Davie County Safety Policies and Procedures

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SAFETY POLICY STATEMENT

Davie County staff has implemented a safety program in order to be compliant with all federal, state, and local regulations, striving to accomplish the following goals:

1. We will strive to provide safe working conditions for all employees.

2. Reasonable efforts will be made to provide safe, secure, organized activity areas where County operations involve the general public.

3. Documentation of all safety related issues will be kept current and maintained for at least the periods required by applicable regulation.

4. Each employee will be provided with the training, information, and equipment indicated for safe, competent productivity.

5. The County will strive to train each employee to understand his/her rights and responsibilities for safety as required by law.

6. A Safety Committee consisting of a majority of non-supervisory personnel representing each department of the County and chaired by a designee elected by the Committee, will be formed and will meet quarterly (at a minimum) to consider (but not limited to) the following items:

   - ✓ Review of recommendations for safety policies and procedures
   - ✓ Review of all accidents or injuries involving employees
   - ✓ Conduct and discuss safety inspections of the work place
   - ✓ Plan for safety training and monitor the effectiveness of safety training
   - ✓ Review of records to determine improvements needed in the safety program

   A written agenda and minutes will document the efforts of the Safety Committee. A summary report of the proceedings will be made available to the County Manager and County Commissioners.

   Each Department Director will appoint a Safety Committee representative to attend meetings, conduct regular departmental inspections, maintain the Safety Manual, and provide safety program orientation to new employees.

7. Each Department Director should familiarize himself with the comprehensive Safety Policies and Procedures and develop additional safety plans specific to his/her department that clearly indicate departmental safety practices, training, and compliance with the objectives of the County's Safety Policy.

8. At departmental staff meetings, the Safety Committee representative will report on safety issues, concerns, inspection results, and scheduled safety training.

The County Commissioners and Manager intend for Davie County to be an example of safe productivity and will reasonably fund efficient means to achieve these goals.

RESPONSIBILITY

It is the responsibility of Davie County Manager, Directors, and Supervisors to uniformly administer, communicate, and ensure compliance.

It is the responsibility of the Safety Committee to interpret, monitor, and update the policy content.

It is all employees' responsibility to comply with policy guidelines.

Any violation or policy misuse will result in disciplinary action up to and including dismissal.

Michael M. Ruffin, County Manager

Effective Date:

Signature: Michael M. Ruffin

November 1, 2015

Safety Committee Leadership Responsibilities

Overview

Safety Committee leadership will consist of the Safety Committee Chair, a Vice Chair, a Secretary, Inspection Evaluator, and the Safety Coordinator. Leadership members should serve as a Safety Committee Representative for at least one year prior to taking the seat and will be elected by the Safety Committee representatives. The Safety Coordinator will be appointed by the County Manager to perform Workers' Compensation and Property and Liability insurance claims and will serve on the Safety Committee for the duration.

Election or appointment to leadership positions will occur in July of each year and positions will be assumed in September. Vacant positions due to resignation will be filled at the next Safety Committee meeting. Persons in a safety leadership role will be part of the Executive Safety Committee.

Responsibilities

Chair Responsibilities:

- Schedule and prepare an agenda for Safety Committee meetings to be held at least quarterly. Preside over the Safety Committee meetings as scheduled.
- Ensure that Department Directors appoint a representative to the Safety Committee to serve at least one year.
- Review OSHA standards on a regular basis to identify needed changes in plans, procedures, or processes. Present at Safety Committee meetings to ensure implementation of new or revised standards.
- Ensure that Safety Plans, Policies, & Procedures are reviewed at least every two years. Ensure that updates are provided to Safety Committee representatives to update the departmental Safety Manuals.
- Ensure that a clear process for safety orientation for new employees is available and implemented. Ensure that new committee representatives are provided an orientation to their duties.
- Schedule and implement fire extinguisher training for Safety Committee representatives.
- Coordinate with the Fire Marshal to ensure that annual fire drills are held for each department and fire drill evaluations are completed and reviewed by the Safety Committee.
- Ensure that training records for each employee are maintained, up-to-date, and filed in the departmental Safety Manuals.
- Ensure that injury and illness reports are reviewed by the committee representatives to identify strategies for making the work place safer.
- Provide an orientation to in-coming Safety Committee Chair Person.

Vice-Chair Responsibilities:

- Notify Safety Committee representatives of upcoming meetings.
- Assume duties of the Safety Committee Chair when the Chair is unable to perform duties or when delegated by the Chair.
- Assist with responsibilities of the Executive Committee.
- Provide an orientation to in-coming Safety Committee Vice-Chair Person.

Secretary Responsibilities:

- Attend Safety Committee meetings and take minutes. Prepare written minutes and distribute to members and the County Manager.
- Maintain the official Safety Committee Minute book with minutes and handouts distributed at the meetings. Minutes books from previous year(s) are to be retained in the County Manager's office for archiving.
- Maintain an up-to-date list of Safety Committee Representatives with contact information.
- Distribute materials handed out at meetings to committee representatives who were unable to attend meetings with the meeting minutes.
- Provide Safety Inspection Forms to safety representatives to complete and return at Safety Committee meetings.
- Provide an orientation to in-coming Safety Committee Secretary.

Inspection Evaluator Responsibilities:

- Ensure that regular safety inspections are completed in each department by the committee representatives.
- Collect and tally Safety Inspection Forms turned in by safety representatives.
- Keep records of all departments reporting.
- Evaluate results and identify trends/issues needing improvement from the returned department inspections.
- Provide a summary report of results at each safety meeting to be included in each departmental Safety Manual.

Safety Coordinator Responsibilities:

- Report and manage all Workers Compensation and Property and Liability claims through the insurance company.
- Record and maintain all records and claims that pertain to on the job injuries. Keep OSHA 300 logs up-to-date.
- Provide each safety representative with OSHA 300A Forms that are to be posted from February to April of each year.
- Meet with Department Directors to provide a brief introduction to the Davie County Safety Committee and the importance of allowing time for their Safety Representative to conduct their responsibilities. Provide Department Directors with a copy of the responsibilities found in the Safety Manual.
- Provide an overview of the Davie County Safety Policy and Injury Reporting Procedures at new hire orientation.
- Coordinate annual Safety Education/Training between the Executive Committee and the Insurance Carrier.
- Assist safety representatives with the updates to the departmental Training Records annually to include Safety Education/Training participation. Include an up-to-date copy annually in the Master Safety Manual.

Executive Committee (Chair, Vice Chair, Secretary, Inspection Evaluator, Safety Coordinator) Responsibilities:

- With assistance from the Risk Management/Insurance Carrier, review the OSHA and NFPA regulations for updates or revisions and as needed. Arrange consultation with Risk Management/Insurance Carrier regarding OSHA regulations.
- With assistance from the Risk Management/Insurance Carrier, review and revise the Safety Policies and Procedures, Safety Inspection Forms, and Safety Orientation Scavenger Hunt as needed.
- Print and distribute revised Safety Policies and Procedures.
- Plan, implement, and evaluate the annual Safety Education/Training. Present evaluation to the Safety Committee.
- Coordinate and schedule safety inspections of each department with the Public Facilities Director, Risk Management/Insurance Carrier, and Safety Representatives.

Emergency Management Coordinator, Public Utilities Director, Public Utilities Safety Representative, and Public Utilities Staff Responsibilities:

- Plan for and facilitate the implementation of the Process Safety Management regulations at Sparks Road Water Plant including review/ revision of the 17 part manual (due in 2015).
- Schedule and facilitate meetings with Sparks Road staff and Public Utilities Director for the Process Hazard Analysis every 5 years (due in 2015).
- Plan and facilitate a meeting for the Compliance Audit required every 3 years (due in 2018).
- Review the Process Safety Manual annually to ensure implementation of required education, reporting, inspections, and drills.
- Plan and implement a county wide drill for major chlorine leak at least every 3 years (due again in 2018).

SAFETY COMMITTEE

REPRESENTATIVES' RESPONSIBILITIES

PURPOSE

As part of the Safety Program, Davie County will maintain a Safety Committee to evaluate and direct the program.

ELIGIBILITY

The Safety Committee will consist of County employees representing all department locations.

PROCEDURES

Each Department Director will designate a staff member to serve as the Safety Committee Representative for a period of at least one year. The Department Director will ensure that the new representative receives an orientation to this role with the previous representative or from a safety representative from another department.

RESPONSIBILITIES

Safety Representative Responsibilities:

- Attend Safety Committee meetings as scheduled.
- Complete department inspections and complete Inspection Forms as scheduled and provide a copy to the Inspections Evaluator.
- Inspect fire extinguishers and emergency lighting monthly and document inspection by initialing the tag attached to the fire extinguisher.
- Maintain and update the department Safety Manual.
- Maintain the SDS Inventory for your department.
- Function as Fire Warden in emergencies – ensure that all staff members hear alarms or are told of emergency. Ensure that all staff is present in the designated location with evacuation.
- Complete fire extinguisher training.
- Coordinate a Fire Drill at least annually with the Fire Marshal. Complete the Fire Drill Evaluation form and send a copy to the Safety Committee Chair or Inspection Evaluator.
- Ensure that the Safety Scavenger Hunt is completed by new staff and that their name and date of completion is added to the Safety Training Record.
- Update the Safety Training Record with names and dates that employees complete annual safety training/education.
- Report on safety committee actions to employees at departmental staff meetings.

PUBLIC UTILITIES SAFETY TEAM RESPONSIBILITIES

PURPOSE

Plan and execute emergency and safety programs for Public Utilities.

ELIGIBILITY

A team to oversee the emergency preparedness plans for Public Utilities will consist of, but limited to, the Emergency Management Coordinator, Public Utilities Director, Public Utilities Safety Representative, and the Public Utilities Staff. The Risk Management/Insurance Carrier representative will be consulted when needed.

RESPONSIBILITIES

Emergency Management Coordinator, Public Utilities Director, Public Utilities Safety Representative, Public Utilities Staff, and Risk Management/Insurance Carrier Responsibilities:

- Plan for and facilitate the implementation of the Process Safety Management regulations at Sparks Road Water Plant including review/ revision of the 17 part manual (due in 2015).
- Schedule and facilitate meetings with Sparks Road staff and Public Utilities Director for the Process Hazard Analysis every 5 years (due in 2015).
- Plan and facilitate a meeting for the Compliance Audit required every 3 years (Scheduled for early 2015. Due again in 2018).
- Review the Process Safety Manual annually to ensure implementation of required education, reporting, inspections, and drills.
- Plan and implement a county wide drill for major chlorine leak at least every 3 years (Scheduled for early 2015. Due again in 2018).

Mike M. Ruffin, County Manager | Effective Date: February 4, 2015

Signature:

NOTICES AND RECORDKEEPING

Purpose

The purpose of this policy is to keep Davie County employees informed of their rights under the Occupational Safety and Health Act (OSHA) and to keep them posted on information provided by the Department of Labor. Recordkeeping provides a database to OSHA that will allow them to: (1) enforce the Act; (2) study the causes and prevention of occupational accidents and illnesses; and (3) maintain useful statistics.

Information Sources

The information for Notices & Recordkeeping is from the Occupational Safety and Health Standards 29 CFR 1903.2 (Posting Requirements). The information for Recordkeeping is from OSH Standard 29 CFR 1904, effective June 30, 2003. "A Brief Guide to Recordkeeping Requirements for Occupational Injuries and Illnesses" published by the U.S. Department of Labor - Bureau of Labor Statistics is an additional source of information.

Recordkeeping guidelines are also provided by the State of North Carolina Department of Labor - Research and Statistics Division's OSHA Recordkeeping Guidelines for Occupational Injuries and Illnesses.

Notices

Since Davie County has more than 10 employees, required notices must be posted in conspicuous places where employees report for work and where other employee notices are posted.

The following items must be posted at each facility site and are obtained from the Finance Office:

1. Official Department of Labor posters:
    - NC Dept of Labor OSH and Wage and Hour Notice to Employees
    - Fair Labor Standards (FLSA)
    - Equal Employment Opportunity (EEOC)
    - Family and Medical Leave Act (FMLA)
    - Uniformed Services Employment and Reemployment Rights Act Notice (USERRA)
    - NC Workers' Compensation Notice (Form 17)
2. Annual Summary of Illnesses and Injuries for the month of February – April.
3. In the event of an OSHA Inspection, the following will be posted at the site for 3 days and then available in the County Manager's Office:
    - Citations issued
    - Amended citations
    - Employer's contest of citations
    - Employer's contest of abatement/correction schedule
    - Correction schedule

:

Recordkeeping

Two forms are used for OSHA recordkeeping: 1) the OSHA 300 Log and 2) the OSHA 301 Form.

OSHA No. 300 (Log of Work Related Injuries and Illnesses) is used as a log for all recordable occupational injuries and illnesses which are those that result in:

- Fatalities, regardless of the length of time between injury and death or between illness and death
- Lost workdays - the number of days, consecutive or not, after the date of injury/illness that the employee could not perform his job duties due to the injury/illness.
- Restricted work or transfer to another job
- Medical treatment beyond first aid
- Loss of consciousness
- Diagnosed significant injury/illness by an MD. Exemptions include common colds/flu, blood donations, and mental illnesses.

OSHA Recordkeeping Guidelines for Occupational Injuries and Illnesses.

Records are to be kept on form OSHA No. 300 on a calendar year basis.

A designated office will maintain the OSHA 300 Log. The designated office is the Finance Office.

The annual Summary of Work Related Injuries and Illnesses section of the OSHA 300 form will be completed by the designated office staff and posted by February 1st and remain posted until April 30th at the Safety Information area by each Department Safety Representative.

Records will be maintained for **five years** and be made available to the Department of Labor, employees and former employees and their representatives upon request within a reasonable period of time without cost.

As directed in *29 CFR 1904.39*, all employers must report

1. All work-related fatalities within 8 hours.
2. All work-related inpatient hospitalizations, all amputations and all losses of an eye within 24 hours.

You can report to OSHA by

1. Calling OSHA's free and confidential number at 1-800-321-OSHA (6742).
2. Calling your closest Area Office during normal business hours.

Only fatalities occurring within 30 days of the work-related incident must be reported to OSHA. Further, for an in-patient hospitalization, amputation or loss of an eye, these incidents must be reported to OSHA only if they occur within 24 hours of the work-related incident.

