
Gas shutoff for building unobstructed	✓				
Rolling stairs/ladders in good condition	✓				
Battery charging area - PPE, eyewash station present	✓				
Warning signage	✓				
Other				✓	

FLAMMABLE/COMPRESSED GAS	O	X	H	N/A	CORRECTIVE ACTION
All compressed gas cylinders secured *(full or empty)*			✓		O2 cylinder unsecured.
Oxygen and fuel gas cylinders stored separately	✓				
No more than 25 gallons of gasoline stored in enclosed, heated building	✓				
Safety gas cans with self-closing lid and spark arrestor	✓				
Oily/greasy rags properly disposed	✓				
Storage away from open flame/spark producing operations	✓				
Waste oil	✓				
Container labeling	✓				
No LPG cylinders stored in enclosed area unless connected to appliance	✓				
Other				✓	

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FACILITY SAFETY INSPECTION

SECTION 2: INSPECTION (cont.) *(O = OK/Satisfactory, X = Requires Correction, H = Immediate Hazard, N/A = Not Applicable)*

ELECTRICAL	O	X	H	N/A	CORRECTIVE ACTION
Circuit breaker boxes covered, closed, and labeled	✓				
Electrical disconnects labeld and unobstructed	✓				
Electrical - no open holes, boxes, or damaged/missing faceplates	✓				
Appliances - cords in good condition, ground pin in place	✓				
Power tools - cords in good condition, double insulated, or ground pin in place	✓				
Extension cords - good condition; no frays, cuts, splices, ground pin is intact	✓				
No extension cords used as permanent wiring	✓				
Electric outlets subject to weather/water splash covered or protected	✓				
Electric outlets near sinks or wet locations GFCI protected	✓				
Pressure washer GFCI protected	✓				
Droplights - cords in good condition, ground pin intact, bulb cage intact, socket good			✓		1 cord w/o ground pin was removed from service
Other					
WORKBENCH/WELDING AREAS	**O**	**X**	**H**	**N/A**	**CORRECTIVE ACTION**
Bench grinder - tool rests 1/8", eye shields intact, wheel rpm rating > machine rpm	✓				
Angle grinder disc guards in place	✓				
Welding leads in good condition, stick electrode removed	✓				
Welder screen in good condition and ready for use	✓				
Oxygen and fuel gas cylinder valves "off" if not in use	✓				
Oxygen and fuel gas hoses in good condition *(no cuts, fraying, or abrasions)*	✓				
Proper PPE available *(gloves, eye protection, etc.)*	✓				
Guarding in place on any mechinical, rotating, or entanglement hazards under 7 ft.	✓				
Overhead hoist - capacity marked and not exceeded, chain/cable/hook in good condition	✓				
Other				✓	
POSTINGS/SAFETY DOCUMENTS/BULLETIN BOARDS	**O**	**X**	**H**	**N/A**	**CORRECTIVE ACTION**
Emergency numbers listed	✓				
OSHA 300A Summary *(Jan-Apr posted, last 5 years on file)*	✓				
Labor/Wage Law Poster	✓				
Other Posting Requirements	✓				
SDS Book, accessible and up-to-date	✓				
Safety meeting records	✓				
Daily safety inspection records for each vehicle and equipment	✓				
Other				✓	

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FACILITY SAFETY INSPECTION

SECTION 2: INSPECTION (cont.) *(O = OK/Satisfactory, X = Requires Correction, H = Immediate Hazard, N/A = Not Applicable)*

STORAGE	O	X	H	N/A	CORRECTIVE ACTION
Heavy materials stored low to floor or ground	✓				
Racks/shelf units secured to floor, wall, or each other to prevent tipping	✓				
Racks/shelf units not overloaded, damaged, or inappropriate for use	✓				
No storage near heating elements, gas water heater/furnace	✓				
No unstable stacks, piles, or other storage	✓				
Overhead storage	✓				
Hazardous chemicals	✓				
Chemicals/pesticide/herbicide storage marked, secured, no leaks/damage	✓				
Container labeling	✓				
Other				✓	
WRITTEN PROGRAMS	**O**	**X**	**H**	**N/A**	**CORRECTIVE ACTION**
Emergency Action Plan	✓				
BBP	✓				
Fall Protection	✓				
HAZ COM	✓				
Respiratory Protection	✓				
Lockout/Tagout	✓				
Confined Space	✓				
Excavations and Trenching	✓				
Electrical	✓				
PPE and JHA	✓				
Other				✓	
OUTSIDE FACILITY	**O**	**X**	**H**	**N/A**	**CORRECTIVE ACTION**
Building exterior	✓				
Outside lot - fence and storing sheds sound	✓				
Equipment storage	✓				
Other				✓	
OTHER	**O**	**X**	**H**	**N/A**	**CORRECTIVE ACTION**

SECTION 3: COMMENTS

Superintendent Jerry Highway was briefed on issues needing correction or action

SECTION 4: SIGNATURES

I have discussed and reviewed follow-up inspections and any required corrective actions with the building supervisor.

Jane Safety PIA Coordinator
Secretary's Office of Safety Representative

Jerry Highway – HTS II
Facility Representative & Title

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JOBSITE SETUP INSPECTION

SECTION 1: JOBSITE & CREW INFORMATION *(M=Maintenance; C=Construction; Mb=Mobile)*

DATE	TIME	CREW	COUNTY		ROAD/HIGHWAY
1/14/25	09:30	999	David	☒ M ☐ C ☐ Mb	Ky999

SUPERVISOR	KYTC INSPECTOR	JOB TYPE
Jerry Highway	James Safety	Slope Mowing

SECTION 2: SIGN & LANE CLOSURE INFORMATION

SIGNS			LANE CLOSURE		
Lead Signs Flags/Cones	Signs Number, Size, & Condition	Sign Placement & Distance	Channelization Device	Flashing Arrow	Pilot Truck/Escort
☑ Satisfactory	☑ Satisfactory	☑ Satisfactory	☑ Satisfactory	☐ Satisfactory	☐ Satisfactory
☐ Unsatisfactory	☐ Unsatisfactory	☐ Unsatisfactory	☐ Unsatisfactory	☐ Unsatisfactory	☐ Unsatisfactory

COMMENTS/ADDITIONAL DETAILS

Sign setup correct for lane closure on 2-lane roadway
Cones used for lane closure correctly.

SECTION 3: FLAGPERSON INFORMATION

CRITERIA	BEGINNING FLAGPERSON	MIDDLE FLAGPERSON	END FLAGPERSON
Certified	☑	☐	☑
Head Protection	☐ Hard Hat ☐ Required ☑ Hi-Vis Cap	☐ Hard Hat ☐ Required ☐ Hi-Vis Cap	☐ Hard Hat ☐ Required ☑ Hi-Vis Cap
Safety Vest/Hi-Vis	☑	☐	☐
Paddle Flag	☑	☐	☑
Positioning	☑	☐	☑
Spacing From Crew	☑	☐	☑
Flagging Procedures	☑	☐	☑
Communications Equip.	☑	☐	☑

COMMENTS/ADDITIONAL DETAILS

Traffic held properly while cutting

SECTION 4: EQUIPMENT REQUIREMENTS

EQUIPMENT REQUIREMENTS		CORRECTIVE ACTIONS REQUIRED
Safety Devices/Attenuator	☐	
Tool Condition	☑	
Seat Belts	☑	
Lighting Package & Use	☑	
Backup Alarms	☑	
Equipment Condition	☑	
Cones/Barrels Condition	☑	
Other: Walkarounds	☑	Daily equipment checks documented.

COMMENTS/ADDITIONAL DETAILS

None

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JOBSITE SETUP INSPECTION

SECTION 5: OTHER REQUIREMENTS

OTHER REQUIREMENTS		CORRECTIVE ACTIONS REQUIRED
Job Briefing Completed	☑	
Job Safety Analysis Completed	☑	
Temporary Traffic Control Plan Completed	☑	
First-Aid Certified Crew Member On Site	☑	
PPE Utilized by Crew	☑	
First-Aid Kit On Site	☑	
Fire Extinguisher On Site	☒	No extinguisher on job, need 1 minimum.
Written Programs Followed	☑	
Other:	☐	

COMMENTS/ADDITIONAL DETAILS

SECTION 6: INSPECTION SUMMARY

Overall good setup and procedures. Spoke to crew leader on fire extinguisher.