OSHA 301 form is used to record specific details about a recordable injury or illness. Worker's compensation, insurance, or other reports are acceptable as records if they contain all facts listed on the OSHA 301.

Supervisors and employees will use the **Employee Accident/Injury Report** form to record injury information and forward to the Safety Coordinator.

Form 19 - Employer's Report of Employee's Injury or Occupational Disease to the Industrial Commission will be used to record all reportable injuries or illnesses with the administering insurance company.

Evaluation of Plan

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review OSHA 300 log entries at each meeting to determine trends and issues and to implement strategies to decrease or limit reportable injuries or illnesses.

STEPS FOR REPORTING INJURIES

PROCEDURES

A. Employee accident or injury:

1. **Administer First Aid or call 911** if emergency assistance is needed.
2. **Notify the Supervisor** immediately.
3. **Within 1 hour of injury**, **email** completed **2C**. **Employee Accident/Injury Report** to the Workers' Compensation Administrator, Kim Harris at kharris@daviecountync.gov.
4. **Fill out and take 2D. WC Injury Verification** to an approved medical care provider.
5. Take the **2E. NCACC Prescription First Fill Sheet** to a participating pharmacy if medication is prescribed.
6. Directors or supervisors should conduct **2F. Incident Investigation** and report findings to the Safety Executive Committee using the form.
7. A witness may use **2G. Witness Statement Form** to provide a statement.

B. Approved Workers' Compensation Medical Providers

Please note: Your personal physician's office is not an approved site for Workers' Comp.

Wake Forest Baptist
Urgent Care Center
1188 Yadkinville Road
Mocksville, NC 27028
336 713 0555
Or
2311 Lewisville-Clemmons Road
Clemmons, NC 27103
336-713-0400

Novant Health
Primecare Facilities
Located in Forsyth, Iredell, or Rowan County

For After-Hours Emergencies or Serious Injuries,
use Nearest Hospital

C. SERIOUS ACCIDENT involving Hospitalization or Fatality (after hours and holidays):

Immediately notify the County's Public Information Officer and Workers' Comp Administrator by **calling Communications at 751 0896**

Notify the NC Department of Labor:

- within 8 hours of a **fatality**
- within 24 hours of an **employee's hospitalization**
- within 24 hours of an **employee's amputation or loss of an eye**

at **1-800-625-2267 or 919-779-8560** weekdays, 8 a.m. to 5 p.m. or
by calling the **State Capitol Police at 919-733-3333** after hours, weekends or holidays.

Employee Accident/Injury Report

Form is to be filled out by the employee and/or the supervisor and submitted to the Workers' Compensation Administrator, Kim Harris at kharris@daviecountync.gov on the day of injury.

Personal Information:

Name (Please print)	*Social Security Number*			*Date of Birth*
Mailing Address	*City*	*State*	*Zip*	*County*
Home Phone	*Work Phone*	*Cell Phone*		
Job Title	*Department*	*Supervisor*		
Employee's Hire Date	*Marital Status*	*Time employee began work on day of injury*	*am* ☐ *pm* ☐	*Gender*

Accident/Injury Information:

Did an injury occur?	☐ Yes	☐ No	
Date of Accident/Injury	*Day of Week*	*Time Accident/Injury Occurred*	*am*☐ *pm*☐
Where did the accident/injury occur?		*Give an Address, zip, County*	

Object, Machine, Tool, Vehicle causing accident/injury:

a.	*Was Safety Training conducted?*	☐ *Yes*	☐ *No*	
b.	*Was Safety Appliance, PPE, etc., used?*	☐ *Yes*	☐ *No*	

What task or activity were you performing?

What is the work process?

What body part was injured?

Please give a detailed description of how the accident/injury occurred.

Medical Treatment Information:

Did employee receive First Aid?	☐	Yes	☐	No
Did employee seek medical treatment at a medical facility?	☐	Yes	☐	No
Name of Hospital/Clinic			*Name of Physician*	
Address	*City*	*State*	*Zip*	*County*
Phone	*Fax*			

Transported by: *(check one)* ☐ Self ☐ other driver ☐ ambulance ☐ airlifted ☐ other

Employee Signature: _____ **Date:** _____

Supervisor Signature: _____ **Date:** _____

Notice of Disclaimer: In signing this Accident/Injury Report, I am stating that the facts related are true to the best of my knowledge. I also understand that willfully making a false claim in regards to a work-related injury will result in termination of my employment and possible criminal

prosecution under NC Workers' Compensation Laws. I understand that, if I should require medical attention now or at a later time, I am required to contact my supervisor and go to an approved medical facility to fulfill Workers' Compensation requirements.

WORKERS' COMPENSATION

VERIFICATION FORM

Injured employee must take this form to the healthcare facility for initial visit.

County of Davie

Department _____

Today's Date: _____

Employee's Name: _____

DOB: _____ Date of Injury: _____

Chief Complaint (Body Part): _____

Brief description of how injury happened:

_____

_____

County's Contact Information

County of Davie
Attention Kim Harris
123 South Main Street
Mocksville, NC 27028
Phone 336 753 6070
Email: kharris@daviecountync.gov

Worker's Comp Insurance Administrator

Sedgwick CMS
P. O. Box 241125
Charlotte, NC 28224
Phone: 800 822 4469
Fax: 704 423 6210

Workers' Compensation Services Requested:

Authorized to evaluate and treat

Authorized for one visit only

No Drug Screen Required

HELIOS

P.O. Box 152539
Tampa, FL 33684-2539

sedgwick

MAKING IT EASY...
TO GET WORKERS' COMPENSATION PRESCRIPTIONS FILLED.

Helios has been chosen to manage your workers' compensation pharmacy benefits for your employer or their insurer. Below is your First Fill card that will allow you to receive your injury-related prescriptions at your local pharmacy. Please fill out the card based on the instructions below.

Injured Employee:

If you need a prescription filled for a work-related injury or illness, go to a Helios Tmesys network pharmacy. Give this temporary card to the pharmacist. The pharmacist will fill your prescription at low or no cost to you.

If your workers' compensation claim is accepted, you will receive a more permanent pharmacy card in the mail. Please use that card for other work-related injury or illness prescriptions.

Most pharmacies, including Walgreens, our preferred provider, and all major chains, are included in the network. To find a network pharmacy call 866.599.5426 or visit www.tmesys.com and click on "Pharmacy Locator."

Questions? Need Help?

866.599.5426

tmesys® sedgwick

Sedgwick — CARRIER/TPA
NCACC — EMPLOYER

INJURED WORKER NAME

Provide to Pharmacy
SOCIAL SECURITY NUMBER — DATE OF INJURY (YYMMDD)

Notice to Cardholder: Present this card to the pharmacy to receive medication for your work-related injury. To locate a pharmacy: www.tmesys.com\pharmacy-locator
Download Free Mobile App: www.tmesys.com\MyWorkComp

HELIOS

Attention Pharmacists: Call 800.964.2531 to establish First Fill benefit eligibility and obtain the ID number for online adjudication of approved benefits for the injured worker. Tmesys is the designated PBM for this patient.

Tmesys Pharmacy
Help Desk 800.964.2531

	NDC		Envoy
RxBIN	004261	or	002538
RxPCN	CAL	or	Envoy Acct. #

HELIOS

NOTE: This First Fill card is only valid for your workers' compensation injury or illness.

Employer:

Immediately upon receiving notice of injury, fill in the information above and give this form to the employee.

tmesys®

INCIDENT INVESTIGATION REPORT

BASIC ACCIDENT FACTS(to be filled out by Supervisor or Manager)

INJURED EMPLOYEE: _____ **DEPARTMENT:** _____

LENGTH OF SERVICE - With County: _____ On This Job: _____ **AGE:** ____ **SEX: M F**

NATURE OF INJURY: _____

NATURE OF PROPERTY DAMAGE: _____

DATE & TIME -- Of Incident: _____ Reported: _____ Investigated: _____ This Report: _____

Explain if all dates are not the same: _____

_____

INCIDENT DESCRIPTION: Describe exactly what happened, including exactly what the employee was doing and any extenuating circumstances:

_____

_____

CAUSATION FACTORS

JOB PROCEDURES: Describe job procedure issues which may have contributed to the incident. Are there established procedures? Did the employee follow prescribed procedure? Were unsafe acts involved?

_____

_____

_____

BEHAVIORAL FACTORS: Are there behavioral issues, such as lack of knowledge, disregard of instructions, inadequate training, emotional upset, or excessive haste, which may have contributed to the incident?

_____

_____

PHYSICAL CONDITIONS: At the incident scene, look at equipment, materials and the environment. Describe the conditions reviewed here or by checking boxes in the list below. Be sure to list any conditions needing corrective action.

_____

_____

_____

SAFETY PROGRAMS/POLICIES/RULES: Are there contributing factors that safety policy, inspection, testing, authorization, rules, etc. could correct if implemented?

_____

_____

_____

_____

Report By: **Manager:**

_____ **Date:** _____ _____ **Date:** _____

WITNESS STATEMENT FORM

Today's Date: _____ Date of Accident/Injury: _____

Time of Accident/Injury: _____ a.m. / p.m.

What were you doing prior to the accident/injury occurring? _____

In detail, what did you actually see happen? _____

_____ _____

Witness Signature Date

In signing this statement, I am stating that the facts related are true to the best of my knowledge. I also understand that willfully making a false statement concerning an accident/injury that I witnessed will result in disciplinary action to include possible termination of my employment.

NOTICES AND RECORDKEEPING

SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Are the following required notices posted in a conspicuous place where other employee notices are usually posted?			
a. Official OSHA poster "Job Safety and Health Protection"			
b. Annual summary of illnesses and injuries in Feb-Apr			
2. Has Department Director or safety representative received updated information from the OSHA 300 Log for injuries and illness at the Safety Committee meeting?			
3. Has OSHA visited your department in the last 12 months? If yes, continue with question 4. If no, disregard.			
4. After an OSHA inspection, are the following posted for 3 days?			
a. Citations and amended citations issued to employer			
b. Employer's contest of citation			
c. Employer's contest of abatement date			
d. Variance applications			
Recommendations for Improvement:			
NOTE: If all employees do not report to a single location, postings should occur at all locations to ensure that all employees are informed.			

EMPLOYEE SAFETY TRAINING

PURPOSE

The purpose of this policy is to ensure that employees receive the needed safety training. Proper training provides a safe working environment for the employees of Davie County and complies with the Occupational Safety and Health Act (OSHA).

RESPONSIBILITIES

Department Directors are accountable for maintaining current safety training records for all employees and ensuring that employees receive required safety training. All new employees will review the safety manual and complete the Safety Orientation Scavenger Hunt during **employee orientation**.

The Safety Committee *departmental representative* is responsible for adding the new employees name and date of completion of the Safety Orientation to the Safety Training Record found in this section.

The Safety Committee will sponsor annual safety training for all Davie County employees to provide required education. Additional departmental safety training required by OSHA under Standard 1910 will include but not limited to:

Subpart E	Means of Egress
Subpart H	Hazardous Materials
Subpart Z	Hazard Communication and MSDS Location
	Occupational Exposure in Laboratories
Subpart I	Personal Protective Equipment
Subpart J	General Environmental Controls
	Electrical Safety and Lock Out / Tag Out Program
	Confined Spaces
Subpart K	Medical Services and First Aid
Subpart L	Fire Protection, Detection, & Alarm Systems
Subpart N	Material Handling and Storage
Subpart O	Machinery and Machine Guarding
Subpart Q	Welding, Cutting, and Brazing
Subpart S	Electrical Safety Related Work Practices

Departments will use the Safety Training Record included in this section or similar records to maintain a current document of employee safety training.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review percentage completion of annual safety training by each department and recommend actions to improve if needed.

Davie County Training Record--

____
(department name)

	First Name	Last Name	Safety Orientation	Safety Ed 2010	Safety Ed 2011	Safety Ed 2012	Safety Ed 2013	Safety Ed 2014	Safety Ed 2015	Safety Ed 2016	Safety Ed 2017	Safety Ed 2019	Safety Ed 2020
					Emergency Preparedness	Driven to Distratction Video	Fire Extinguisher Training	OSHA regulation change on Hazardous Communication					

SCAVENGER HUNT

EMPLOYEE SAFETY TRAINING

Name / Title _____ Dept _____ Date _____

Instructions: Answer the following questions by scavenging through the Safety Manual. Return this to Human Resources Department or your Department Director within one week.

1. Where is the Safety Manual located in your department?

2. How many sections are in your Safety Manual? (Table of Contents) _____

3. List two objectives of the overall Safety Program. (Safety Policy)

   1.

   2.

4. Who is your departmental Safety Committee representative? _____

   List two responsibilities of the representative. (Safety Policy)

   1.

   2.

5. Where is the OSHA poster "Job Safety and Health Protection" that describes the OSHA act located? (Notices and Record Keeping)

6. You must notify your supervisor of an on the job injury immediately. How long do you or the Director have to notify the Davie County Workers' Compensation Administrator in the Finance Department? _____

7. Please **add your name** to the Safety Training Record with the date that you are completing this quiz in the safety orientation column. (Training Records)

8. What is your responsibility during an emergency? (Emergency Preparedness)

9. How often must the fire extinguishers be inspected? (Emergency Prep / Fire Prevention)

____ Monthly _____ Quarterly ____ Annually

10. What personal protective equipment do you use in your job? (Personal Protective Equipment or Respiratory Protection)

11. What are SDS sheets and where do you find them? (Hazard Communication)

12. Can extension cords be used in the facility? (Facility Safety)

( ) No ( ) Yes, explain _____

13. Can portable electrical heaters be used in county buildings?

( ) No ( ) Yes, explain _____

14. List 3 measures for safe Materials Handling and Storage. (Facility Safety)

1.

2.

3.

15. What is Ergonomics? (Facility Safety)

16. Drivers using County vehicles or their own personal vehicles are required to _____ by all traffic regulations, laws and ordinances while driving for the County.

17. What do you do if you are exposed to blood or body waste during work? (Blood Borne Pathogens)

EMPLOYEE SAFETY TRAINING
SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

#	Inspection Item	Yes	No	NA
1	Does every new employee have documentation of orientation to the Safety Plans? (Completed Safety Scavenger Hunt)			
2	Do all new employees have training in safe work procedures for their job?			
3	Do transferred or cross-trained employees have training in safe work procedures in the new area / job?			
4	Are inspection results and identified safety issues included for training and discussed with staff members?			
5	Are training records for the department up-to-date with correct employees and dates of participation in annual safety training?			
6	What Safety Training has been provided to employees in your department in the last 12 months?			

Comments:

EMERGENCY PREPAREDNESS PLAN

PURPOSE

The purpose of this plan is to maintain a safe working environment for the employees of Davie County by preventing injury or illness usually caused by emergency situations. The purpose of this document is to meet the requirements of the Occupational Health and Safety Act (OSHA) standards.

INFORMATION SOURCES

Information for this policy was obtained from OSHA Standard 1910.36, 37, 38(a), 120, 157, 165).

RESPONSIBILITIES

Department Directors will be accountable for the proper instruction of their employees. The Director must ensure that the employees understand their particular roles in any given emergency situation and that they receive the appropriate training that is required by the regulations at the time of hire and with any changes in procedure.

The employees must become familiar with the requirements of this standard and what their particular assignment is in any given emergency situation. Each employee must be able to recognize potential hazards and alert the appropriate supervisor or safety committee member.

EMERGENCY PREPAREDNESS PLAN

This Emergency Plan is designed to address potential emergencies (such as fire, weather, bomb threat, workplace violence and hazardous chemical spills) and to adopt procedures that will allow county employees to react calmly and responsibly to those situations. The County Emergency Management Plan takes priority over this plan at all times. The county's alarm and evacuation procedures must be followed by each employee.

This plan is divided into five sections:

1) Escape and Evacuation
2) Employee Roles
3) Training Requirements
4) Alarm Systems
5) Contacts.

Escape and Evacuation Procedures

The Department Director will designate an evacuation path from each municipal building within his / her department. These routes will cover different paths of escape so as to provide an option if one escape route is blocked or in close proximity to danger. These routes will work in conjunction with other safety measures to supply multiple protections for the employee. Evacuation routes must be posted in conspicuous places. The outside meeting location will be posted on the Evacuation Route.

Each escape route must lead to a safe exit and must remain free of permanent storage. All exits must lead directly to a street, yard or other open space that is large enough to hold all of the people exiting from the building. Each building will have at least two exits that are far enough apart so the possibility of all exits being blocked by a singular fire or

other emergency is reduced. These exits will be in the safest possible locations in the building and will be designed with side-hinged, swinging doors that can handle the maximum number of persons that may be in the building at one time. If these exits are separated from the main building, the separation will have at least a one hour fire rating.

Exits must provide free, unobstructed means for escape and at no time should an exit be blocked or locked, except in a few law enforcement-related situations that require detention. There are **no other exceptions** for preventing easy access and passage through any exit. Exits must not be through a room, such as a bathroom or locker room, that might be locked at some time and the exit must always be accessible and well-lighted. The exit must not be covered by hangings, draperies or mirrors that may disguise or partially hide an exit. In no case will an exit be less than twenty-eight (28) inches wide or seven (7) feet six (6) inches in height and can have no objects hanging lower than six (6) feet eight (8) inches from the ground.

The components of the exit will be of good, workmanlike quality and must not have any parts that could, even in the case of breakage, prevent the exit from opening properly.

All exits will be marked as an exit using an easily visible sign and the path leading to the exit will also be marked if the exit is not obvious from that location. All signs marking an exit must be readable and must not, in any circumstance, be blocked or impaired from easy viewing. Each sign will be a distinctive color (preferably red) that contrasts with the surroundings. The sign must meet OSHA standards. Any doorway that is not an exit, but may be mistaken as an exit, must be signed to clearly state that it is not an exit or a pathway to an exit.

Employee Roles

Each employee will be taught what his / her role is during an emergency even if that role is just to escape safely. The employee is also responsible for knowing where the outside meeting location is in case of evacuation. The Department Director is responsible for informing each employee to what role he must serve and the Director must be available and informed to answer any employee questions concerning the Emergency Plan.

In cases of emergency that requires evacuation, safety committee representatives will be trained to assist the other employees. These employees will be called "wardens". There will be at least one warden for each location and at least one warden for every twenty (20) people. These wardens will be responsible for helping the other employees escape, accounting for each employee after they escape, alerting the public safety personnel to the emergency, and informing them if any employee is missing. The emergency will be reported by contacting the Davie County 911 central dispatching service and alerting them to the situation. EMS staff will provide medical duties as needed.

In emergencies involving fire, employees trained in fire extinguisher use will be authorized to use fire extinguishers. All departmental safety representatives will have fire extinguisher training. Employees may be trained to fight a fire with portable fire extinguishers and only during the beginning (or incipient) stage of a fire.

The portable fire extinguishers must be kept in a fully charged and operable condition and in a designated place except during use. The Safety Representative will ensure that each extinguisher is visually inspected monthly to ensure the condition is acceptable. These inspections must be recorded on durable tags attached to the extinguishers. In addition, the County will ensure that the extinguishers have an annual maintenance inspection and will be hydrostatically tested in accordance with OSHA standards. Public Facilities will arrange for maintenance inspections.

Training Requirements

Each Department Director must ensure that the appropriate personnel receive the training outlined in this plan. The employee wardens (safety committee reps) must be trained how to aid the other employees during evacuation

situations *and in the use of a fire extinguisher*. Each employee must be trained in the evacuation routes that exist in each building and the outside meeting location.

The Director will arrange for Safety Orientation to be done whenever an employee is first hired. Employees will receive updated training when the plan is revised and whenever an employee's responsibility or job changes.

Alarm Systems

An employee alarm system that will alert employees to a fire emergency will be in any buildings with more than 10 employees. If there are fewer than 10 employees, then alerting other employees by word of mouth is acceptable. The alarm will provide both a visual (sight) and audible (sound) signals that can be seen and heard above all other activities in the area. The alarms that are utilized by the County Emergency Management Plan for weather and hazardous substance emergencies will be sufficient and will be followed by the appropriate action by all employees.

Critical Operations Shut Down

Each department will develop procedures for critical operations shut down in the event of an evacuation. The Director will designate staff to shut down equipment, relocate critical documents, and provide for the safety of staff, visitors, and inmates.

Emergency Contacts

The Department Directors will serve as contacts during emergency situations and when any information concerning emergency planning is needed. Other questions can be forwarded to the County Emergency Management Office. The County 911 system will be the first alerted in any situation.

Additional Emergency Plan procedures that are department specific may be added here.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

Annual fire drills will be conducted for each county building and an evaluation of the drills will be documented and submitted to the Safety Representative. The Safety Committee will review results from annual fire drills for each department to identify areas for improvement.

FIRE PREVENTION PLAN

PURPOSE

The purpose of this plan is to maintain a safe working environment for the employees of Davie County by preventing injury or illness usually caused by emergency situations. The purpose of this document is to meet the requirements of the Occupational Health and Safety Act (OSHA) standards.

INFORMATION SOURCES

Information for this policy was obtained from OSHA Standard 1910.36, 37, 38(a), 120, 157, 165).

RESPONSIBILITIES

Department Directors will be accountable for the proper instruction of their employees. The Director must ensure that the employees understand their particular roles in any given emergency situation and that they receive the appropriate training that is required by the regulations at the time of hire and with any changes in procedure.

The employees must become familiar with the requirements of this standard and what their particular assignment is in any given emergency situation. Each employee must be able to recognize potential hazards and alert the appropriate supervisor or safety committee member.

FIRE PREVENTION PLAN

This plan will address

(1) listing of major workplace fire hazards
(2) the names and job titles of employees who are responsible for maintaining equipment and systems installed to prevent or control ignitions or fires
(3) the names and job titles of employees responsible for control of fuel source hazards
(4) housekeeping procedures
(5) training requirements
(6) maintenance of heat producing equipment

Each Department Director will develop and maintain a list of:

- ✓ **major workplace fire hazards**
- ✓ **employees and job titles for those responsible for maintaining fire prevention equipment (eg sprinkler systems, fire alarm systems, etc.)**
- ✓ **employees and job titles of those responsible for control of fuel source hazards.**

Housekeeping

Directors are responsible for controlling the accumulation of flammable and combustible waste materials.

Training

Each employee will be informed of the fire hazards of the materials and processes to which they are exposed and of this fire prevention plan. This training will be done at initial assignment and at the time of changes in this plan. Employees may review this plan at any time.

Maintenance

Directors, in conjunction with the Fire Marshal, will maintain this plan, fire prevention procedures, and equipment or systems installed on heat producing equipment to prevent accidental ignition or combustible materials.

Fire Prevention Procedures

1. Maintain good housekeeping. Storage areas must be kept clean and orderly. Combustibles may not be stored around electrical panels or heat producing appliances.

2. Fire extinguishing equipment will be prominently displayed, labeled for usage, and kept clear for easy access at all times. Equipment must be appropriately inspected monthly and maintained annually.

3. Employees must know the location and function of fire extinguishers. All use of fire extinguishers must be immediately reported to the immediate supervision to ensure replacement or recharging.

4. Water type extinguishers cannot be used on electrical fires because of the danger of electrocution and equipment damage. Water type extinguishers may be used for class A fires only (wood, paper, rags, etc.)

5. Oily rages and other flammable waste must be kept in covered metal containers and removed from the building as soon as possible.

6. Cleaning solutions that have flammable properties must be kept in approved safety containers and must be clearly labeled.

7. Gasoline may not be used for cleaning purposes. Gasoline used in small quantities in shops for fueling engines must be handled and dispensed of in approved safety containers and contents must be labeled. Under no circumstances can gasoline be used to start a fire.

8. When transferring flammable liquids, the filler nozzle must touch the equipment / container to guard against the build up of static electrical charge. Never over fill containers to allow room for expansion of the liquid.

9. Compressed gas cylinders must be stored upright and secured in place with a chain, belt, or metal holder. Caps must be placed on cylinders when not in use. Oxygen and fuel containers must be stored separately.

10. The use of matches for lighting purposes is strictly forbidden. Do not enter dark places, basements, cellars, without proper light.

11. The use of open flames especially with candles is not allowed in county buildings.

12. Exits will remain free and clear of obstructions and will be unlocked or allow exiting with one hand when occupied.

13. **The use of portable heaters in office areas is not allowed in any County owned building.**

14. Areas outside the buildings and yard storage areas must be kept free of dry grass and weeds and outside waste storage must be kept at least 20’ from buildings.

Emergency Contacts

The Department Directors will serve as contacts during emergency situations and when any information concerning emergency planning is needed. Other questions can be forwarded to the County Emergency Management Office.

Emergency Management Director	**336 753 6163 office**
(For local agency notification)	***336 909 1164 cell***

The County 911 system will be the first alerted in any situation.

Sheriff's Office/ Police Department / Fire Department / EMS **call 911**

Additional Fire Prevention Plan procedures that are department specific may be added here.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

Annual fire drills will be conducted for each county building and an evaluation of the drills will be documented and submitted to the Safety Representative. The Safety Committee will review results from annual fire drills for each department to identify areas for improvement.

EMERGENCY CONTACT NUMBERS

Emergency Contacts

The Department Directors will serve as contacts during emergency situations and when any information concerning emergency planning is needed. Other questions can be forwarded to the County Emergency Management Office.

Emergency Management Director	**336 753 6163 office**
(For local agency notification)	***336 909 1164 cell***

The County 911 system will be the first alerted in any situation.

Sheriff's Office/ Police Department / Fire Department / EMS **call 911**

Additional Emergency Contact numbers that are department specific may be added here.

DISASTER EVENT OR DRILL EVALUATION REPORT

Date: _____ Type of Emergency: _____

Time Initiated: _____ Time Resolved: _____ Drill ( ) Actual Event ( )

Details of Event:

_____

_____

_____

_____

Were the appropriate people notified? Were all staff members aware of the event?

_____

Staff Involved or Responding:

_____

_____

Were there any Equipment or Alarm System Function / Issues?

_____

_____

_____

Was evacuation required or practiced? Yes ( ) No ( )

Were all staff and visitors / patients /clients accounted for at designated locations? Yes ( ) No ( )

Recommendations for Improvement:

_____

_____

_____

_____

What additional staff education is needed?

_____

_____

Completed by: _____ Date: _____

FIRE EVENT OR DRILL EVALUATION REPORT

Date of Event / Drill _____ ☐ Actual Fire ☐ Fire Drill

Location of Fire / Zone:_____

1. Origin of Alarm: ( ) Pull Station ( ) Verbal Notification ( ) Overhead Alarm Other: _____

2. Did the person who found the fire respond appropriately? [ ] Yes [ ] No

3. Did the staff members implement RACE? [ ] Yes [ ] No
(Rescue, Alarm, Close doors, and Evacuate)

4. Was the Fire Alarm transmitted to the Fire Department? [ ] Yes [ ] No

5. Were all doors closed? [ ] Yes [ ] No

6. Were all hallways cleared? [ ] Yes [ ] No

7. Did staff evacuate the facility and meet at the designated site? [ ] Yes [ ] No

8. Were all staff and visitors accounted for after the evacuation? [ ] Yes [ ] No

Recommendations for improvement:

Participants:

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

Completed by: _____ Date: _____

EMERGENCY PREPAREDNESS & FIRE PREVENTION SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Has the Emergency/Fire Prevention Plan been reviewed with each employee and has each employee been made aware of his/her role in an emergency while at work?			
2. Is there an alarm system in place that alerts employees to an emergency, by word of mouth or other acceptable means?			
3. Are all exits marked with readily visible OSHA approved exit signs? (Having letters at least 6" high and ¾" wide.)			
4. Where exits signs are not visible, are paths to exits clearly marked with signs or diagrams?			
5. Are all exits and paths kept free of obstructions at all times?			
6. Are some employees, other than the Safety Representative, designated as "wardens" and instructed to aid with employee evacuation? (All Safety Representatives are considered "wardens")			
7. Are some employees properly trained in portable fire extinguisher use?			
8. Are the portable fire extinguishers inspected monthly, and is documentation evident by tag or checklist?			
9. Are extinguishers maintained and hydrostatically tested annually?			
10. Do employees know where to go in case of an evacuation and who to contact in the event of an emergency?			
EMS and Public Utilities only, answer Questions 13 – 17			
11. Do employees know what to do in the event of an emergency release of hazardous substances?			
12. Are employees informed of their roles in hazardous substance release situations? Do they know the Incident Command System?			
13. Do employees know the safest place to go in the event of a hazardous substance release?			
14. Is the proper Personal Protective Equipment available?			
15. Do employees know where to locate emergency numbers to call in the case of hazardous substance release?			
Recommendations for Improvement:			

HAZARD COMMUNICATION

PURPOSE

This program has been established to comply with the Davie County safety ordinance and to meet the requirements of the Hazard Communication Standard of the State and Federal Right to Know Law. The purpose of this program is to ensure that employees are made aware of the hazardous substances found in their work environment. Employers are required to develop a written hazard communication plan to identify, label, and list hazardous chemicals and to develop a plan to inform employees of these hazards and how to protect themselves. The purpose of this program is to reduce injuries and illnesses that result from the improper use, storage, and handling of chemicals in the work place.