SECTION 7: SIGNATURE

SIGNATURE *(Safety Coordinator/Administrator)*	DATE
[signature]	1/14/25

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AERIAL DEVICE BUCKET TRUCK DAILY CHECKLIST

SECTION 1: VEHICLE CHECKS			✓
	Complete TC 74-11, *Operator's Daily Check Sheet* .		✓
SECTION 2: AERIAL DEVICE CHECKS			
1	Manual - Must be present and remain on the unit.		✓
2	Prepare the unit for inspection.		
	a.	Position the unit on a level surface.	✓
	b.	Engage the hydraulic system with the transmission in neutral or park without applying the parking brake. If the hydraulic system engages, the parking brake interlock is not operating properly.	✓
	c.	Apply the parking brake, and chock the wheels.	✓
	d.	Turn off the engine.	✓
3	Make sure the vehicle tires are in good condition and properly inflated to the pressure posted on the driver's side door. Rust behind the lug nuts can indicate tightening is required.		✓
4	With the boom stowed, check the oil level in the hydraulic reservoir. The oil level should be to the indicated mark on the dipstick or at the top of the sight guage. If necessary, add oil as described in the maintenance manual. The need to add oil regularly indicates a leak in the hydraulic system that should be corrected. (Only nonconductive oil shall be used.)		✓
5	Visually inspect the unit for hydraulic leaks. Continue to look for hydraulic leaks while performing inspection.		✓
6	Throughout the inspection, pay particular attention to the following components, looking for proper operation and any damage, cracks or corrosion, missing or loose fasteners, cracked or broken inspection marks, and excessive wear: lower boom pivot pin, lower boom cylinder mounting pins, upper boom cylinder mounting pins, platform mounting shaft, platform door latch, rotation bearing bolts, pedestal mounting bolts, platform mounting fasteners, lanyard attachment pin.		✓
7	Inspect all covers to make sure they are in place, secure, and in good condition.		✓
8	Check visual and audible safety devices for proper operation. Check operational and instructional placards. Replace missing and illegible placards.		✓
9	Start the engine and engage the hydraulic system.		✓
10	If the temperature outside is below 32°F (0°C), warm the hydraulic oil before operating the unit. The procedure for warming the oil is described in the owner's manual under Cold Weather Start-Up. Do not operate the pump or engine at more than a fast idle until the hydraulic oil has warmed up.		✓
11	Throughout the preoperational test of all unit controls, confirm the following:		
	a.	When controls are released, they must return to neutral without sticking and all motion for that function should stop. If movement continues, a control valve may not be functioning properly.	✓
	b.	While cylinders are extended and under load, no movement should occur while controls are in neutral. Any movement indicates a cylinder or holding valve malfunction.	✓
12	Test the lower controls emergency stop:		
	a.	Engage the emergency stop.	✓
	b.	Operate each control and observe for movement. If movement occurs, the emergency stop is not functioning properly.	✓
13	Test the start/stop and secondary stowage DC pump controls from the lower controls:		
	a.	Move the control selector to the Lower Controls position.	✓
	b.	Turn off the engine with the start/stop control.	✓
	c.	Press and hold the secondary stowage control or combined function start/stop control until the DC pump begins to operate.	✓

Continued on page 2

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AERIAL DEVICE BUCKET TRUCK DAILY CHECKLIST

SECTION 2: AERIAL DEVICE CHECKS (cont.)			✓
13	Test the start/stop and secondary stowage DC pump controls from the lower controls (cont.):		
	d.	While holding the control with the DC pump operating, raise and lower the upper boom a small amount (movement will be slow). If no boom movement occurs, the secondary stowage system may not be functioning properly.	✓
	e.	Release the control and start the engine using the start/stop control to complete the test.	✓
14	Test the lower controls:		
	a.	Without pressing the master button, operate each boom and rotation control. If movement occurs, the master button is not operating properly.	✓
	b.	Move the control selector to the Lower Controls position. Press the master button and operate all boom and rotation controls throughout their full range of motion. Observe for proper operation.	✓
	c.	Verify proper operation of the auxillary winch controls.	✓
15	Test the interlock blocking valve:		
	a.	With the control selector in the Lower Controls position, verify all upper controls do not function. If movement occurs, the interlock system is not functioning properly.	✓
	b.	Place the control selector in the Upper Controls position. Operate the boom raise function from the lower controls. If boom movement occurs, the interlock system is not functioning properly.	✓
16	Test the upper controls emergency stop:		
	a.	Engage the emergency stop.	✓
	b.	Operate each control. If movement occurs, the emergency stop is not functioning properly.	✓
	c.	Disengage the emergency stop.	✓
17	Test the operation of the upper controls. At the lower controls, move the control selector to the Upper Controls position.		
	a.	Operate each control without engaging the interlock. If boom movement occurs, the interlock system is not functioning properly.	✓
	b.	Operate each function. While the unit is operating, look for oil leaks from the hydraulic lines and components.	✓
18	Test the override system at the lower control station. When the station selector is in the Lower Control position, the upper controls should not function. When the station selector is in the Upper Control position, the upper controls should function. The lower controls must override the upper controls.		✓
19	Test the platform start/stop and secondary stowage DC pump controls:		
	a.	Turn off the engine with the start/stop control, and continue holding the control down until the secondary stowage pump begins to operate.	✓
	b.	While holding the control down with the DC pump operating, raise and lower the lower boom a small amount (movement will be slow). If no boom movement occurs, the secondary stowage system may not be functioning properly.	✓
	c.	Release the control. Start the engine by pressing the control down to complete the test.	✓
20	Stow the booms, disengage the hydraulic system, and turn off the engine.		✓
21	Boom electrical inspection test has been completed within the last 12 months.		✓

WARNING

Take immediate corrective action on any problem areas identified during the inspection process before operating the unit further. Red tag the equipment if needed.

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AERIAL DEVICE BUCKET TRUCK DAILY CHECKLIST

SECTION 3: ACKNOWLEDGMENTS

	I, the Aerial Device Bucket Truck Operator, understand the following (check each):	✓
1	Non-material handlers (personnel units) know that they are not to be used for handling material. Tying ropes to lanyard attachment point to lift material is absolutely forbidden.	✓
2	Never lay conductors on platforms to lift them into position. Do not drag conductors across the boom. Contact with lines or obstructions may cause gouges in the boom.	✓
3	Side loading of booms is prohibited. Side loading can cause instability, structural problems, or both.	✓
4	When operating from the platform, all components at the boom tip, including the controls, must be considered to be electrically connected. If an energized conductor or object touches any part of the boom tip, treat the entire boom tip as energized. Similarly, if any grounded conductor or object touches any part of the boom tip, consider the entire boom tip to be grounded.	✓
5	The insulating portion of the boom can only isolate the operator from grounding through the boom and vehicle. The pole, cross arm, and other hardware must be considered by the operator as grounded. The unit can't protect a person from current between an energized conductor and any other conductor, ground, or grounded equipment on or in contact with the pole, including the neutral wire.	✓
6	Always inspect door latches, winches, hitches, guards, and chains.	✓
7	For proper operation, the unit cannot exceed the degree stamped on the slope indicator placard or serial number placard. Exceeding platform or jib capacity, or operation on greater slopes, can result in instability, structural damage, or both. Locate and understand load chart information.	✓
8	Electrical Safety, Fall Protection, and Other PPE Equipment have been inspected and are in good working condition.	✓
9	Know the clearance height of the equipment you are operating.	✓
10	Operating this unit without proper training will result in death or serious injury to yourself and others. Do not operate this equipment unless you have been qualified/certified by your employer or work. OSHA 29 CFR 1926.32(m) states: "Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.	✓

SECTION 4: SIGNATURE

I have been trained, evaluated, and qualified/certified on aerial device bucket trucks I operate, including the vehicle I have inspected above. A vehicle found in need of repair, defective, or in any way unsafe, shall be immediately taken out of service and red tagged. Problems noted above have been recorded on the appropriate documents and reported to a supervisor.

PRINT NAME	SIGNATURE	DATE
George Tech	George Tech	1/14/25

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TRAINING REPORT

SECTION 1: CLASS INFORMATION

COURSE NAME	COURSE LENGTH
KYTC ESH Basic Chainsaw Safety	6.0

INSTRUCTOR(S): Rex Trainer - Dist. 14

DATE: 12/15/24

SECTION 2: PARTICIPANT INFORMATION

NAME *(print full name)*	SIGNATURE *(full name)*	EMAIL *(KYTC or Personal)*	DISTRICT/ DIVISION	CREW #
Student A	Student A	StudentA@Ky.gov	D14	301
Student B	Student B	StudentB@gmail.com	D14	351

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TRAINING REPORT

SECTION 2: PARTICIPANT INFORMATION *(cont.)*

NAME *(print full name)*	**SIGNATURE** *(full name)*	**EMAIL** *(KYTC or Personal)*	**DISTRICT/ DIVISION**	**CREW #**

Substance data sheet for occupational exposure to lead - 1910.1025 App A

Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1025 App A
- **Title:** Substance data sheet for occupational exposure to lead

I. SUBSTANCE IDENTIFICATION

A. Substance: Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

B. Compounds Covered by the Standard: The word "lead" when used in this standard means elemental lead, all inorganic lead compounds and a class of organic lead compounds called lead soaps. This standard does not apply to other organic lead compounds.

C. Uses: Exposure to lead occurs in at least 120 different occupations, including primary and secondary lead smelting, lead storage battery manufacturing, lead pigment manufacturing and use, solder manufacturing and use, shipbuilding and ship repairing, auto manufacturing, and printing.

D. Permissible Exposure: The Permissible Exposure Limit (PEL) set by the standard is 50 micrograms of lead per cubic meter of air (50 ug/m (3)), averaged over an 8-hour workday.

E. Action Level: The standard establishes an action level of 30 micrograms per cubic meter of air (30 ug/m (3)), time weighted average, based on an 8-hour work-day. The action level initiates several requirements of the standard, such as exposure monitoring, medical surveillance, and training and education.

II. HEALTH HAZARD DATA

A. Ways in which lead enters your body. When absorbed into your body in certain doses lead is a toxic substance. The object of the lead standard is to prevent absorption of harmful quantities of lead. The standard is intended to protect you not only from the immediate toxic effects of lead, but also from the serious toxic effects that may not become apparent until years of exposure have passed.

Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume or

mist it can be inhaled and absorbed through you lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them or handle them with hands contaminated with lead, this will contribute to ingestion.

A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in your blood stream, lead is circulated throughout your body and stored in various organs and body tissues. Some of this lead is quickly filtered out of your body and excreted, but some remains in the blood and other tissues. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

B. Effects of overexposure to lead - (1) Short term (acute) overexposure. Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short term dose of lead can lead to acute encephalopathy. Short term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

(2) Long-term (chronic) overexposure. Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain.

Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal, form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, restlessness, irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy.

Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most likely permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of

kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression to kidney dialysis or death is possible.

Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, behavioral disorders or die during the first year of childhood.

Overexposure to lead also disrupts the blood-forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood.

(3) Health protection goals of the standard. Prevention of adverse health effects for most workers from exposure to lead throughout a working lifetime requires that worker blood lead (PbB) levels be maintained at or below forty micrograms per one hundred grams of whole blood (40 ug/100g). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 ug/100g to minimize adverse reproductive health effects to the parents and to the developing fetus.

The measurement of your blood lead level is the most useful indicator of the amount of lead being absorbed by your body. Blood lead levels (PbB) are most often reported in units of milligrams (mg) or micrograms (ug) of lead (1 mg=1000 ug) per 100 grams (100g), 100 milliters (100 ml) or deciliter (dl) of blood. These three units are essentially the same. Sometime PbB's are expressed in the form of mg% or ug%. This is a shorthand notation for 100g, 100 ml, or dl.

PbB measurements show the amount of lead circulating in your blood stream, but do not give any information about the amount of lead stored in your various tissues. PbB measurements merely show current absorption of lead, not the effect that lead is having on your body or the effects that past lead exposure may have already caused. Past research into lead-related diseases, however, has focused heavily on associations between PbBs and various diseases. As a result, your PbB is an important indicator of the likelihood that you will gradually acquire a lead-related health impairment or disease.

Once your blood lead level climbs above 40 ug/100g, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular PbB in a given person will cause a particular effect. Studies have associated fatal encephalopathy with PbBs as low as 150 ug/100g. Other studies have shown other forms of

diseases in some workers with PbBs well below 80 ug/100g. Your PbB is a crucial indicator of the risks to your health, but one other factor is also extremely important. This factor is the length of time you have had elevated PbBs. The longer you have an elevated PbB, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage.

The best way to prevent all forms of lead-related impairments and diseases-both short term and long term- is to maintain your PbB below 40 ug/100g. The provisions of the standard are designed with this end in mind. Your employer has prime responsibility to assure that the provisions of the standard are complied with both by the company and by individual workers. You as a worker, however, also have a responsibility to assist your employer in complying with the standard. You can play a key role in protecting your own health by learning about the lead hazards and their control, learning what the standard requires, following the standard where it governs your own actions, and seeing that your employer complies with provisions governing his actions.

(4) Reporting signs and symptoms of health problems. You should immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you desire medical advice concerning the effects of current or past exposure to lead on your ability to have a healthy child. You should also notify your employer if you have difficulty breathing during a respirator fit test or while wearing a respirator. In each of these cases your employer must make available to you appropriate medical examinations or consultations. These must be provided at no cost to you and at a reasonable time and place.

The standard contains a procedure whereby you can obtain a second opinion by a physician of your choice if the employer selected the initial physician

REFERENCE

Title 29, Code for Federal Regulations, 1910.1025 App A

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10031

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KENTUCKY TRANSPORTATION CABINET
OFFICE OF HUMAN RESOURCE MANAGEMENT

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GENERAL POLICY ACKNOWLEDGMENT

NOTE: This form is to be used for acknowledging receipt of a policy (Transportation Cabinet-specific or otherwise) or any other document as specified and required by Cabinet management personnel. However, this form is not to be used for any policy or related document that has a specific acknowledgment attached to it.

SECTION 1: POLICY INFORMATION

POLICY NUMBER	POLICY TITLE	POLICY DATE

SECTION 2: EMPLOYEE SIGNATURE ACKNOWLEDGMENT

I acknowledge that I have received, reviewed, and been given the opportunity to ask questions to further my understanding of the policies identified above.

EMPLOYEE NAME	EMPLOYEE ID
EMPLOYEE SIGNATURE	**DATE**

SECTION 3: SUPERVISOR SIGNATURE

SUPERVISOR NAME	SUPERVISOR SIGNATURE	DATE

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PERSONAL PROTECTIVE EQUIPMENT (PPE) ACKNOWLEDGMENT

SECTION 1: ACKNOWLEDGMENT STATEMENT

This is to certify that I have received the personal protective equipment identified below and have had made available to me a copy of the Cabinet's safety and health policy regarding the appropriate use of this equipment. I further certify that I have read and understand this policy.

I further acknowledge that I have received training on the proper use of this equipment and agree to utilize it in a manner consistent with the intended use and in accordance with 29 CFR 1910.132.

SECTION 2: PPE ISSUED

ITEM	ISSUED	COMMENTS
Hard Hat	☐	
Hi-Viz Cap	☑	Ball cap
Boonie Hat	☐	
Sock Hat	☐	
Retro-Reflective Vest	☑	Size XL
Shirt – Short-sleeve Polo	☐	
Shirt – Short-sleeve Tee	☐	
Shirt – Long-sleeve Tee	☐	
Foot Protection	☐	Timberland Titan 12D ordered.
Jacket	☐	
Hearing Protection	☐	
Eye Protection	☑	Clear + Smoked
Face/Welder Shield	☐	
Chainsaw Protection	☐	
Gloves	☑	Style 3 Size XL
Personal Fall Arrest System (PFAS):		
• Harness	☐	
• Lanyard	☐	
Respirator *(if applicable*)*	☐	
Other	☐	
Other	☐	

** Appendix D of 29 CFR 1910.134 as it relates to voluntary usage of "dust mask" respiratory protection.*

SECTION 3: SIGNATURE

☑ I have received the items listed and understand their proper use for my personal protection on the job.

☑ I have received a copy of the Employee Safety & Health Manual.

NAME	DATE	CREW	EMPLOYEE ID
Andrew Maintenance	12/15/24	301	XYZ1234
SAFETY COORDINATOR/ADMINISTRATOR	**DISTRICT**	**SIGNATURE**	
Jane Safety	14	Jane Safety	

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AIR SAMPLING REPORT

Important: *An Air Sampling Report is to be completed for each day or shift that sampling is conducted.*

SECTION 1: SAMPLING INFORMATION

SAMPLING DATE	SAMPLE TAKEN BY *(Print name.)*	TYPE OF SAMPLE	WEATHER CONDITIONS	
12/13/24	Joe Safety	☑ Personal Monitoring	☑ AM	☐ PM
DISTRICT	EMPLOYEE MONITORED *(Print name.)*	☐ Area Monitoring	Clear	
14	Rex Highway	☐ Indoor ☐ Outdoor	46°F	
COUNTY	PCN #	SAMPLING METHOD (OSHA)		
David	NA	OSHA ID-142 / NIOSH 7500		

PPE WORN: Safety glasses, ear protection

SECTION 2: JOB INFORMATION *(job description, operation, work location(s), ventilation, and controls; text limited for accurate printing)*

Saw cutting concrete bridge deck using wet methods.
Sampling performed to verify wet methods sufficient to mitigate exposure to keep respirable silica exposure below Action Level.