INFORMATION SOURCES

Davie County has adopted this Hazard Communication Plan which is available to employees, their designated representative, and regulatory officials. The Federal OSHA Standard 29CFR 1910.1200 is available for review online. A notebook of all Safety Data Sheets for hazardous substances used by the employees can be found in each department. Each department will also maintain a file or notebook of Safety Data Sheets (SDS) that is readily accessible to employees *along with an inventory of hazardous chemicals.*

OSHA Fact Sheet issued 2/2013 includes information of December 1st, 2013 Training Requirements for the Revised Hazard Communication Standard and a copy follows this section.

RESPONSIBILITIES

The Davie County Safety Committee has overall responsibilities for coordinating the Hazard Communication Program for all work sites.

Department Directors must ensure that the provisions of this plan are carried out within their respective department. Directors are responsible for monitoring compliance as described by this policy. They shall be responsible for implementing disciplinary action for any violation of these procedures. Directors are also responsible for maintaining a current inventory of hazardous chemicals in their department and a file or notebook of Material Safety Data Sheets that is readily accessible to their employees in addition to informing their employees of hazardous chemicals in the work place and how to protect themselves.

Employees are responsible for becoming knowledgeable of this plan and the safe handling of all hazardous chemicals in their work environment, for using appropriate personal protective equipment, for adhering to the procedures, and for reporting any unsafe conditions to their Department Director or their Safety Committee representative.

Independent contractors and their employees will familiarize themselves with this plan and potential hazards of the substances to which they may be exposed and the appropriate measures required to minimize their exposure. Contractors will be provided with all necessary information concerning the potential hazards of any substances to which they may become exposed. Contractors are required to furnish the county with a copy of their hazard communication program and SDS's for any chemicals to which a county employee may be exposed.

PROCEDURES

Procedures included in the program include (1) hazard determination, (2) provisions for container labeling, (3) availability of safety data sheets, (4) employee training program, and (5) listing of the hazardous chemicals in each work area.

Hazard Determination

A hazardous chemical is any chemical that is a physical hazard or health hazard. This includes combustible liquids, compressed gases, flammables, oxidizers, carcinogens, irritants, corrosives, and toxic agents to lungs, skin, eyes, or mucous membranes. Most consumer products are exempt from the standard depending on the length of time, frequency, and method of use. The Safety Representative will determine which chemicals are hazardous using at least the following resources: Toxic and Hazardous Substances list (29CFR 1910, Subpart Z), the National Toxicology Program (NTP) Annual Report on Carcinogens, and the Safety Data Sheets provided by the manufacturer.

Labeling

No hazardous chemical will be accepted for use by any facility of the county or shipped to any outside location unless labeled with at least the following information:

1. Identity of the hazardous chemical(s),
2. Appropriate hazard warnings,
3. Name and address of the chemical manufacturer, importer, or responsible party.

All containers of hazardous chemicals will have a legible label with the identity of the chemical and appropriate hazard warnings. No label will be removed or defaced. If a label has come off a container, it will be relabeled.

Safety Data Sheets

Each department will develop and maintain a Safety Data Sheet (SDS) notebook or file that is easily accessible to all employees at any time. The notebook will contain an SDS for each hazardous chemical that is used in the department.

Each SDS will be in English and will contain the following information:

1. the identity to include the chemical and common name of the ingredient(s);
2. physical and chemical characteristics of the hazardous chemical (vapor pressure, flash point);
3. the physical hazards (potential for fire, explosion, etc);
4. the health hazards such as signs and symptoms of exposure;
5. primary routes of entry;
6. the OSHA permissible exposure limit;
7. whether the chemical is listed in the National Toxicology Program (NTP) Annual Report on Carcinogens;
8. precautions for safe handling to include hygienic practices, protective measures, and procedure for clean up of spills or leaks;
9. control measures such as engineering controls, work practices, or personal protective equipment required;
10. emergency and first aid procedures;
11. the date of SDS preparation or revision;
12. the name, address, and phone of the manufacturer.

The Department Director or Safety Representative will review and update the list of all hazardous substances in their department on the Hazardous Material Inventory form annually. The updated inventory will be submitted to the Safety Committee annually. A master list for all departments is maintained in the County Manager's Office

Employee Information and Training

Employees will be provided information and training in their work area at the time of their initial employment, work

place change, whenever a new hazard is introduced into their work area, and before non-routine tasks are to be performed that could involve exposure to hazardous chemicals. Pipes that are not labeled will be pointed out to the employees as to their contents.

Department Directors will ensure that each employee is informed of the following:

1. The requirements of the Hazard Communication Standard,
2. Any operations in their work area where hazardous chemicals are present,
3. The location and availability of the written Hazard Communication plan, including the HazMat Inventory and the SDS notebook.

Each employee will receive training to include:

1. Methods and observations that may be used to detect the presence or release of a hazardous chemical,
2. The physical and health hazards of chemicals in the work area,
3. Measures employees can take to protect themselves from these hazards to include appropriate work practices, emergency procedures, and personal protective equipment to be used,
4. Details and explanation of the written program, labeling system, SDSs, and how employees can obtain and use the appropriate hazard information.

Training records including the instructor, the content, and a roster of participants will be maintained in each department and a copy will be placed in the Safety Manual.

HAZARDOUS CHEMICAL INVENTORY

The Davie County Master HAZMAT Inventory will be maintained by the Safety Committee in the County Manager's Office. The departmental Hazardous Material Inventory will be included in this section in each safety manual *as it is unique to each department.*

HAZARDOUS CHEMICAL / WASTE SPILLS

Hazardous spills clean up and emergency response to an uncontrolled release of hazardous substances such as a chemical spill on the highway or release of chlorine from the Water Plant will be handled by the Davie County HazMat team. Davie County Sheriff Officers will maintain a safe perimeter according to the Davie County Emergency Management Plan.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review percentage completion of annual hazardous material inventories by each department and recommend actions to improve if needed.

OSHA® QUICK CARD™

Hazard Communication Standard Pictogram

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

HCS Pictograms and Hazards

Health Hazard

- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Flame

- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

Exclamation Mark

- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)

Gas Cylinder

- Gases Under Pressure

Corrosion

- Skin Corrosion/ Burns
- Eye Damage
- Corrosive to Metals

Exploding Bomb

- Explosives
- Self-Reactives
- Organic Peroxides

Flame Over Circle

- Oxidizers

Environment (Non-Mandatory)

- Aquatic Toxicity

Skull and Crossbones

- Acute Toxicity (fatal or toxic)

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA 3491-02 2012

OSHA® DATOS RÁPIDOS

Pictograma para la norma sobre la comunicación de peligros

A partir del 1.° de junio de 2015, la norma de comunicación de peligros (HCS, por sus siglas en inglés) exigirá pictogramas en las etiquetas para advertir a los usuarios de los peligros químicos a los que puedan estar expuestos. Cada pictograma representa un peligro definido y consiste en un símbolo sobre un fondo blanco enmarcado con un borde rojo. La clasificación del peligro químico determina el pictograma que muestra la etiqueta.

Pictogramas y peligros según la HCS

Peligro para la salud  • Carcinógeno • Mutagenicidad • Toxicidad para la reproducción • Sensibilización respiratoria • Toxicidad especifica de órganos diana • Peligro por aspiración	**Llama**  • Inflamables • Pirofóricos • Calentamiento espontáneo • Desprenden gases inflamables • Reaccionan espontáneamente (autorreactivas) • Peróxidos orgánicos	**Signo de exclamación**  • Irritante (piel y ojos) • Sensibilizador cutáneo • Toxicidad aguda (dañino) • Efecto narcótico • Irritante de vías respiratorias • Peligros para la capa de ozono (no obligatorio)
Botella de gas  • Gases a presión	**Corrosión**  • Corrosión o quemaduras cutáneas • Lesion ocular • Corrosivo para los metales	**Bomba explotando**  • Explosivos • Reaccionan espontáneamente (autorreactivas) • Peróxidos orgánicos
Llama sobre círculo  • Comburentes	**Medio ambiente** (No obligatorio)  • Toxicidad acuática	**Calavera y tibias cruzadas**  • Toxicidad aguda (mortal o tóxica)

Para más información:

OSHA® **Administración de Seguridad y Salud Ocupacional**

Departamento de Trabajo de los EE. UU.

www.osha.gov (800) 321-OSHA (6742)

OSHA® FactSheet

December 1st, 2013 Training Requirements for the Revised Hazard Communication Standard

OSHA revised its Hazard Communication Standard (HCS) to align with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and published it in the Federal Register in March 2012 (77 FR 17574). Two significant changes contained in the revised standard require the use of new labeling elements and a standardized format for Safety Data Sheets (SDSs), formerly known as, Material Safety Data Sheets (MSDSs). The new label elements and SDS requirements will improve worker understanding of the hazards associated with the chemicals in their workplace. To help companies comply with the revised standard, OSHA is phasing in the specific requirements over several years (December 1, 2013 to June 1, 2016).

The first compliance date of the revised HCS is December 1, 2013. By that time employers must have trained their workers on the new label elements and the SDS format. This training is needed early in the transition process since workers are already beginning to see the new labels and SDSs on the chemicals in their workplace. To ensure employees have the information they need to better protect themselves from chemical hazards in the workplace during the transition period, it is critical that employees understand the new label and SDS formats.

The list below contains the minimum required topics for the training that must be completed by December 1, 2013.

➢ Training on label elements must include information on:

- Type of information the employee would expect to see on the new labels, including the
  - ✓ **Product identifier:** how the hazardous chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the appropriate product identifier. The same product identifier must be both on the label and in Section 1 of the SDS (Identification).
  - ✓ **Signal word:** used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. There are only two signal words, "Danger" and "Warning." Within a specific hazard class, "Danger" is used for the more severe hazards and "Warning" is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a "Danger" signal word and another warrants the signal word "Warning," then only "Danger" should appear on the label.
  - ✓ **Pictogram:** OSHA's required pictograms must be in the shape of a square set at a point and include a black hazard symbol on a white background with a red frame sufficiently wide enough to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is not permitted on the label. OSHA has designated eight pictograms under this standard for application to a hazard category.
  - ✓ **Hazard statement(s):** describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: "Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin." All of the applicable hazard statements must appear on the label. Hazard statements may be combined where appropriate to reduce redundancies and improve readability. The hazard statements are specific to the hazard

classification categories, and chemical users should always see the same statement for the same hazards, no matter what the chemical is or who produces it.

✓ **Precautionary statement(s):** means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling.

✓ **Name, address and phone number of the chemical manufacturer, distributor, or importer**

- How an employee might use the labels in the workplace. For example,
  - ✓ Explain how information on the label can be used to ensure proper storage of hazardous chemicals.
  - ✓ Explain how the information on the label might be used to quickly locate information on first aid when needed by employees or emergency personnel.
- General understanding of how the elements work together on a label. For example,
  - ✓ Explain that where a chemical has multiple hazards, different pictograms are used to identify the various hazards. The employee should expect to see the appropriate pictogram for the corresponding hazard class.
  - ✓ Explain that when there are similar precautionary statements, the one providing the most protective information will be included on the label.

➢ Training on the format of the SDS must include information on:

- Standardized 16-section format, including the type of information found in the various sections
  - ✓ For example, the employee should be instructed that with the new format, Section 8 (Exposure Controls/Personal Protection) will always contain information about exposure limits, engineering controls and ways to protect yourself, including personal protective equipment.
- How the information on the label is related to the SDS
  - ✓ For example, explain that the precautionary statements would be the same on the label and on the SDS.

As referenced in Dr. Michaels' OSHA Training Standards Policy Statement (April 28, 2010) – with all training, OSHA requires employers to present information in a manner and language that their employees can understand. If employers customarily need to communicate work instructions or other workplace information to employees in a language other than English, they will also need to provide safety and health training to employees in the same manner. Similarly, if the employee's vocabulary is limited, the training must account for that limitation. By the same token, if employees are not literate, telling them to read training materials will not satisfy the employer's training obligation.

OSHA's Hazard Communication website (http://www.osha.gov/dsg/hazcom/index.html) has the following QuickCards and OSHA Briefs to assist employers with the required training.

- Label QuickCard (English/Spanish)
- Pictogram QuickCard (English/Spanish)
- Safety Data Sheet QuickCard (English) (Spanish)
- Safety Data Sheet OSHA Brief
- Label/Pictogram OSHA Brief (to come)

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

OSHA® Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

DSG FS-3642 02/2013

HAZMAT INVENTORY

Department: _____ Location of hazardous material: _____

#	Material Name	Manufacturer	SDS on file	SDS requested

Preparer(s) of Inventory: _____
Date Reviewed: _____
Date Revised: _____

HAZARD CHEMICAL TRAINING SHEET

Department _____ Instructor _____

Date _____ Location _____

Chemical Substance _____

Safety Data Sheet (SDS) attached (Required) _____

What is the chemical used for? _____

_____

_____

Employee Training Provided:

_____ SDS reviewed

_____ Labels reviewed

_____ Personal protective equipment

_____ Detection of leak or spill

_____ Work area monitoring

_____ Work procedures

_____ Emergency procedures

Employees Trained:

Employee Signature	Employee Signature
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Instructor's Signature _____

Forward copy to: Department Director
Safety Representative

Keep a completed copy in your department's Safety Manual.