SECTION 3: SAMPLING DATA

PUMP #	15					
SAMPLE NUMBER	2024-120					
CARTRIDGE NUMBER	00-23456					
CARTRIDGE TYPE	37mm 5μm PVC					
TIME	ON 08:00	OFF 12:00	ON	OFF	ON	OFF
TOTAL TIME (MINUTES)	480					
FLOW RATE (ML/MIN)	2.5					
TOTAL VOLUME (LITERS)	1200					
ANALYZE SAMPLES FOR	Si					

PUMP ADJUSTMENTS, CHECKS, WEATHER *(text limited for accurate printing)*

Weather: dry, clear 46°F with 40% humidity.

SECTION 4: CALIBRATION DATA

CALIBRATOR MODEL	SERIAL #	DATE
MWC-500L	XSZ321	12/14/24

PRE-SAMPLING CALIBRATION RECORDS

PUMP MFG. AND SERIAL #	FLOW RATE CALCULATIONS (AVG OF 10)					2.5 L/min
SKC Corp XMP1	RUN 1	2.5	RUN 4	2.5	RUN 7	2.5
	RUN 2	2.5	RUN 5	2.4	RUN 8	2.5
	RUN 3	2.4	RUN 6	2.6	RUN 9	2.5
					RUN 10	2.6

POST-SAMPLING CALIBRATION RECORDS

	FLOW RATE CALCULATIONS (AVG OF 10)					2.5
SKC Corp XMP1	RUN 1	2.5	RUN 4	2.5	RUN 7	2.5
	RUN 2	2.4	RUN 5	2.5	RUN 8	2.5
	RUN 3	2.5	RUN 6	2.6	RUN 9	2.5
					RUN 10	2.5

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CONFINED SPACE ENTRY PERMIT

NOTE: *Page 1 is to be completed by the Entry Supervisor. Page 2 is for the Attendant to log periodic air monitoring and additional comments.*

SECTION 1: JOB INFORMATION

	DATE	TIME	WORK TO BE PERFORMED:	JOB SITE/SPACE ID:
ISSUED	12/10/24	07:00 a	Sanitary sewer pump replacement	I-75 Rest Area NB
EXPIRES	12/10/24	3:30 p		

SECTION 2: HAZARD CONTROL (PRE-ENTRY CHECKS)

I. ATMOSPHERIC

Initial Readings:			Permit Limits
Time	07:00 AM		
Oxygen	21.0	%	✓ 19.5% - 23.5%
Explosive	0	% LFL	✓ Less than 5%
H2S	0	PPM	✓ Less than 10 PPM
CO	0	PPM	✓ Less than 25 PPM

Date meter calibrated with gas: 12/9/24

	Yes	No
Is the atmosphere acceptable?	☑	☐
Mechanical ventilation operating?	☑	☐
Permanent	☐	☑
Portable	☑	☐

II. ENGULFMENT

	Yes	No
Is water level under 2 feet?	☑	☐

III. MECHANICAL

	Yes	No
Are controls locked and tagged out until shields are in place?	☑	☐
Are shields in place before pumps are returned to service?	☐	☐

IV. COMMUNICATION *(Circle all that apply.)*

Radios — Hand Signals
(Voice) — Whistles
Other _____

V. RESCUE PROCEDURES

	Yes	No
Employee Rescuers Onsite	☑	☐
EMS Contacted	☐	☑
Phone Available	☑	☐

VI. EQUIPMENT

	Yes	No
Personal Air Monitor	☑	☐
Body Harnesses	☑	☐
Retrieval System and Winch	☑	☐
Hard Hats	☑	☐
First-Aid Kit	☑	☐
Flashlights	☑	☐
Hearing Protection	☑	☐

SECTION 3: SIGNATURES

I have read and will comply with the above permit.

Print	Signature
Rob Manager	Robert Manager — Entry Supervisor Signature
Doug Handler	D. Handler — Attendant Signature
Joe Plumber	Joe Plumber — Entrant Signature
A1 Helper	A1 Helper — Entrant Signature
N/A	Entrant Signature
N/A	Entrant Signature

SECTION 4: COMPLETION REPORT

COMMENTS: *(Include any difficulties experienced, the status of the work performed,and if applicable, the time the work was completed.)*

Work completed 10:45 am 12/10/25, permit closed.
No problems encountered.

Print	Signature
Rob Manager	

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CONFINED SPACE ENTRY PERMIT

SECTION 5: PERIODIC AIR MONITORING *(to be completed by Attendant)*

BEGINNING ATTENDANT TIME:	07:00 am	BEGINNING AIR MONITOR TIME:	1	7:00 am	2	8:00 am	3	9:00 am	4	10:00 am

O2%	LEL%	H2S PPM	CO PPM	INITIALS	COMMENTS
21.0	0	0	0	D.H	probe at top, middle, bottom of space
20.9	0	0	3	D.H.	" "
20.9	0	0	0	D.H	" "
20.9	0	0	0	D.H	" "

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EXCAVATION & TRENCH INSPECTION

IMPORTANT: *A **Competent Person** is required to inspect trenches and protective systems daily prior to worker entry and whenever weather/work conditions change, and is authorized to remove workers from the excavation site immediately [OSHA 1926.32(f)]. A **Competent Person** is an individual trained in the identification of existing and predictable hazards; working conditions that are hazardous, unsanitary, or dangerous to workers; soil types; and protective systems required.*

SECTION 1: SITE INFORMATION *(Indicate N/A if not applicable.)*

PROJECT DESCRIPTION		PROJECT NUMBER
8" water main relocation		PCN 999
CONTRACTOR NAME	**KYTC CREW**	**PROJECT DATE**
Pro Contractor Inc.		1/14/25
CURRENT WEATHER CONDITIONS		**TYPE OF PROTECTIVE SYSTEM**
Clear, 40°, day		Trench box
DIMENSIONS: Depth 8' Width 4' Length 40'		**SOIL TYPE:** C

SECTION 2: INSPECTION

YES	NO	N/A	EXCAVATION/TRENCH
☑	☐	☐	Surface encumbrances supported/removed
☑	☐	☐	Employees protected from loose rock/soil
☑	☐	☐	Hard hats worn by all employees
☑	☐	☐	Spoils, materials, and equipment set back a minimum of 2' from excavation edge
☐	☐	☑	Barriers provided at all remote excavations (wells, pits, shafts, etc.)
☐	☐	☑	Walkways and bridges over excavations 6' deep or more equipped with guardrails
☑	☐	☐	Warning vests/highly visible PPE provided to and worn by all exployees exposed to vehicular traffic
☑	☐	☐	Employees prohibited from working or walking under suspended loads
☑	☐	☐	Employees prohibited from working on faces of sloped or benched excavations above other employees
☑	☐	☐	Warning system established/used when mobile equipment is operating near excavation edge

YES	NO	N/A	HAZARDOUS ATMOSPHERE
☐	☐	☑	Atmosphere tested when the possibility of oxygen deficiency or build-up of hazardous gases is present
☐	☐	☑	Oxygen content between 19.5 percent and 21 percent
☐	☐	☑	Ventilation provided to prevent flammable gas build-up to 20% of lower explosive limit of the gas
☐	☐	☑	Conduct testing to ensure safe atmosphere
☑	☐	☐	Emergency response equipment readily available where a hazardous atmosphere could or does exist
☑	☐	☐	Employees trained in the use of Personal Protective and Emergency Response Equipment
☐	☐	☑	Safety harness and life line individually attended when employees enter deep confined excavation

YES	NO	N/A	UTILITIES
☑	☐	☐	Utility companies contacted and/or utilities located
☑	☐	☐	Exact location of utilities marked when near excavation
☑	☐	☐	Underground installations protected, supported, or removed when excavation is open.

YES	NO	N/A	WET CONDITIONS
☐	☐	☑	Precautions taken to protect employees from accumulation of water
☐	☐	☑	Water removal equipment monitored by Competent Person
☐	☐	☑	Surface water controlled or diverted
☐	☐	☑	Inspection made after each rainstorm

SECTION 3: SIGNATURE

Competent Person Signature [signature] **Title** Safety Coordinator **Date** 1/14/25

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ENERGIZED ELECTRICAL WORK PERMIT

IMPORTANT: *If exposed live parts are not de-energized, other safety-related work practices shall be used to protect employees who may be exposed to electrical hazards. Such work practices shall protect employees against direct contact of energized circuit parts with any part of their body, as well as indirect contact through some other conductive object. Work practices used shall be suitable for the conditions under which the work is performed and for the voltage level of exposed electric conductors or circuit parts [OSHA 1910.33(S)].*

SECTION 1: JOB INFORMATION *(To be completed by the Requester)*

JOB/WORK ORDER #	DESCRIPTION OF CIRCUIT/EQUIPMENT/JOB LOCATION
1234	Traffic Signal Control #14-2341

DESCRIPTION OF WORK TO BE COMPLETED
Troubleshooting Fault

JUSTIFICATION *(Explain why circuit/equipment cannot be de-energized or work deferred until next scheduled outage.)*
Equipment must be energized and functioning to recreate reported fault.

SECTION 2: PRE-JOB SAFETY CHECKLIST *(Must be completed and signed by an Electrically Qualified Person)*

	COMPLETE
Procedure to be used in performing work described in Section 1: Circuit voltage and continuity tests with multimeter	☑
Safe work practices to be employed: Exclusionary zone established, traffic protection measures	☑
Results of shock hazard analysis: 240 VAC, shock hazard present	☑
Determination of shock protection boundaries: Limited Approach Boundary LAB = 3'6" Restricted Approach RAB = 1'	☑
Results of arc flash hazard analysis: Arc Flash hazard present	☑
Determination of arc flash protection boundary: Arc Flash Boundary (AFB) = 19" PPE Cat 1	☑
Required Personal Protective Equipment (PPE): FR shirt, pants, hi-viz, Cat. 1 AF PPE	☑
Methods employed to restrict access of unqualified persons from the work area: Cones and caution tape, 10ft radius of cabinet	☑
Evidence of job briefing, including discussion of job-related hazards: Job briefing form (complete) attached	☑

SECTION 3: CERTIFICATION

I certify that the work described above can be done safely. *(If not, return unsigned form to requester.)*

Daniel Tech — Electrically Qualified Person — 12/15/24 — Date

SECTION 4: SUPERVISOR APPROVAL

I approve completion of the work described above.

Wes A. Engineer — Supervisor — 12/15/24 — Date

NOTE: After work is completed, forward this form to the KYTC Secretary's Office of Safety.

INSPECTION CHECKLIST GUIDE TC 25-157

HARNESS

General Factors

1.) Hardware: (Includes D-rings, buckles, keepers and back pads). Inspect for damage, distortion, sharp edges, burrs, cracks and corrosion.
2.) Webbing: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration.
3.) Stitching: Inspect for pulled or cut stitches.
4.) Labels: Inspect, make certain all labels are securely held in place and legible.

LANYARD

General Factors

1.) Hardware: (Includes snap hooks, carabiners, adjusters, keepers, thimbles and D-rings). Inspect for damage, distortion, sharp edges, burrs, cracks, corrosion and proper operation.
2.) Webbing: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration.
3.) Stitching: Inspect for pulled or cut stitches.
4.) Synthetic Rope: Inspect for pulled or cut yarns, burns, abrasion, knots, excessive soiling and discoloration.
5.) Wire Rope: Inspect for broken wires, corrosion, kinks and separation of strands.
6.) Energy Absorbing Component: Inspect for elongation, tears and excessive soiling.
7.) Labels: Make certain all labels are securely held in place and legible.

ANCHORAGE PLATE

General Factors

1.) Physical Damage: Inspect for cracks, sharp edges, burrs and deformities.
2.) Excessive Corrosion: Inspect for corrosion which effects the operation and/or strength.
3.) Fasteners: Inspect for corrosion, tightness, damage and distortion. If welded, inspect weld for corrosion, cracks and damage.
4.) Markings: Inspect, make sure certain marking(s) are legible.

HOOK/CARABINER

General Factors

1.) Physical Damage: Inspect for cracks, sharp edges, burrs, deformities and locking operation.
2.) Excessive Corrosion: Inspect for corrosion which effects the operation and/or strength.
3.) Markings: Inspect, make sure certain marking(s) are legible.

TIE-OFF ADAPTOR

General Factors

1.) Hardware: (Includes D-rings) Inspect for damage, distortion, sharp edges, burrs, cracks and corrosion.
2.) Webbing: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration.
3.) Stitching: Inspect for pulled or cut stitches.
4.) Labels: Inspect, make certain all labels are securely held in place and legible.

INSPECTION CHECKLIST GUIDE (cont.) TC 25-157

SELF-RETRACTING LIFELINE

General Factors

1.) Impact Indicator: Inspect indicator for activation (rupture of red stitching, elongated indicator, etc.)
2.) Screws / Fasteners: Inspect for damage and make certain all screws and fasteners are tight.
3.) Housing: Inspect for distortion, cracks and other damage. Inspect anchoring loop for distortion and damage.
4.) Lifeline: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration, broken wires (see impact indicator section).
5.) Locking Action: Inspect for proper lock-up of brake mechanism.
6.) Retraction/Extension: Inspect spring tension by pulling lifeline out fully and allowing it to retract fully (no slack).
7.) Hooks/Carabiners: Inspect for physical damage, corrosion, proper operation and markings (see separate checklist/log for hooks and carabiners).
8.) Reserve Lifeline: Inspect reserve lifeline retention systems for deployment.
9.) Labels: Inspect, make certain all labels are securely held in place and legible.

ADDITIONAL INFORMATION

KYTC ES&H Fall Protection Written Program
https://intranet.kytc.ky.gov/org/OHRM/em/Pages/Employee-Safety-Health.aspx

KY Labor Cabinet 803 KAR 2:412. Fall protection
http://www.lrc.ky.gov/kar/803/002/412.htm

DBI SALA Safety Resources
http://www.capitalsafety.com/en-us/Pages/Home.aspx

OSHA Fall Protection
https://www.osha.gov/SLTC/fallprotection/
https://www.osha.gov/Publications/OSHA3146.pdf

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FALL PROTECTION EQUIPMENT INSPECTION LOG

Instructions: Form is to be completed by the District Safety Coordinator and submitted to the Regional Safety Administrator no later than May of each year. Consult the Inspection Checklist Guide for a list of specific equipment and safety considerations.

BRAND	SERIAL #	DATE OF MFG	MODEL #	DESCRIPTION	INSPECTION DATE	PASS	FAIL	INSPECTED BY	COMMENTS
3M	3102311	12/2023	SUL42	Harness XL	12/15/24	✓		DS	
3M	3102313	12/2023	SUL42	Harness Med.	12/15/24	✓		DS	
Sala	XM2394	9/2021	Exofit 3	Harness XL	12/15/24		✓	DS	Destroyed

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FALL PROTECTION EQUIPMENT INSPECTION LOG

BRAND	SERIAL #	DATE OF MFG	MODEL #	DESCRIPTION	INSPECTION DATE	PASS	FAIL	INSPECTED BY	COMMENTS

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FALL PROTECTION EQUIPMENT INSPECTION LOG

BRAND	SERIAL #	DATE OF MFG	MODEL #	DESCRIPTION	INSPECTION DATE	PASS	FAIL	INSPECTED BY	COMMENTS

BOMB THREAT CALL PROCEDURES

Most bomb threats are received by phone. Bomb threats are serious until proven otherwise. Act quickly, but remain calm and obtain information with the checklist on the reverse of this card.

If a bomb threat is received by phone:

1. Remain calm. Keep the caller on the line for as long as possible. DO NOT HANG UP, even if the caller does.
2. Listen carefully. Be polite and show interest.
3. Try to keep the caller talking to learn more information.
4. If possible, write a note to a colleague to call the authorities or, as soon as the caller hangs up, immediately notify them yourself.
5. If your phone has a display, copy the number and/or letters on the window display.
6. Complete the Bomb Threat Checklist (reverse side) immediately. Write down as much detail as you can remember. Try to get exact words.
7. Immediately upon termination of the call, do not hang up, but from a different phone, contact FPS immediately with information and await instructions.

If a bomb threat is received by handwritten note:

- Call _____
- Handle note as minimally as possible.

If a bomb threat is received by e-mail:

- Call _____
- Do not delete the message.

Signs of a suspicious package:

- No return address
- Excessive postage
- Stains
- Strange odor
- Strange sounds
- Unexpected Delivery
- Poorly handwritten
- Misspelled Words
- Incorrect Titles
- Foreign Postage
- Restrictive Notes

DO NOT:

- Use two-way radios or cellular phone; radio signals have the potential to detonate a bomb.
- Evacuate the building until police arrive and evaluate the threat.
- Activate the fire alarm.
- Touch or move a suspicious package.

WHO TO CONTACT (select one)

- **Follow your local guidelines**
- **Federal Protective Service (FPS) Police 1-877-4-FPS-411 (1-877-437-7411)**
- **911**

BOMB THREAT CHECKLIST

Date: _____ **Time:** _____

Time Caller Hung Up: _____ **Phone Number where Call Received:** _____

Ask Caller:

- Where is the bomb located? (Building, Floor, Room, etc.)
- When will it go off?
- What does it look like?
- What kind of bomb is it?
- What will make it explode?
- Did you place the bomb? Yes No
- Why?
- What is your name?