HAZARDOUS COMMUNICATION PLAN
SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Is the Hazard Communication Plan made readily available to employees?			
2. Has an inventory of hazardous chemicals/substances been completed in the last 12 months?			
3. Are SDS sheets available for all chemicals that require a sheet?			
4. Are all chemicals or substances labeled with name, hazards, and manufacturer?			
5. Has employee training for handling of chemicals been documented?			
6. Do employees wear Personal Protective Equipment (PPE) when handling chemicals?			
7. Are proper absorbent materials on hand for spills?			
Recommendations for Improvement:			

FACILITIES AND ELECTRICAL SAFETY

PURPOSE

This policy has been established to comply with the Davie County Safety Policy and to meet the OSHA requirements. The purpose of this plan is to ensure that all facilities of the Davie County are safe and that employees use work workplace procedures that reduce the risk of injuries or illnesses.

INFORMATION SOURCES

The North Carolina Occupational Safety and Health Standard for General Industry from the North Carolina Department of Labor is the primary source for these regulations. Other sources include the following NC- OSHA General Industry Digest (http://www.osha.gov/Publications/osha_2201.pdf) for the following: Machine Safeguarding, Electrical Safety, Personal Protective Equipment, Safe Handling of Materials, Lockout /Tagout, Eyewash and Safety Shower Facilities, Corrosive Substances, and Fall Prevention. A hard copy of this Digest is located in the Safety Manual Master located in the County Manager's Office. The OSHA Safety and Health Management Systems Checklist is an additional source of information.

RESPONSIBILITIES

The Safety Committee for Davie County has the responsibility for coordinating the facilities safety program.

The Safety Committee will plan comprehensive safety inspections of all facilities at least annually. The results will be documented and forwarded to Department Directors.

Each Department Director is responsible for ensuring that all employees are knowledgeable and compliant with requirements for facilities safety and for monitoring compliance as described by this plan.

Employees are responsible for using safe work practices and for reporting any unsafe conditions to their Director, Supervisor, or departmental Safety Committee Representative.

PROCEDURE: ELECTRICAL SAFETY

Each facility will have an electrical safety program that includes training and education, regular inspections, hazardous condition reporting, safe work practices, and housekeeping.

Training and Education

Training will be provided to persons who work on, near, or with electrical hazards that are not reduced to a safe level by the electrical installation. All employees will be trained in and be familiar with the safety related work practices discussed below that pertain to their respective job assignments.

Regular Inspections

Electrical Safety inspections will be conducted in each department annually. The inspection results will be forwarded to the Safety Committee and a copy will be kept in the Safety Manual.

Hazardous Condition Reporting

Unsafe equipment, conditions, or procedures will be reported to the Director or the Safety Committee Representative. Defective electrical equipment that could cause electrical shock will not be used under any conditions. **The equipment will be taken out of service and tagged for repair or disposed of.**

Safe Work Practices for Electrical Safety

Each employee must be familiar with and comply with OSHA regulations as they apply to workplace safety. The following work practices will be followed:

- Power equipment will be plugged into wall receptacles with the power switches in the off position.
- Electrical equipment will be unplugged by grasping the plug and pulling, never by jerking the cord.
- Frayed, cracked, or exposed wiring on equipment cords will be corrected before using.
- "Cheater plugs", extension cords with junction box receptacle ends, or other jerry-rigged equipment will not be used.
- Temporary or permanent storage of materials will not be allowed within 3 feet of any electrical panel or electrical equipment.
- Any electrical equipment causing shocks or which have high leakage potential will be tagged with a DANGER-DO NOT USE label or equivalent.
- Any electrical splicing will be made using suitable splicing devices or brazing, welding, or soldering with a fusible metal alloy, and then covered with an insulation equivalent to the conductor.
- Branch circuits will be clearly marked to identify their purpose.
- Exposed live electrical parts operating at 50 volts or more will be guarded against accidental contact by approved cabinets or enclosures, by location, or by limiting access to qualified persons.
- Rooms or enclosures containing exposed live parts or conductors operating at over 600 volts, will be kept locked or under the observation of a qualified person at all times.
- Over current devices will be readily accessible, not exposed to physical damage, and not located in the vicinity of easily ignitable material.
- The path to ground from circuits, equipment, and enclosures will be permanent and continuous.
- Plugs for all refrigerators and air conditioners, etc, will be grounded.
- Hand held motor operated tools will be grounded or clearly labeled as double insulated.
- All pull boxes, junction boxes, and fittings will be provided with covers approved for the purpose.
- Flexible electrical cord and extension cords will not be used as a substitute for the fixed wiring of a structure.

- Any electrical wiring and equipment that is located in hazardous locations will be either intrinsically safe, approved for the hazardous location, or safe for the hazardous location; ground fault circuit interrupters (GFCI) will be used when necessary.

- Sufficient working space will be provided to permit safe operation and maintenance of electrical equipment.

- Electrical extension cords will be of the three wire type with a ground plug. Extension cords may be used temporarily for infrequently used equipment. They cannot be used permanently and they will not be stapled or nailed and will not be run through windows, doorways or across walkways.

- Unused openings in electrical boxes will be fitted with blanks.

- Portable electrical heaters of any type are not allowed in county property.

Housekeeping

Areas around electrical equipment, such as circuit breaker panels, disconnects, and fixed power tools, will be kept free from stored items, debris, and any liquid or material that would create slippery floors or obstruct access to the equipment for maintenance or emergencies. Closets and work areas must be maintained in an orderly manner.

PROCEDURE: LOCKOUT/TAGOUT (Control of Hazardous Energy)

Employees who work on energized equipment involving either direct contact by means of tools or materials must have the following training to become a "qualified person":

- Skills and techniques to distinguish exposed live parts from other parts of electric equipment,

- Skills and techniques necessary to determine the nominal voltage of exposed live parts,

- The clearance distances required and the corresponding distances to which a qualified person will be exposed, and

- Skills and techniques in lockout / tagout to de-energize circuits or equipment.

A contracted, qualified electrician will provide disconnect services. No employee will de-energize equipment.

This energy control procedure will be utilized for control of hazardous energy. Specific procedures include securing machines; placement, transfer, and removal of lockout devices; and testing of locked machinery. Circuits and equipment to be worked on will be disconnected from all energy sources. Control circuit devices are not the sole means for de-energizing. A lock and tag will be placed on each disconnecting means used to de-energize circuits and equipment. The lock will be attached to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

Each tag will be durable, standardized, and identifiable and will contain a statement prohibiting unauthorized operation of disconnecting means or removal of the tag. If a lock cannot be applied a tag may be used without a lock if it is supplemented with one other safety measure such as removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

A lock can be placed without a tag only under the following conditions:

- Only one circuit or piece of machinery is de-energized,
- The lockout period does not extend beyond the work shift,
- Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure. A qualified person will verify the de-energized condition by attempting to operate the equipment or by using testing equipment to test the circuit elements or electrical parts of the equipment.

Re-energizing of the equipment will follow this procedure:

1) A qualified person will conduct tests and a visual inspection to verify that tool, electrical jumpers, shorts, and grounds have been removed,
2) Employees exposed to hazards of reenergizing will be warned to stay clear,
3) Each lock and tag will be removed by the employee who applied it or under his/her direct supervision,
4) A visual determination will be made that all employees are clear of the circuit or equipment,
5) Circuit or equipment will be reenergized.

PROCEDURE: ENVIRONMENTAL CONTROLS

Procedures for ventilation, noise control, general environmental controls, and materials handling and storage are included in this section.

VENTILATION

- The ventilation system will adequately remove vapors and gases from hazardous working environments.

GENERAL ENVIRONMENTAL CONTROLS

- Trash cans must be emptied regularly and will have tight fitting covers when trash contains hazardous or odorous substances.
- Non-potable water sources will be marked as such with color coding. Toilet facilities will be accessible and labeled as such.
- Eating is not allowed in toilet areas and in areas exposed to toxic or hazardous materials.

MATERIALS HANDLING AND STORAGE

- Aisles and passageways are kept clear.
- Materials will be securely stacked when stored and aisles will be maintained when materials are stored on floors.
- Good housekeeping will be maintained in storage areas.
- Only trained and authorized drivers will be permitted to operate powered industrial trucks. The Staff will ride on powered industrial trucks only when provided a safe place to ride.

PROCEDURE: FIRST AID/MEDICAL

First aid and medical services will be available to all county employees. The Wake Forest Baptist Healthcare Center—Davie and the Davie Medical Center-Bermuda Run are recommended medical facilities located within the county and approximately a 15 minute drive or less.

First aid supplies will be readily available at each facility and will be replenished after use. The Lab in the Health Department, Water Plants and Sewer Plants will be equipped with quick-drenching eye wash stations that will provide a steady flow of water for 15 minutes since hazardous / corrosive materials are used in these locations.

Potable drinking water and adequate toilet facilities will be available at construction sites.

PROCEDURE: HAND AND PORTABLE POWER TOOLS

Davie County will ensure that all hand power tools and portable equipment is in a safe condition and properly equipped with safety devices. These procedures include the following: 1) Powered Hand Tools, and 2) Mowers.

Powered Hand Tools

All hand-held circular saws with blade diameters greater than 2 inches, all chain saws, and all powered hand tools will have a constant pressure power switch that will shut off when the pressure is released. All hand- held disc sanders with discs greater than 2 inches in diameter, belt sanders, reciprocating saws, and saber, scroll, and jig saws with blade shanks one quarter of an inch (1/4) or greater in width, along with other similar tools, will have a constant pressure power switch or a switch that may be turned off in a single motion with the same finger that turned the tool on. All other tools may have either a pressure switch or a standard on/off switch.

Belt sanders will be equipped with guards that will prevent the operator's hands from touching the nip points where the belt comes in contact with the pulleys. Circular saws will have guards that will cover the saw the depth of the teeth and shall return to completely cover the saw as it is withdrawn from the work. All portable grinders will be equipped with guards that will cover the spindle end, nut and flange projections. These guards will also allow no more than 180° of the abrasive surface to be exposed and will be located between the operator and the wheel during use. Any piece of machinery that is not properly guarded will not be used under any conditions.

Grinding wheels will fit freely on the spindle and will maintain a controlled clearance between the wheel hole and the machine spindle. Immediately before mounting, all wheels shall be closely inspected and sounded by the user (ring test) to make sure they have not been damaged in transit, storage, or otherwise. A process for conducting this inspection is outlined in Subpart O 0SHA 1910.215(d) (1). 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. Wheels 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. This is known as the "Ring Test".

All electrically powered equipment will meet the grounding requirements of 3 prong plug or have double insulated written on the tool. Pneumatically powered tools will be equipped with a tool retainer and will use air hoses that are designed and rated for the pressure they must take.

Any jacks that are used must be rated and that rating must be legibly marked on the jack. Jacks must be rated for a load greater than the load it is expected to support. Jacks must be thoroughly inspected at times depending on their work load. A jack with a heavy workload must be inspected at least every 6 months and repair jacks will be inspected

before and after each use. These inspections will be documented and filed with the departments' Safety Coordinator. All jacks will be kept in good operating condition and will be periodically lubricated. After a load has been jacked, it must be blocked and secured immediately.

Mowers

All power mowers will meet the requirements of ANSI B71.1-X1968. All power driven belts, chains, and gears must be guarded to protect against accidental contact. A shutoff device will be provided to stop operation in the event of an accident. The words, "Caution - Be sure the operating control(s) is in neutral before starting the engine" or similar wording will appear near the starting controls.

The blade on all power mowers will be guarded and openings will be placed so that the discharge of debris will not be in the direction of the operator. This opening will meet the requirements outlined by OSHA and will have a guard of its own that projects a minimum of three (3) inches away from the blade of a push mower and six (6) inches on a riding mower or it will have a bar permanently affixed that will prevent entry into the opening. The opening will be clearly marked by a warning label.

PROCEDURE: MACHINE GUARDING

Many hazards are created by moving machine parts. Safeguards are essential for protecting county employees from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips, and sparks. Examples of guarding methods include barrier guards, two-handed tripping devices, and electronic safety devices.

All machines whose point of operation (area on machine where work is actually performed upon the material being processed) exposes an employee to injury will be properly guarded.

Belt sanders will be equipped with guards that will prevent the operator's hands from touching the nip points where the belt comes in contact with the pulleys. Circular saws will have guards that will cover the saw the depth of the teeth and shall return to completely cover the saw as it is withdrawn from the work. All portable grinders will be equipped with guards that will cover the spindle end, nut and flange projections. These guards will also allow no more than 180° of the abrasive surface to be exposed and will be located between the operator and the wheel during use. Any piece of machinery that is not properly guarded will not be used under any conditions.

All flywheels, pulleys, horizontal and vertical belt drives, sprocket wheels, and chains within 7 feet of floor level will be properly guarded. All gears will be properly guarded.

PROCEDURE: HAZARDOUS MATERIALS

Hazardous materials are those chemicals or substances that present a physical and/or health hazard. Examples of materials that present a physical hazard are compressed gases, flammable and combustible liquids, and oxidizers. Materials presenting health hazards include toxic materials, radioactive materials, corrosives, irritants, and carcinogens. The following procedures focus on the prevention and control of dangerous conditions created by the presence of hazardous materials.

The Hazardous Communication Plan also addresses hazardous materials.

1) Compressed gas cylinders will be visually inspected for defects and leaks weekly and will be secured in an upright position.

2) Fire extinguishers will be located in areas where flammable liquids are stored or used. Flammable and

combustible liquids are stored in tanks or closed containers.

3) Paint with flammable properties will be stored in fire resistant cabinets with conspicuous NO SMOKING signs posted on cabinet.

4) Bulk storage of flammable or combustible liquids in portable containers will be located in a separate building (i.e. Chlorine Building).

Laboratories

The following will be used for all laboratory work with chemicals:

- For accidents and spills with eye contact, the eyes will be promptly flushed with water for 15 minutes then medical attention will be sought.
- For accidents and spills involving skin contact, the area will be promptly flushed with water and contaminated clothing will be removed.
- If symptoms continue after washing, then medical attention will be sought.
- Spills will be promptly cleaned up using appropriate personal protective equipment and proper disposal.

The following safe work habits are listed below to assist in avoiding unnecessary exposure to chemicals:

- Do not smell or taste any chemical.
- Inspect gloves before use with chemicals.
- Use only chemicals for which the quality of ventilation system is appropriate.
- Avoid eating, drinking, or smoking in laboratory areas.
- Handle and store glassware with care to avoid breakage.
- Wash areas of exposed skin well before exiting the lab.
- Do not use mouth suction for piping.
- Confine long hair or loose clothing and wear shoes at all times.
- Keep work area clean, uncluttered, with chemicals and equipment being properly labeled and stored.
- Use appropriate personal protective equipment at all times.