Exact Words of Threat:

Information About Caller:

- Where is the caller located? (Background and level of noise)
- Estimated age:
- Is voice familiar? If so, who does it sound like?
- Other points:

Caller's Voice

- ❑ Accent
- ❑ Angry
- ❑ Calm
- ❑ Clearing throat
- ❑ Coughing
- ❑ Cracking voice
- ❑ Crying
- ❑ Deep
- ❑ Deep breathing
- ❑ Disguised
- ❑ Distinct
- ❑ Excited
- ❑ **Female**
- ❑ Laughter
- ❑ Lisp
- ❑ Loud
- ❑ **Male**
- ❑ Nasal
- ❑ Normal
- ❑ Ragged
- ❑ Rapid
- ❑ Raspy
- ❑ Slow
- ❑ Slurred
- ❑ Soft
- ❑ Stutter

Background Sounds:

- ❑ Animal Noises
- ❑ House Noises
- ❑ Kitchen Noises
- ❑ Street Noises
- ❑ Booth
- ❑ PA system
- ❑ Conversation
- ❑ Music
- ❑ Motor
- ❑ Clear
- ❑ Static
- ❑ Office machinery
- ❑ Factory machinery
- ❑ Local
- ❑ Long distance

Other Information:

_____

_____

Threat Language:

- ❑ Incoherent
- ❑ Message read
- ❑ Taped
- ❑ Irrational
- ❑ Profane
- ❑ Well-spoken

_____

_____

_____

Homeland Security

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AUTOMATED EXTERNAL DEFIBRILLATOR (AED) MAINTENANCE CHECKLIST

IMPORTANT: *Each AED unit shall be inspected monthly. If any FAIL boxes are checked, the issue must be corrected immediately or the unit shall be removed from service. (Refer to the product manual for additional information.) If an AED has been activated and used in an emergency situation, the district safety coordinator or the Secretary's Office of Safety shall be notified immediately.*

SECTION 1: OBSERVATIONS

		PASS	FAIL
1	Is the unit clean?	✓	
	Cleaning Instructions: • After each use, clean and disinfect the AED Plus with a soft, damp cloth using 90% isopropyl alcohol, soap and water, or chlorine bleach and water mixture (30 ml/liter water). • Do not immerse any part of the AED Plus in water. • Do not use ketones (such as MEK or acetone) to clean the AED Plus. • Avoid using abrasives (such as a paper towel) on the display window or IrDa port. • Do not sterilize the AED plus.		
2	Are all signs of wear reasonable and not excessive?	✓	
3	Are the front panel and housing undamaged and free of cracks?	✓	
4	Are input connectors clean and undamaged?	✓	
5	Are the electrodes pre-connected to the AED and sealed in their package?	✓	
6	Are the electrodes within the expiration date shown on the package? *(Replace if expired.)*	✓	
7	Are all cables free from damage, cracks, cuts, exposed, or broken wires?	✓	
8	Are the pads sealed within the packaging?	✓	
9	Open battery door and verify that the batteries have no signs of visible damage.	✓	
10	Are the batteries within the expiration date? *(Replace all batteries every 5 years or if the unit prompts.)*	✓	
11	Initiate manual self-test. Audible unit okay is noted. Green arrow is visible on the front of the unit. If a red "X" is visible in the status indicator window when the unit is on, power cycle the unit. If a red "X" is still visible in the status indicator window, remove the unit from service and refer to the product manual.	✓	
12	Verify that supplies are available for use (razor, gloves, and breathing barrier).	✓	

SECTION 2: COMMENTS

ZOLL SMART-AED MODEL X734
S/N X7241203F
DISTRICT 14 OFFICE

SECTION 3: SIGNATURE

PRINT NAME	SIGNATURE	DATE
James Safety	James Safety	1/14/25

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AUTOMATED EXTERNAL DEFIBRILLATOR (AED) POST-EVENT REVIEW

SECTION 1: PATIENT INFORMATION

LAST NAME	FIRST NAME	MI	JOB TITLE
Patiently	Sally	M	Admin Spec. II

DATE OF BIRTH	DISTRICT	DEPARTMENT	DIVISION/FACILITY/WORK LOCATION
7/3/71	14	Highways	Administration / District Office

SECTION 2: EVENT INFORMATION

LOCATION OF EVENT	TIME OF EVENT	TIME OF AED ARRIVAL
District Office	07:30 am	07:31 a.m.

MINUTES BETWEEN EVENT AND AED ARRIVAL	POSITION PATIENT WAS FOUND *(lying, sitting...)*	PATIENT SKIN COLOR UPON ARRIVAL *(pale, blue...)*	POLICE REPORT # *(NA if not applicable)*
1 min.	Lying	pale	NA

	YES	NO
AED responder witnessed the patient's cardiac arrest.	✓	
Emesis (vomit) was present.		✓
Visible signs of trauma were present. *(If "yes," briefly describe.)*		✓
Bystander(s) administered CPR. *(If "yes," list name(s) and contact information.)* Anne Admin, Doug Handler, Jane Safety	✓	
Shockable rhythm present? *(If "yes," indicate total number of shocks delivered.)* 2	✓	
IA-1 has been completed.	✓	

SECTION 3: TRANSFER OF PATIENT CARE

	YES	NO
Patient care was transferred following AED. *(If "yes," indicate to whom and the approximate time.)* David County EMS @ 7:38 am	✓	
A verbal report was provided upon transfer of patient care. *(If "yes," indicate by and to whom.)* EMS Paramedic Jones by Jane Safety	✓	
Patient received follow-up care by emergency medical services (EMS).	✓	
Patient received follow-up care at a hospital.	✓	

SECTION 4: SIGNATURES *(Print name under each title prior to signing.)*

PERSON COMPLETING REPORT	SIGNATURE	DATE
Jane Safety	Jane Safety	
SECRETARY'S OFFICE OF SAFETY EXEC DIRECTOR	**SIGNATURE**	**DATE**
William A. Safety	William A. Safety	
AED COMMONWEALTH PROGRAM COORDINATOR	**SIGNATURE**	**DATE**
Robert Director	Robert Director	
AED MEDICAL OVERSIGHT PHYSICIAN	**SIGNATURE**	**DATE**
NA		

Once all signatures have been obtained, return this form to:

AED Commonwealth Program Coordinator
Office of Legal Services, Kentucky Personnel Cabinet
State Office Building, 501 High Street, Frankfort KY 40601

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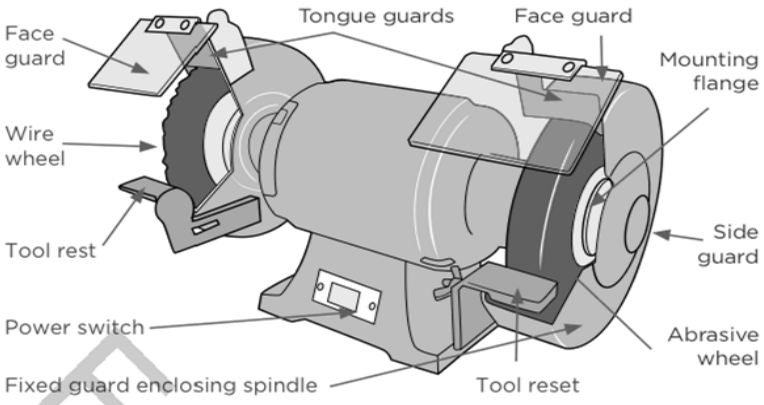
KYTC EMPLOYEE SAFETY AND HEALTH BRANCH

BENCH GRINDER CHECKLIST GUIDE



CAUTION: *Follow all manufacturer guidelines for safe operation and maintenance. Mounted eye shields do not replace required eye and face protection.*

		YES	NO
1	Is the work rest used and kept adjusted to within 1/8 in. (0.3175 cm.) of the wheel?		
2	Is the adjustable tongue on the top side of the grinder used and kept adjusted to within 1/4 in. (0.6350 cm.) of the wheel?		
3	Do side guards cover the spindle, nut, flange, and 75% of the wheel diameter?		
4	Are bench and pedestal grinders permanently mounted to prevent tipping or other movement that could result in personal injury?		
5	Is the maximum revolutions per minute (rpm) rating of each abrasive wheel compatible with the rpm rating of the grinder motor?		
6	Does each grinder have an individual operable on and off control switch?		
7	Is each electrically operated grinder effectively grounded?		
8	Is the electrical cord in good condition?		
9	Are new abrasive wheels visually inspected and ring tested before they are mounted?		
10	Are dust collectors and powered exhausts provided on grinders used in operations that produce large amounts of dust?		
11	Are splash guards mounted on grinders that use coolant to prevent the coolant from reaching employees?		
12	Is cleanliness maintained around grinders?		
13	Is sufficient clearance provided around and between machines to allow for safe operations, set up and servicing, material handling, and waste removal?		
14	Are the eye shields attached?		
15	Is the manufacturer handbook accessible?		

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INTERNAL COMBUSTION ENGINE INDUSTRIAL TRUCK OPERATION CHECKLIST

IMPORTANT: *Always consult the operator's manual for any additional information on maintenance or safety requirements.*

SECTION 1: OPERATOR & EQUIPMENT INFORMATION

DATE	OPERATOR	DEPARTMENT	SHIFT
1/14/25	Doug Handler	D14 Traffic	1
MODEL #	**EQUIPMENT #**	**HOURS**	**FUEL TYPE**
ICP 50	000-XX1X	1943	Diesel
MAXIMUM LIFT CAPACITY	**OPERATOR CERTIFIED**	**OTHER**	**OTHER**
5000 lbs.	Yes		

SECTION 2: SAFETY & OPERATIONAL CHECKS *(Checks are to be completed daily and prior to each shift, as required by OSHA standards 1910.178 and 1926.602. Have a **qualified** mechanic correct all problems.)*

ENGINE OFF CHECKS	OK	MAINTENANCE REQUIRED
Leaks - fuel, hydraulic oil, engine oil, or radiator coolant	✓	
Battery - check water, clean/electrolyte level and charge	✓	
All Engine Belts - check visually	✓	
Radiator Coolant - check level	✓	Slightly low, added coolant
Engine Oil Level - dipstick	✓	
Transmission Fluid Level - dipstick	✓	
Engine Air Cleaner - squeeze rubber dirt trap or check the restriction alarm (if equipped)	✓	
Hydraulic Fluid Level - check level	✓	
Brake Fluid - check level	✓	
Hood Latch - adjusted and securely fastened	✓	
Tires - condition and pressure	✓	
Forks, Top Clip Retaining Pin and Heel - check condition	✓	
Load Backrest - securely attached	✓	
Hydraulic Hoses, Mast Chains, Cables, and Stops - check visually	✓	
Overhead Guard - attached, check visually	✓	
Finger Guards and Fan Guards - attached, check visually	✓	
Propane Tank (LP Gas Truck) - rust corrosion, damage, dents, cracks, restraint brackets	✓	
Safety Warnings - attached (refer to parts manual for location)	✓	
Fuel Sedimentor (Diesel)	✓	
Operator's Manual - in container	✓	
Nameplate - attached and information matches model, serial number, and attachments	✓	
Seat Belt - functioning smoothly	✓	
Fire Extinguisher - date current	✓	
3-Point Mounting & Dismounting handles/bars - attached, check visually	✓	
Other		
Other		

(See page 2 for Engine On Checks.)

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POWERED INDUSTRIAL TRUCK DAILY OPERATION CHECKLIST

SECTION 2: SAFETY & OPERATIONAL CHECKS (cont.)

ENGINE ON CHECKS	OK	MAINTENANCE REQUIRED
Accelerator or Direction Control Pedal - functioning smoothly	✓	
Service Brake - functioning smoothly	✓	
Parking Brake - functioning smoothly	✓	
Steering Operation - functioning smoothly	✓	
Drive Control - forward/reverse - functioning smoothly	✓	
Tilt Control - forward & back - functioning smoothly	✓	
Hoist & Lowering Control - functioning smoothly	✓	
Attachment Control - operation	✓	
Horns (including backup) & Lights - functioning	✓	
Cab (if equipped) - heater, defroster, wipers - functioning	✓	
Guages: ammeter, engine oil pressure, hour meter, fuel level, temperature, instrument monitors - functioning	✓	
Seat Belt Buzzer (if applicable)	✓	
Other		

SECTION 3: SIGNATURE

I have been trained, evaluated, and certified on the types of powered industrial trucks and attachments I operate, including the vehicle I have inspected above. A vehicle found in need of repair, defective, or in any way unsafe, shall be immediately taken out of service and red tagged. Problems noted above have been recorded on the appropriate documents and reported to a supervisor.

PRINT NAME	SIGNATURE	DATE
Doug Handler	Doug Handler	1/14/25

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ELECTRIC INDUSTRIAL TRUCK DAILY OPERATION CHECKLIST

IMPORTANT: *Always consult the operator's manual for any additional information on maintenance or safety requirements.*

SECTION 1: OPERATOR & EQUIPMENT INFORMATION

DATE	OPERATOR	DEPARTMENT	SHIFT
1/14/25	Doug Handler	D14 Equipt.	1
MODEL #	**EQUIPMENT #**	**OPERATOR CERTIFIED**	**DRIVE HOUR METER READING**
DBX15	000-XXXX	YES	1048
BATTERY WATER	**HYDRAULIC OIL**	**MAXIMUM LIFT CAPACITY**	**HOIST HOUR METER READING**
FULL	OK	3000 lbs	1048

SECTION 2: SAFETY & OPERATIONAL CHECKS *(Checks are to be completed daily and prior to each shift, as required by OSHA standards 1910.178 and 1926.602. Have a* ***qualified*** *mechanic correct all problems.)*

MOTOR OFF CHECKS	OK	MAINTENANCE REQUIRED
Leaks - hydraulic oil, battery	✓	
Tires - condition & pressure	✓	
Forks, Top Clip Retaining Pin & Heel - condition	✓	
Load Backrest Extension - attached	✓	
Hydraulic Hoses, Mast Chains, Cables & Stops - check visually	✓	
Finger Guards and Fan Guards - attached, check visually	✓	
Overhead Guard - attached	✓	
Safety Warnings - attached (refer to parts manual for location)	✓	
Battery - water/electrolyte level and charge	✓	
Hydraulic Fluid Level - dipstick - check level	✓	Added 1 Qt.
Transmission Fluid Level - dipstick - check level	✓	
Operator's Manual - in container	✓	
Capacity Plate Attached - information matches model, serial number, and attachments	✓	
Battery Restraint System - adjust & fasten	✓	
Sit-down Truck - seat belt - functioning smoothly	✓	
Man-up Truck - fall protection/restraining means - functioning - inspected for defects	✓	
Brake Fluid - check level	✓	
Hood Latch	✓	
Fire Extinguisher - date current	✓	
3-Point Mounting & Dismounting handles/bars - attached, check visually	✓	
Other		
Other		

(See page 2 for Motor On Checks.)

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ELECTRIC INDUSTRIAL TRUCK DAILY OPERATION CHECKLIST

SECTION 2: SAFETY & OPERATIONAL CHECKS (cont.)

MOTOR ON CHECKS	OK	MAINTENANCE REQUIRED
Accelerator Linkage - functioning smoothly	✓	
Service Brake - functioning smoothly	✓	
Parking Brake - functioning smoothly	✓	
Steering Operation - functioning smoothly	✓	
Drive Control - forward/reverse - functioning smoothly	✓	
Tilt Control - forward & back - functioning smoothly	✓	
Hoist & Lowering Control - functioning smoothly	✓	
Attachment Control - operation	✓	
Horns (including backup) - functioning	✓	
Lights & Alarms (where present) - functioning		See below
Hour Meter - functioning	✓	
Battery Discharge Indicator - functioning	✓	
Instrument Monitors - functioning	✓	
Seat Belt Buzzer (if applicable)	✓	
Other Backup Alarm		Loose wire, reconnected now works correctly.

SECTION 3: SIGNATURE

I have been trained, evaluated, and certified on the types of electric industrial trucks and attachments I operate, including the vehicle I have inspected above. A vehicle found in need of repair, defective, or in any way unsafe, shall be immediately taken out of service and red tagged. Problems noted above have been recorded on the appropriate documents and reported to a supervisor.

PRINT NAME	SIGNATURE	DATE
Doug Handler	D Handler	1/14/25

MEDICAL/OCCUPATIONAL HISTORY QUESTIONNAIRE

Employee Name: _____ Date: _____

SSN: _____ Birth Date: _____ Age: _____

Sex: ___ Height: _____ Weight: _____

Employer: _____

Department/Division: _____

_____

Job Title Description: _____

Dates at this Job Title: From _____ to _____

MEDICAL HISTORY

1. List all hospitalizations and surgeries _____

_____

_____

_____

2. List current medicines (including nonprescription drugs) _____

_____

_____

_____

_____

3. Allergies (drugs, food, chemicals) _____

_____

_____

_____

4. Are you currently under a physician's care? YES ___ NO ___
   If yes, please explain _____

_____

_____

_____

_____

_____

5. Have you ever been told that you have asthma, hay fever, or sinusitis?
   YES ___ NO ___
6. Have you ever been told that you have emphysema, bronchitis, or any other respiratory problem? YES ___ NO ___
7. Have you ever been told that you had cancer? YES ___ NO ___
8. Have you ever been told that you had high blood pressure?
   YES ___ NO ___
9. Have you ever had a heart attack or heart trouble? YES ___ NO ___
10. Do you ever have any shortness of breath? YES ___ NO ___
    If yes, do you have to rest after climbing several flights of stairs?
    YES ___ NO ___
    If yes, do you walk on a level that is slower than other people your own age?
    YES ___ NO ___
    If yes you do walk slower than a normal pace, do you have to limit the distance that you walk? YES ___ NO ___
    If yes, do you have to stop and rest while bathing or dressing?
    YES ___ NO ___