PROCEDURE: WALKING AND WORKING SURFACES

This policy is to provide protection from the hazards of falling in a working environment. This policy is divided into seven sections: 1) Definitions, 2) General Requirements, 3) Floor and Wall Openings and Holes, 4) Fixed Industrial Stairs, 5) Portable Ladders, 6) Fixed Ladders, and 7) Scaffolding.

DEFINITIONS

The following definitions explain the OSHA requirements of some items.

Standard Railing- are required for stairs with 4 or more risers and will consist of a top rail, intermediate rail, and posts and will have a vertical height of 42 inches nominal from the upper surface of the top rail to the floor. The top rail will be smooth-surfaced throughout the length of the railing and the intermediate railing will be approximately halfway between the top rail and the floor. The construction materials will be strong enough to support 200 pounds of pressure at any point along the upper rail.

Stair Railing - will be of similar construction to a standard railing but the vertical height will be not more than 34 inches and not less than 30 inches from the upper surface of the upper railing to the floor surface.

Standard Toe board - will be 4 inches nominal in vertical height from its top edge to the floor. It will be securely fastened with not more than one-quarter of an inch of clearance above the floor. It will be made of substantial material with no openings larger than one inch.

Handrail -will consist of a lengthwise piece that is directly fastened to wall or partition by means of brackets that connect to the lower side of the rail. The handrail will be easy to grasp and will be no more than 34 and no less than 30 inches in vertical height from the top edge of the railing to the floor. The handrail should be strong enough to support 200 pounds of direct pressure, be at least 3 inches from the wall, and will have no more than 8 feet in between brackets.

Floor Opening Covers - will be made of any material that can support the weight requirements and may protect up to one inch from the floor level as long as the edges are chamfered to an angle of no more than 30 degrees and all handles, bolts, etc. are flush with the cover.

Wall Opening Barriers and Handles - Barriers will be constructed so that they can support 200 pounds of pressure applied in any direction, except upward. Grab Handles will be no less than 12 inches in length and will have 3 inches of clearance between the handle and the wall. It will be capable of handling 200 pounds of pressure in any direction.

General Requirements

All places of employment, passageways, storerooms, and service rooms will be clean and orderly. The floor of every workroom will be kept clean and as dry as possible. Where wet processes are employed, drainage and mats should be used as much as possible. All floors, walls, and doors will be kept free of any nails, splinters, holes or loose materials. Aisles and passageways will be kept free of any obstructions. Covers and/or guardrails will be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc. There will be a plate, securely affixed to every building, stating the loads approved by the building official for all floors.

Floors and Wall Openings and Holes

Stairway floor openings will be protected by a standard railing and all ladder way floor openings will be protected by a standard guardrail and toe board. Every pit and trap door floor opening will be protected with a sturdy cover. All manhole openings will be guarded by a manhole cover and, when in use, will be constantly attended or protected by removable railings. All other floor holes that someone may walk into will be protected by standard railings or a floor hole cover.

Every wall opening from which there is a drop of 4 feet or more will be protected by a rail, roller, half-door or other barrier or an extension platform with standard railings. If equipment may fall from this opening, then a toe board will also be necessary. All temporary wall openings need protection barricades, but they do not have to be of standard construction.

Open-sided floors with a 4 foot or higher drop to the adjacent floor will have standard railing on all sides except where there is a ramp, stairway, or fixed ladder and will have a toe board when there is a danger of falling equipment. Every runway will be guarded by a standard railing and toe board, when applicable. Regardless of height, all open-sided floors, walkways, platforms, etc. that are above or adjacent to dangerous equipment, degreasing, units, galvanizing tanks or similar hazards, will be equipped with standard railings and toe boards.

All flights of stairs with four or more risers will be equipped with standard stair railings or handrails depending on the configuration of the stairs as outlined in the OSHA regulations.

Fixed Industrial Stairs

Stairs will be required where operations necessitate regular travel between levels and for access to operating platforms where regularly attended machinery is located. Stairs will be strong enough to hold 1000 pounds and will be installed at horizontal angles between 30° and 50°. The design and .tread run will conform to OSHA guidelines outlined in the regulation.

Portable Ladders

Ladders must be kept in good working condition and if any section of a ladder breaks, it must be scrapped and not repaired. Broken ladders must be visibly tagged as unsafe and all ladders will be regularly inspected. Any parts of the ladder that show signs of wear must be taken care of. Rungs will be kept clean and will have a skid resistant surface. All portable ladders must have secure footings and skid resistant feet when there is a hazard of slipping.

Portable ladders will have a minimum of 12 inches between side rails and will not extend more than 30 feet in length. Portable ladders are designed to handle one man and a 200 pound load. A simple rule for setting up a ladder at the proper angle is to place the foot of the ladder at a distance from the wall that is one-fourth of the distance being scaled. No ladder will be used to gain access to a roof unless the top of the ladder is extending at least three feet above the level of the roof. All particular types of ladders will meet the OSHA guidelines given in this regulation. Ladders near electrical sources will be of a nonconductive material.

Fixed Ladders

Fixed ladders are those ladders that are permanently affixed to a wall or structure. These ladders must meet the design characteristics outlined in the OSHA regulations. They must be properly maintained and will have a corrosive resistant coating that will protect the ladder from the elements.

Fixed ladders greater than 20 feet will have cages, railings, or fall arresters to serve as safety devices. These devices must also fit the requirements of OSHA.

PROCEDURE: WELDING, CUTTING, AND BRAZING

The following procedures will be followed by county employees involved in welding, cutting, or brazing to ensure their safety:

- Compressed gas cylinders will be legibly marked, secured in a vertical position, and will have valve protection caps installed on cylinders that will accept them. Oxygen cylinders will be separated from combustible materials by at least 20 feet of by a noncombustible barrier at least 5 feet high and 1/2 hour fire resistant.

- Acetylene cylinder valves will be closed when work is not in progress and opened no more than one and one half turn of the spindle when being used.

- Adequate welding shields, booths, or curtains will be used when appropriate. Well ventilated areas are required to ensure removal of fumes and smoke and keep the concentration within safe limits. Personal protective devices will be used when welding is in progress. Helmets and hand shields will be used by the welder and any attendant will use goggles or helmet.

- Manufacturer's operating rules and instructions for welding equipment will be strictly followed. Welding equipment will be inspected before using and at least monthly by qualified personnel and recorded. Inspection records will be maintained at the Shop.

- Welding cable splices will not come within 10 feet of the holder. Arc welders will be disconnected at the end of operation.

- Only employees trained in safe means of welding and the use of fuel gas will operate welding equipment.

- Fire extinguishing equipment will be available in the work area for instant use. All Public Works staff will be trained in the use of fire extinguishers.

- Used drums, barrels, tanks or other containers will be thoroughly cleansed of flammable materials before welding begins.

PROCEDURE: ERGONOMICS AND OFFICE SAFETY

Ergonomics is the science of fitting the job to the people who work in them. When job demands exceed human capabilities, there is an increased risk for fatigue, discomfort, injury, and a variety if work-related Musculoskeletal Disorders (MSDs). Some basic ergonomics principles will help improve employee comfort and minimize the occurrence of injury.

What Are Musculoskeletal Disorders (MSDs)?

MSDs are injuries and illnesses that affect muscles, nerves, tendons, ligaments, joint or spinal discs. Some common types of MSDs include: Tendinitis, Epicondylitis, Tenosynovitis, Herniated Disc, Trigger Finger, Dequervain's Disease. Carpal Tunnel Syndrome. Hand-arm Vibration Syndrome, Low Back Pain.

What Are The Signs And Symptoms Of MSDs?

Pain, burning or stiffness in joints or muscles; pain in wrists, shoulders, arms, or legs; swelling or inflammation, fingers or toes turning white; back or neck pain; shooting or stabbing pains in arms or legs

What Causes MSDs?

Work-related MSDs can be caused by exposure to these risk factors:

- Forceful exertions (heavy lifting, pushing, or pulling)
- Repetitive motions (frequent bending of joints)
- Awkward postures (extreme bending, stooping, reaching)
- Contact pressure (pressing the body against hard surfaces or edges)
- Operating Vibrating tools

Non-work-related factors can cause MSDs or symptoms. Signs and symptoms similar to MSDs can be caused or aggravated by activities or conditions off the job such as: sports, arthritis, hobbies, pregnancy, smoking, menopause, alcohol consumption, certain medications, diabetes, and many more.

Prevention is the Best for Eliminating MSDs

- Store heavy supplies at a height between knees and shoulders. Use proper lifting techniques for moving heavy supplies or equipment.
- Utilize proper posture when sitting for long periods of lime or when lifting and carrying.
- Interrupt repetitive tasks at least every 15 minutes to allow rest to stressed body parts; including computer work.
- Organize work space to allow for best use of body and least amount of stress on one part of the body.
- Turn rather than twist when working.
- Use a telephone head set with extended phone work to allow hands free. Do not hold phone between ear and shoulder.
- Select proper work equipment to support the body such as chairs with firm, padded backs and appropriate height; back belts or hand trucks when lifting heavy objects; etc.

Reporting MSD Incidents Or Signs/Symptoms Of MSDs

Early intervention is essential in controlling MSDs. Report all incidents or sign/symptoms immediately to the Director or supervisor so that prompt evaluation and medical care can be started. Explore ways to prevent or reduce exposure to MSD risk factors.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review inspection results for trends and issues and recommend actions to improve if needed.

OSHA® FactSheet

Effective Workplace Safety and Health Management Systems

Every day, workplace injuries, illnesses and fatalities cause immeasurable pain and suffering to employees and their families. Recent estimates indicate that workplace injuries and illnesses cost our nation's businesses $170 billion per year in wasteful and often preventable expenses.

Effective Safety and Health Management Systems (SHMS) have proven to be a decisive factor in reducing the extent and severity of work-related injuries and illnesses. SHMS will result in reduced injury-related costs. These savings, when properly administered, will exceed the cost of a workplace SHMS.

Critical Elements of an Effective SHMS

The critical elements of an effective SHMS are: management commitment and employee involvement; worksite analysis; hazard prevention and control; training for employees, supervisors and managers. (See the reverse of this fact sheet for a checklist of action items for every SHMS component.)

OSHA Resources to Assist Employers with SHMS

- Small and medium-sized employers can benefit from OSHA's "Small Business Handbook" which contains specific information about SHMS: www.osha.gov/Publications/smallbusiness/small-business.html
- OSHA's "Compliance Assistance Quick Start" Web page is another online resource providing SHMS information: www.osha.gov/dcsp/compliance_assistance/quickstarts/index.html
- OSHA's "Hazard Awareness Advisor" is an online tool to assist in identifying and correcting safety and health workplace hazards: www.osha.gov/dts/osta/oshasoft/hazexp.html
- Employers seeking more comprehensive SHMS information, especially those with a safety and health professional on staff, can work with OSHA's Voluntary Protection Programs: www.osha.gov/dcsp/vpp/index.html and/or benefit from OSHA's "SHMS eTool": www.osha.gov/SLTC/etools/safetyhealth/index.html

Take Advantage of Free OSHA Assistance

Compliance Assistance Specialists are available in every OSHA Area Office to help you. Find the one in your local area: http://www.osha.gov/dcsp/compliance_assistance/cas.html

You may also contact your state's OSHA On-site Consultation program for free, expert assistance: www.osha.gov/consultation

The States that operate OSHA-approved State plans can also provide assistance; some have specific requirements for SHMS: www.osha.gov/dcsp/osp/index.html

OSHA's "$afety Pays" program is an interactive expert system to assist employers in estimating the costs of occupational injuries and illnesses and the impact on a company's profitability: http://www.osha.gov/dcsp/smallbusiness/safetypays/index.html

Safety and Health Management Systems Checklist

Management Commitment and Employee Involvement

- ❑ Develop and communicate a safety and health policy to all employees.
- ❑ Demonstrate management commitment by instilling accountability for safety and health, obeying safety rules and reviewing accident reports.
- ❑ Conduct regular safety and health meetings involving employees, managers and supervisors.
- ❑ Assign responsible person(s) to coordinate safety and health activities.
- ❑ Integrate safety and health into business practices (e.g., purchases, contracts, design and development).
- ❑ Involve employees in safety and health-related activities (e.g., self-inspections, accident investigations and developing safe practices).
- ❑ Recognize employees for safe and healthful work practices.

Worksite Analysis

- ❑ Evaluate all workplace activities and processes for hazards.
- ❑ Reevaluate workplace activities when there are changes in:
  - ❑ Processes ❑ Materials ❑ Machinery
- ❑ Conduct on-site inspections, identify hazards and take corrective actions.
- ❑ Provide a hazard reporting system for employees to report unsafe and unhealthful conditions.
- ❑ Investigate all accidents and near misses to determine their root causes.

Hazard Prevention and Control

- ❑ Eliminate and control workplace hazards (e.g., engineering controls, workstation design and work practices).
- ❑ Establish a preventive maintenance program.
- ❑ Keep employees informed of safety and health activities and conditions.
- ❑ Plan for emergencies (e.g., create an evacuation plan, train employees and conduct fire drills).
- ❑ Record and analyze occupational injuries and illnesses.

Training for Employees, Supervisors and Managers

- ❑ Provide training on specific safe work practices before an employee begins work.
- ❑ Provide additional training for new work processes and when accidents and near misses occur.
- ❑ Provide refresher training on a routine basis.

(NOTE: OSHA regulations do not require employers to have a SHMS. Thus, the items on this checklist are strictly voluntary with the exception of construction industry employers.)

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For more complete information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov

(800) 321-OSHA

DEA 3/2008

MOTOR VEHICLE & MOBILE EQUIPMENT SAFETY

Purpose

The purpose of this section is to relay to Davie County employees the importance of responsible vehicle operation. Employees will be responsible for ensuring safe operation, maintenance, and when required, inspection of the vehicle as detailed in this policy. **Employees must not operate an unsafe vehicle or operate a vehicle in an unsafe manner.**

Motor Vehicle Policy· Maintenance

All vehicles must be properly maintained in conformity with the vehicle manufacturer's suggested schedule. No employee is to operate a vehicle that is not in safe operating condition. For assigned automobiles, the assignee is responsible for proper maintenance. For mobile equipment, the Department Directors will designate someone to be responsible for maintenance of each individual vehicle. The person(s) responsible will see that the maintenance schedule is followed, see that other needed repairs are made in a timely manner, and keep a file documenting all maintenance and repair records.