11. Do you cough as much as three months out of the year? YES ___
NO ___
If yes, have you had this cough for more than two years? YES ___
NO ___
If yes, do you ever cough anything up from the chest? YES ___
NO ___
12. Do you ever have a feeling of smothering, unable to take a deep breath or tightness in your chest? YES ___ NO ___
If yes, do you notice this on any particular day of the week? YES ___
NO ___
If yes, what day of the week? _____
If yes, do you notice this occurs at any particular place? YES ___
NO ___
If yes, do you notice that this is worse after you have returned to work after being off for several days? YES ___ NO ___
13. Have you ever noticed any wheezing in your chest? YES ___
NO ___
If yes, is this only with colds or other infections? YES ___ NO ___
Is this caused by exposure to any kind of dust or other material?
YES ___ NO ___
If yes, what kind? _____
14. Have you noticed any burning, tearing, or redness of your eyes when you are at work? YES ___ NO ___
If so, explain circumstances: _____
_____
_____

15. Have you noticed any sore or burning throat or itchy or burning nose when you are at work? YES ___ NO ___
    If so, explain circumstances: _____
    _____
    _____
16. Have you noticed any stuffiness or dryness of your nose? YES ___ NO ___
17. Do you ever have swelling of the eyelids or face? YES ___ NO ___
18. Do you have frequent headaches that are not relieved by aspirin or Tylenol? YES ___ NO ___
    If yes, do they occur at any particular time of the day or week?
    YES ___ NO ___
    If yes, when do they occur? _____
    _____
19. Do you tend to have trouble concentrating or remembering? YES ___ NO ___
20. Do you ever feel dizzy, light-headed, excessively drowsy, or like you have been drugged? YES ___ NO ___
21. Does your vision ever become blurred? YES ___ NO ___
22. Do you have numbness or tingling of the hands or feet or other parts of your body? YES ___ NO ___
23. Have you ever had chronic weakness or fatigue? YES ___ NO ___
24. Do you ever have itching, dryness, or peeling and scaling of the hands? YES ___ NO ___

FAMILY SOCIAL HISTORY

25. Mother – Age: ____ Medical History: _____

_____

26. Father – Age: ____ Medical History: _____

_____

27. Brothers – How Many: ____ Medical History: _____

_____

28. Sisters – How Many: ____ Medical History: _____

_____

29. Other: _____

_____

_____

30. Married: ___ Single: ___ Widowed: ___ Children: ____
31. Cigarettes: ____ packs a day; how many years? ____
32. Alcohol: How much? _____
33. Coffee: ___ cups a day. Decaf? ___
34. Other recreational drugs? _____
35. Do you wear contact lenses? YES ___ NO ___
36. Do you exercise regularly? YES ___ NO ___

    If yes, explain: _____

    _____

37. Do you have any hobbies or side jobs that require you to be exposed to hazardous compounds, (such as furniture stripping, pottery, woodworking, ceramics, sand blasting, insulation, auto repair, or body work)? YES ___ NO ___

    If yes, explain: _____

38. Years at present employer: _____
39. Other jobs held with this employer (include title/description, dates assigned, chemicals or fumes exposed to): _____

_____

_____

40. Any type of skin rash? YES ___ NO ___
41. Do any chemicals, fumes, or smoke make you

Cough? YES ___ NO ___

Wheeze? YES ___ NO ___

Become short of breath? YES ___ NO ___

If yes, explain: _____

_____

42. Shift you normally work: _____ to _____
43. In other jobs, have you ever been exposed to:

Wood dust? (Type _____) YES ___ NO ___

Nickel? YES ___ NO ___

Chromium (stainless steel)? YES ___ NO ___

Silica (foundry, sand blasting)? YES ___ NO ___

Asbestos? YES ___ NO ___

Organic solvents (i.e., trichloroethylene)? YES ___ NO ___

Formaldehyde? YES ___ NO ___

Coal Dust? YES ___ NO ___

Ammonia? YES ___ NO ___

Welding Fumes? YES ___ NO ___

PHYSICIAN'S APPROVAL FOR RESPIRATOR ASSIGNMENT

Employee Name: _____ SSN: _____

Employer: _____ Date: _____

I have reviewed and/or completed the following:

1. Medical/Occupational History Questionnaire YES __ NO __
2. Respirator Information for Physician YES __ NO __
3. Pulmonary Function Test Result YES __ NO __
4. Physical Examination YES __ NO __

Based on the information provided in the above stated forms, tests, and exam, it is my opinion that this individual is physically and emotionally fit to wear a respirator due to his/her occupational environment.

YES __

NO __

COMMENTS: _____

_____

_____

Physician's Signature: _____ M.D., D.O.

PRINT THE FOLLOWING

Physician's Name: _____

Address: _____

Telephone: (____) ____-_____

RESPIRATOR INFORMATION FOR PHYSICIAN

Employee Name: _____ SSN: _____

Employer: _____ DATE: _____

Department/Division: _____

_____

Job Title/Description: _____

_____

Dates at this Job Title: _____ to _____

Primary Hazardous Compounds for this Job Title: _____

_____

Type of Respirator to be assigned: _____

FOR ADDITIONAL INFORMATION, PLEASE CONTACT: _____

_____ AT _____

Completed by: _____

Title: _____

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Hepatitis B Vaccine Declination

Reference Title 29, Code of Federal Regulations, Part 1910.1030 App. A

I, the undersigned employee, understand that due to my possible occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection.

I have been given the opportunity to receive the HBV vaccine at no cost to me.

However, I decline to receive the HBV vaccine at this time.

I understand that by declining the HBV vaccine I continue to be at risk of acquiring hepatitis B, a serious disease.

If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I wish to receive the HBV vaccine, I may then receive the vaccine at no cost to me.

_____	_____
Employee Name (printed)	Employee KHRIS Number
_____	_____
Employee Signature	Date

Rev. 09/2017

KYTC EMPLOYEE SAFETY AND HEALTH BRANCH

PRESSURE WASHER SAFETY CHECKLIST

IMPORTANT: Pressure washers are used to clean equipment, materials, and work areas on the job. They must be used with extreme caution as the water is under high pressure and moves with enough force to damage eyes and abrade skin. ***Prior to beginning work*, read over this safety checklist, as well as the operator's manual, and follow the manufacturer's instructions for safe use, maintenance, and storage.** Additional information on pressure washer safety is available at https://www.cdc.gov/disasters/pressurewashersafety.html

		✓
1	Read all the safety stickers on the pressure washer prior to use.	
2	Check the pump and engine oil level prior to each use.	
3	Turn on the water supply ***before*** turning on the pressure washer to avoid damage.	
4	Make sure the washer is on a flat and level surface during operation.	
5	Wait for the engine and/or burner to cool down prior to refueling. Do not refuel while hot.	
6	Purchase a new high pressure hose if there are signs of damage. Do not attempt self repair.	
7	**PPE ALERT:** Always wear long pants and gloves. Keep hands, feet, and body out of contact with the high pressure water stream.	
	Always wear safety goggles/glasses and closed-toe leather or rubber boots. Never wear open-toed sandals or flip-flops when operating a pressure washer.	
	Always wear hearing protection. The engine/motor is not enclosed; therefore, the decibels generated by the motor and pump may damage your hearing.	
8	Hold onto the spray wand firmly with both hands to ensure control of the water stream.	
9	Always engage the safety latch before setting the spray wand down. Never leave a pressure washer unattended while running.	
10	Never point the sprayer at another person whether the pressure washer is operating or not, as it could discharge unexpectedly and cause serious injury.	
11	Do not use a pressure washer while standing on a ladder or from other unstable positions where you are not in full control of your balance. Do not reach so far that you lose your balance.	
12	Do not operate a gas pressure washer indoors or in other enclosed structure to avoid buildup of invisible, poisonous carbon monoxide gas. Vent pressure washer, if required. If you experience dizziness, fatigue, headache, nausea, or irregular breathing, turn off the pressure washer, get fresh air, and seek medical attention.	
13	Do not use a pressure washer in an area where the water could contact electrical equipment.	
14	Always plug an electric pressure washer into a properly grounded GFCI outlet.	
15	Never cut or splice the pressure washer's power cord or extension cords.	
16	Always have a qualified electrician check the pressure washer for electrical problems after it has tripped a circuit breaker.	
17	Never remove the grounding prong from the pressure washer's power cord plug or extension cord.	
18	After turning off the pressure washer, always release any residual pressure by squeezing the trigger before disconnecting the hoses and nozzles.	
19	Allow the pressure washer to cool down before moving or storing. The combustible engine, electric motor, and burner can get extremely hot following extended use. Use caution!	
20	If the pressure washer is found to be defective, immediately remove it from service, red tag the machine, and report the issue to your next line supervisor.	