Motor Vehicle Policy - Driver Selection

Careful driver selection is the key to overall fleet safety. No new employee is to be allowed to drive a County vehicle until the employee has completed the normal application procedure, references have been checked, possession of a valid drivers license has been verified (photocopy in personnel file), and a motor vehicle record (MVR) has been obtained and reviewed. Vehicle Policy further states:

A. **COUNTY VEHICLES ARE TO BE OPERATED ONLY BY THOSE INDIVIDUALS AUTHORIZED BY MANAGEMENT TO DO SO, and are not to be operated by unauthorized individuals.**

B. No employee is allowed to operate a county vehicle unless properly licensed to do so.

C. Operating a county vehicle with an expired or revoked driver's license is grounds for termination.

D. The Human Resource Department will review the driver's license of every employee who is authorized to operate a county vehicle. Any problems identified will be passed on to Department Directors for review.

E. The Human Resources Department will obtain state Motor Vehicle Record (MVR's) updates on all employees. The Human Resources Department will review these records carefully and advise the County Manager of any record showing a poor driving record. As a minimum, the County Manager is to be advised of any record showing:
   - Suspension, revocation or expiration of license
   - two or more moving violations, two or more chargeable accidents, or a combination of two or more moving violations and chargeable accidents over a 24 month period
   - Driving while intoxicated (DWI), reckless driving, leaving the scene of an accident, hit and run, vehicular homicide or assault, participating in an unlawful speed contest, or eluding or attempting to elude a police officer.
   - Any other violation or accident indicating careless disregard for public or personal safety, or the abuse of a county vehicle.

The County Manager will review any record showing driving problems outlined above to decide whether or not to allow the employee to continue to operate a County vehicle. Violations as listed above may disqualify an employee from operating any County vehicle.

Motor Vehicle Policy - Vehicle Use

A. Drivers are to abide by all traffic regulations, laws and ordinances while driving for the County. The Safety Committee will periodically provide appropriate fleet safety information to County vehicle drivers.

B. All occupants of a County-owned vehicle shall wear seat belts while it is in operation. In the interest of safety, employees are encouraged to always use seat belts, whether or not they are on County business.

C. Each Department Director is responsible for maintaining the following information in the glove box of each county owned vehicle:
   1) Insurance Policy Card that includes accident reporting information
   2) Vehicle registration information

D. Drivers will not drive after having consumed alcohol and/or drugs, including legal drugs that may impair their ability to operate a motor vehicle. Passengers other than business associates on County business are not to be carried in any County vehicle. Under no circumstances are drivers of County vehicles to pick up hitch-hikers or give rides to strangers.

Motor Vehicle Policy - General Safety Rules

The following safety procedures apply to operation of all county vehicles:

A. Employees are required to complete safety checks at least once per year on any vehicle they are assigned to drive. Regular preventative maintenance is also required. Vehicle safety checks include but are not limited to:
   - Windshield washers and wipers
   - Directional signals
   - Power steering
   - Fluid reservoir
   - Brakes and brake fluid
   - Hydraulic systems
   - Clutch (if applicable)
   - Lights
   - Tires
   - Horn
   - Motor oil
   - Registration, Inspection, and License Tag

B. Employees should adjust the seat, inside and outside mirrors, and steering wheel tilt for safe driving before putting the vehicle into gear.

C. Emergency vehicles: **The fact that an employee is operating an emergency vehicle does not absolve him or her from civil or criminal liability for the consequences of wantonly reckless driving.** The driver must be in the position to satisfy a jury that reasonable care and prudence was used in operating emergency vehicles. Even though emergency equipment has warning devices, the drivers are expected to **PROCEED WITH ALL CAUTION.**

D. Never take drugs or strong medication before operating a vehicle. Remember that drugs, illness, or extreme fatigue may affect your ability to judge distance, speed, and driving conditions. This includes prescription drugs.

E. All persons who drive or ride in public entity vehicles are to wear the installed seat belts at all times. Supervisors are responsible for insuring that all of their employees are utilizing the installed seat belts.

F. Not more than three persons are permitted to ride in the front seat of any vehicle. Persons may not be transported in any vehicle unless safe and secure seating is provided for each person.

VOLUNTEERS OPERATING COUNTY VEHICLES

Volunteers driving County vehicles or conducting County business in their personal vehicles are required to abide by all the above safety rules and restrictions. Copies of **volunteers' drivers' license and proof of insurance** on their personal vehicle should be kept on file in the department where they volunteer.

ELECTRICAL SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Are any electrical heaters observed in your department? If yes, where?			
2. Are any drop cords observed in your department? If yes, where?			
3. Do all electrical outlets have faceplates in place?			
4. Appliance cords should not be run across any walkway, even if taped in place. Do you observe violations? If yes, where?			
5. Is all lighting in proper working order?			
6. Is there any surface hot enough to burn a person or ignite nearby materials? If yes, please explain.			
7. Are all electrical cords for equipment in good working condition without frays or exposed wiring?			
8. All hand held tools and equipment have three prong plugs or have a double insulated label for proper grounding?			
9. Are any unsafe situations observed during inspection? If yes, please explain:			
The following are only for departments who repair electrical equipment			
10. Has a lock out/tag out program been implemented?			
11. Have employees been trained in the uses and limitation of the lock out/tag out program?			
12. Are adequate tags and locks available for use by employees?			
13. Are only authorized and trained staff allowed to work on electrical equipment?			
Recommendations for Improvement:			

FACILITY SAFETY:
MATERIAL HANDLING AND STORAGE
SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Are aisles and passageways kept clear of stored materials?			
2. Are materials securely stacked when stored?			
3. Is good housekeeping maintained in storage areas?			
4. When equipment is broken or not working, is the equipment tagged and/or removed from service?			
5. Does the ventilation system adequately remove noxious dust, vapors, and gases from the work environment?			
6. Are only trained and authorized drivers permitted to operate vehicles and/or powered industrial trucks or forklifts?			
7. Are unauthorized personnel prohibited from riding on powered industrial trucks or only allowed when provided a safe place to ride?			
Recommendations for Improvement:			

FACILITY SAFETY:
WALKING AND WORKING SURFACES
SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Are floors clean and dry?			
2. Are permanent aisles appropriately marked and kept clear?			
3. Is adequate lighting provided in all work areas?			
4. Is material on elevated surfaces piled, stacked or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading?			
5. Are floor holes into which persons can accidentally fall guarded?			
6. Do stairways have a railing on at least one side?			
7. Is seven foot vertical clearance maintained above any stair tread?			
8. Are the waste containers emptied regularly?			
9. Do hazardous waste containers have tight fitting covers?			
10. Are toilet facilities accessible and do they contain an adequate number of toilets?			
11. Is eating prohibited in toilet areas and areas exposed to toxic material?			
Recommendations for Improvement:			

ERGONOMICS WORKSTATION EVALUATION CHECKLIST

Date:		Department:	
Name of Person Completing:			

Instructions: Select a work station with a computer, observe the person at work, and evaluate for the following:

Equipment	Yes	No	N/A
1. Chair height is adjusted so hips are even or slightly above knees.			
2. Keyboard and monitor are located directly in front of you.			
3. Keyboard height adjustment pegs are flat, not upright.			
4. Keyboard is centered with body between the "G" and "H" keys.			
5. Mouse is located adjacent to and same height as keyboard.			
6. Monitor screen height is slightly below eye level (lower for bifocal wearers).			
7. Monitor is located about an arm length away from user.			
8. Line of sight to monitor is parallel with outside windows.			
Posture			
1. Lower back is supported.			
2. Hips are bent at a 90° to 100° angle.			
3. Shoulders are relaxed.			
4. Arms form a 90° to 100° angle.			
5. Elbows are adjacent to torso.			
6. Wrists are straight or slightly bent downward.			
7. Forearms or wrists do not rest on sharp work surface edge.			
8. Feet rest flat on floor or footrest.			
9. Neck is upright and not bent laterally or turned to side.			
Helpful Hints			
1. Phone is never cradled between neck and shoulder.			
2. Use a light touch on keyboard.			
3. Use light grip on mouse with no wrist twisting.			
4. Mini-breaks are taken at least every hour of continuous computer use.			
5. Posture is changed periodically.			
6. Periodically focus on a distant object and blink frequently.			
Recommendations for Improvement:			

PERSONAL PROTECTIVE EQUIPMENT & RESPIRATORY PROTECTION

PURPOSE

The purpose of this policy is to maintain a safe working environment for the employees of the Davie County by preventing injury or illness due to the absorption, inhalation, or physical contact with hazardous substances. The purpose of this document is to describe our compliance with the Occupational Safety and Health Act (OSHA) Personal Protection Equipment.

INFORMATION SOURCES

The information in this document is from the Occupational Safety and Health Standards 29 CFR 1910.132-134 and The Industry Guide #25: A Guide to Personal Protective Equipment from NCOSH.

RESPONSIBILITIES

The County will provide each employee with personal safety equipment to protect the body from injuries and illnesses due to the absorption, inhalation, or physical contact. **Department Directors will select appropriate protection based on the tasks performed, conditions present, duration of use, and the hazards identified.**

The Department Director is responsible for ensuring that all employees are knowledgeable and compliant with these requirements. Employees are responsible for using personal protective equipment that is provided.

This policy addresses the following: Eye and Face Protection, Respiratory Protection, Occupational Head Protection, Occupational Foot Protection, Fall Protection, and Respiratory Protection procedures.

PROCEDURE: PERSONAL PROTECTIVE EQUIPMENT (PPE)

Hazard Assessment and Equipment Selection

Each Department Director has conducted an assessment of the work performed and the work place to determine the need for personal protective equipment. PPE's were selected and employees are trained in their use.

Eye and Face Protection

Eye and face protection will be made available to protect employees from the dangers of flying objects, glare, liquids, or a combination of these hazards. Suitable protection devices will be reasonably comfortable, snug fitting, durable, and easily cleanable and capable of being disinfected. These protectors will be kept clean and in good working condition. Persons whose vision requires corrective lenses will be given safety goggles that may be worn over prescription glasses. Each protector will be marked with only the manufacturers identification and any limitations that the manufacturer suggests must be communicated to each employee All protectors will meet minimum OSHA standards.

Occupational Head Protection

Employees who are subject to falling and flying objects or limited electrical shock and burn will be provided with head protection. These helmets will meet minimum OSHA standards.

Occupational Foot Protection

Safety-toe footwear, either steel-toe shoes or foot guards, will be provided to employees who face the hazards of foot and toe injuries. The protective footwear will meet minimum OSHA standards.

Fall Protection

Safety lines and harnesses will be used when work areas are greater than 10 feet above ground. These must be used at both elevated water tanks.

Hand Protection

Hand protection (gloves) will be provided and used by employees when hands are exposed to hazards from exposure or absorption from harmful substances, severe cuts, lacerations, abrasions, punctures, chemical/thermal burns, and harmful temperature extremes. Directors will select appropriate hand protection based on the task(s) performed, conditions present, duration of use, and the hazards identified.

PROCEDURE: RESPIRATORY PROTECTION

Respirators will be provided by the county when such equipment is necessary to protect the health of the employee. The respirators provided must be appropriate for the intended work. A Self-contained Breathing Apparatus is provided to the Fire Marshal. Employees shall use the provided respiratory protection by following instructions and training received. Persons will not be assigned to tasks requiring the use of respirators unless it has been determined by medical staff that they are able to perform the work and use the equipment.

Physical Exam

All employees who will be using a Self-Contained Breathing Apparatus will have a pre-employment physical by a physician to determine if the employee may be assigned to work with respirator equipment. Respirator users will have their medical status checked annually by a physician. The physician will forward a letter of approval for respirator use to the Human Resources Department.

Inspections

Inspections of the SCBA will be done before and after each use and at least once a month if the equipment is only used for emergency purposes. A record is kept of the inspection dates and findings. A safety inspection will include a check for defects; tightness of connections; condition of the face piece, headbands, valves, connecting tube and air tanks. The rubber or elastic parts will be checked for pliability and signs of deterioration. The air and oxygen cylinders should be fully charged and the regulator and warning device will be checked to make sure they are working properly.

Hydrostatic testing of the air tanks will be done at least every five years on the steel tanks and the fiberglass-wrapped tanks. Results will be documented and maintained. There should be a flow test performed annually and documented by a certified company.

Cleaning

Routinely used SCBA will be cleaned and disinfected frequently to insure proper protection. Respirators for emergency use will be cleaned and disinfected after each use. Respirators will be cleaned with a diluted Clorox solution (1:10) maintaining disinfectant contact for at least 20 seconds, then thoroughly rinsed with water.

Repair and Storage

Replacement of parts or repairs will be done only by an experienced person or will be returned to the manufacturer for handling. No parts will be replaced or adjustments made other than those specified by the manufacturer. All repairs will be entered on the SCBA Inspection and Maintenance Checklist.

Respirators will be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture and damaging chemicals. Emergency respirators will be quickly accessible and clearly marked. Routinely used respirators can be stored in plastic bags, but should not be placed in lockers or tool boxes unless in a carrying case. Respirators will be stored so the face piece and exhalation valve are in a normal position. Respirator straps will be at maximum length in storage.

Training

Training will provide an opportunity to:

1. handle the respirator;
2. have the respirator fitted properly;
3. test the face piece -to- face seal;
4. wear the respirator in normal air for a long familiarity period;
5. wear respirator in a test atmosphere.

Respirator wearers will receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Some conditions that may prevent a good face seal are: growth of beard, sideburns, skull cap that projects under the face piece. Also the absence of one or both dentures can seriously affect the fit of a face piece. The face piece fit will be checked each time the wearer puts on the respirator.

Temple pieces on glasses can prevent a good face piece seal. When a worker must wear corrective lenses the face piece and lenses shall be fitted by a qualified individual to provide good vision, comfort and a gas-tight seal. Wearing of contact lenses in contaminated atmospheres with a respirator is not allowed.

Training records including the instructor, the content, and a roster of participants will be maintained in each department with respiratory protection.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review inspection results for trends and issues and recommend actions to improve if needed.

PERSONAL PROTECTIVE EQUIPMENT

Self-Contained Breathing Apparatus (SCBA)
Inspection and Maintenance Checklist

This tag or a facsimile will be attached to each SCBA. Equipment is to be inspected at least monthly and after each use. Completed checklist tags will be maintained in the Fire Marshal's Office.

Date Inspected	Cylinder Pressure	PASS	Regulator Checked	Face piece and Breathing Tube Checked	Cleaned and Sanitized	Entire Apparatus Checked	Remarks	Inspected By (Initials)

Self-Contained Breathing Apparatus
Air Tank Maintenance Log

Steel air tanks are to be tested at least every five years and fiberglass-wrapped tanks are to be tested at least every three years. Results are to be recorded on this Log.

Tank #	Type	Serial #	Date Tested	Tested By	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

PERSONAL PROTECTIVE EQUIPMENT & RESPIRATORY PROTECTION SAFETY INSPECTION

Departments Reporting: Sheriff, Public Utilities, EMS, Fire Marshal & Health

Date:		Department:	
Name of Person Completing:			

Personal Protective Equipment (PPE)	Yes	No	N/A
1. Is protective clothing such as gloves, aprons, boots and vests provided in areas where hazards warrant their use?			
2. Is eye and/or face protection provided and used in areas where injuries may be prevented with this equipment?			
3. Are written procedures for the selection and use of personal protective equipment available?			
Respiratory Protection—**Fire Marshal**	Yes	No	N/A
4. Are respirators provided where necessary to protect the health of employees?			
5. Are personnel trained in the proper use and cleaning of respirators?			
6. Are respirators stored in a convenient, clean and sanitary location?			
7. Are SCBA's (Self Contained Breathing Apparatuses) thoroughly inspected and cleaned at least once a month and after each use?			
8. Are records kept of inspection dates and findings for SCBA's?			
9. Are employees assigned to positions that may require the use of respirators warned against having beards or sideburns, wearing glasses, or having facial conditions that may prevent a good face seal?			
10. Have they been fitted properly?			
Recommendations for Improvement:			

BLOOD BORNE PATHOGENS EXPOSURE CONTROL PLAN OVERVIEW FOR ALL DEPARTMENTS

POLICY

It is our policy to maintain a safe working environment for the employees that minimizes the occupational exposure to blood borne pathogens and to comply with the Occupational Safety and Health Act 1910.1030 Occupational Exposure to Blood Borne Pathogens. It is the purpose of this policy to outline and describe the following as an overview for all departments:

- Definitions
- Scope of Employees Covered
- Personal Protective Equipment
- Responsibilities
- Universal Precautions/Exposure control practices
- Post Exposure Follow-Up
- Information and Training
- Recordkeeping

****Category I employees should refer to the Davie County Exposure Control Policy (Section 8B) and detailed Policy and Procedures Exposure Control Plans unique to High Risk Departments.**

The safe performance of daily operations has recently become more threatened by life endangering communicable diseases, with the most infectious being Human Immuno deficiency Virus (HIV) and Hepatitis Virus.

DEFINITIONS

Blood Borne Pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans - most commonly refers to HBV, HIV, and syphilis.

Body Fluids: Liquid secretions including, but not limited to, blood, saliva, vomit, urine or feces.

Contaminated: The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Communicable Disease: Those infectious illnesses that are transmitted through direct or indirect (including airborne) contact with an infected individual, but not limited to, the body fluids of the infected individual.

Exposure Incident: A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Hand washing Facilities: A facility that provides an adequate supply of running water, soap and single use towels or hot air drying machines.

Hepatitis B and C: A viral disease of the liver, transmitted through blood and blood products.

Occupational Exposure: Reasonably anticipated skin, eye, mucous membrane or parenteral (piercing) contact with blood or other potentially infectious materials that may result from the performance of the employee's duties. (example: crime scene investigation, refuse collection, cleaning blood, excrement, vomit).

Personal Protective Equipment: Specialized clothing or equipment worn by an individual to protect him/her from a hazard including, but not limited to, gloves, laboratory coats, face shields, masks, and mouthpieces.

Contaminated Sharps: Means any contaminated object that can penetrate the skin including, but not limited to, needles and broken glass.

Universal / Standard Precautions: Is an approach to infection control to reduce the likelihood of exposure by standardizing the manner in which a task is performed.

SCOPE OF EMPLOYEE COVERAGE

All full-time, part-time and seasonal employees who have exposure to blood borne pathogens are covered by this policy and its standard operating procedures. OSHA has defined the classification of employee work activity into three categories with regards to HIV and HBV regulations. They are:

I. **Category I:** Tasks that involve actual or potential for mucous membrane or skin contact with blood, body fluids, or tissues. Universal precautions apply (all people should be assumed to be infectious for blood borne pathogens and take universal precautions to prevent communicable disease transmission).

Employees in Category I (High Risk) include:

Nurses
Medical Assistants
Lab Staff
Home Health Aides
EMT / Paramedics
Physicians
Sheriff's Officers
Waste Treatment facility workers

****Category I employees should refer to the Davie County Exposure Control Policy (Section 8B) and detailed Policy and Procedures Exposure Control Plans unique to High Risk Departments.**

II. **Category II:** Tasks that involve no exposure to blood, body fluids, or tissues, but employment may require exposure in an emergency.

Employees that fall in Category II (Minimum Risk) include:

Contract cleaning service
Personal Care Providers
Physical / Occupational Therapists

III. **Category III:** Tasks that involve no exposure to blood, body fluids or tissues, and does not entail predictable or unpredictable exposure to blood or blood by-products.

Employees that fall in Category III (No Risk) include:

All other job categories
Clerical personnel in all departments

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) will be provided to employees as needed. Examples of personal protective equipment include, but are not limited to: gloves, masks, eye wear, apron, gown, resuscitation equipment. If a PPE is penetrated by blood or potentially infectious material, it will be removed immediately or as soon as possible. Staff will remove PPE prior to leaving the work area. Removed PPE will be placed in the designated area or container for cleaning and storage or disposal. If an employee's personal clothing becomes soiled with blood or potentially infectious material, scrubs are available and the soiled clothing will be sent for laundering at no cost to the employee.

Gloves - disposable gloves in appropriate sizes are available. Staff will wear gloves with any situation that contact with blood or body fluids is reasonably anticipated. Gloves are changed between patient contacts. Disposable gloves are not washed or disinfected for reuse. Gloves are removed before leaving the work area. Hands are washed immediately after removing gloves. Hypoallergenic gloves or glove liners will be available if needed. Utility gloves used for housekeeping may be disinfected and reused. They will be discarded if they are cracked, peeling, torn, punctured, or show signs of deterioration.

Mask, Eye Protection, and Face Shields - Mask in combination with eye protection devices will be worn whenever splashes, spray, splatter, or droplets of fluid may be generated and eye, nose, mouth contamination can be reasonably anticipated.

Foot Wear-Foot wear will be worn if there is any potential for shoes to become contaminated with blood or potentially infectious fluids.

Fluid Resistant Gowns or Aprons- Protective impervious gowns or aprons will be worn if there is a potential for soiling clothes with blood of fluid.

RESPONSIBILITIES

It is the responsibility of the Department Director or designee to:

1) Review and evaluate this program every year.
2) Maintain required (vaccination, incident, and exposure follow-up) records in the employee's medical file for reference.
3) Schedule new employee training and annual in-service training for staff.
4) Refer for medical services indicated including, but not limited to vaccinations, consultations and follow-up treatment.
5) Maintain a sharps injury log, if sharps are used by staff, for a period of 5 years.

It is the responsibility of the Department Director to familiarize his/her staff with this policy and ensure that the provisions are carried out within their respective department as specified. Specific responsibilities include the following:

- Initiate or assist in getting first aid for the injured or exposed person.
- Complete an Employee Accident/Injury Report form, forward to the Workers' Compensation Administrator, and place a copy in the employee's file.
- Workers' Compensation Administrator will include the exposure in the OSHA 300 log.
- Ensure that persons with blood and body fluid exposure complete an incident report and are referred for follow-up as soon possible.

It is the responsibility of the employees to:

- Know and follow this policy
- Perform their job to avoid exposure blood and body fluids and use personal protective equipment as needed.
- Help an injured or exposed person without exposing themselves.
- Immediately notify the Department Director of any exposure or incident to the employee or anyone else that occurred during the performance of assigned duties. Assist the Department Director in filling out the Accident / Injury Report form.
- Contact your Department Director if an employee is injured or believed to have been exposed to a potentially hazardous material. If the injury is serious, employees are to call 911 for EMS service.
- The receiving medical service or facility will be notified of any exposure.

STANDARD OR UNIVERSAL PRECAUTIONS

An employee must use the appropriate equipment and procedures to reduce the risk of exposure from blood and blood by-products. Standard or universal precautions are as follows:

a. The employee must wash his/her hands after any potential exposure for at least 20 seconds. (Before and after direct patient care, between each patient, after gloves are removed, after coughing or sneezing or blowing or wiping nose, before eating, after toilet use, before leaving the office.) When in doubt, wash your hands. Hand washing is the most important act in preventing the transmission of infection.
b. The employee must use necessary personal protective equipment, with limited exceptions (i.e., emergency situations).
c. Disposal of any sharps must be in puncture proof containers.
d. Employees must not recap needles or syringes except when a sterile needle is changed unless using a one handed technique.
e. Broken glass, which may be contaminated, must be removed by using forceps or a broom and dustpan.
f. Protective eye wear and nasal protection must be worn if contaminants have the potential to be spattered or inhaled.
g. Avoid direct contact with saliva, tears, sweat, urine, semen, feces or vomit.
h. Do not place common instruments such as pens, penlights or other items in your mouth.
i. Refrain from eating, drinking, smoking, applying cosmetics, and handling contact lenses in areas where the potential of exposure to blood or other potentially infectious materials may occur.
j. All employees are responsible for maintaining a clean and sanitary work site at all times.
k. Body Fluid spills are cleaned with a 1:10 bleach/water solution.

EXPOSURE CONTROL PRACTICES

Exposure Control Practices are measures that each employee can take to avoid contact with blood or body fluids. Any reasonably expected contacts with blood or blood products are to be treated as infectious and standard precautions must be used. Examples of procedures that exposure may occur include: any dressing change, care and handling of specimens, clean up of equipment, venipuncture, medication injections, handling disposal of hazardous waste, and handling of soiled laundry.

All contaminated waste must be disposed of in an approved container and in an approved manner. Waste is discarded in red bags or sharps containers in the area of use where the item becomes contaminated. Containers are supplied as follows:

1) **Red Plastic bags** are impermeable, impact and tear resistant, and labeled with the biohazard sign. Bags which are full are sealed by twisting the top of the bag, doubling the top over, and cinching tightly with tape or band. Bags are then placed in a biohazard waste box.

2) **Biohazard Boxes** are doubled walled and corrugated and labeled with the biohazard label. All open seams are sealed with moisture resistant tape of at least 2 inch width. A red plastic bag is placed in the box to ensure double bagging of waste. Boxes will not exceed 30 pounds. When box is full, seal the red bag as stated previously and close flaps of box. Tape and seal the box with at least 2 strips of tape. Write the date and your ID # on the outside of each box.
3) **Sharps Containers** are rigid and puncture resistant with protection from sticks at the opening. Each container will be labeled with the biohazard symbol. Containers are sealed and removed from area when they are 3/4 full. Staff is assigned to check for fullness weekly. Full and sealed containers are placed in biohazard boxes.
4) **Linen Bags** are leak proof, and are labeled with the biohazard sign. Grossly soiled linens will be placed in water-soluble laundry bags.
5) **Specimen containers** are rigid, leak-proof and properly labeled. Specimens will be placed in a leak proof baggy with the biohazard label. Blood samples may be obtained with mechanical pipetting. Mouth pipetting or suctioning is strictly forbidden.
6) **Biohazard waste and soiled linen storage areas** are away from the general traffic flow, are protected from vermin, insects, vandalism, and are maintained in a sanitary manner. Surfaces contaminated with spilled or leaked biohazard waste will be cleaned with a detergent and a tuberculocidal cleaning agent. Spills will be reported to the Department Director immediately and an incident report will be completed. Waste and linen is held for less than 30 days. The storage area will be clearly marked with a biohazard label. Staff handling waste and soiled linen will wear gloves. All records of biohazard pick-up, transport, and disposal will be maintained for three years.

POST EXPOSURE FOLLOW UP

Anyone who has an exposure must report to the Department Director and initiate an Incident and Exposure Report form. The Incident Report must be completed within 24 hours of the incident and placed in the Confidential Medical File maintained by the Department Director.

If an exposure has occurred, encourage cuts or needle sticks to bleed freely, if not life threatening. Flush exposure to mucous membranes with water. Eyes should be flushed for 15 minutes with eye lids held open. If medical attention, such as suturing, is necessary, refer employee to a physician. After possible skin exposure, the employee should immediately clean hands with an approved disinfectant hand cleaner. If cuts or abrasions to the skin are contaminated, the employee should apply an approved antiseptic to the wound immediately and contact medical personnel. All contaminated wastes must be disposed of in an approved container and in an approved manner.

The Department Director will:

1) Assist the staff in completing the Incident / Exposure report form.
2) Refer the exposed staff members to an approved medical provider for testing, counseling and treatment.
3) Place the completed exposure report form in the confidential medical file for exposed employees.
4) Report exposure to the designated Workers' Compensation Administrator immediately by filling out the Employee Accident/Injury Report form. Designated Workers' Compensation Administrator will record incident for inclusion on the OSHA 300 log. Designated Workers' Compensation Administrator staff is currently in the Finance Office.
5) Add incident to sharps Injury log, if applicable.

The Department Director will maintain a confidential medical file for all employees with an exposure. Any medical results must be kept confidential and will only be available to the immediate health care worker. The employee must be notified according to NC Communicable Disease Control Measures if positive exposure has occurred. Any worker's compensation claim in relation to an occupational exposure must be documented at the time of exposure by blood tests, in order to establish a baseline for future reference.

INFORMATION AND TRAINING

Initial information and training will be provided to covered employees by appropriately trained personnel. Training will consist of:

- Making available a copy of the standard for the employee's reference.
- Reviewing the policy and procedures.
- Discussing Blood Borne Pathogens including modes of transmission, HBV Vaccination, HIV, exposure and personal protective equipment
- Providing written material that explains HBV and HIV.
- Making available the HBV Vaccination and consent or declination form.
- Opportunity for questions and answers.

Training will occur during orientation for new employees, before assignment to new tasks where occupational exposure may take place, and at least annually thereafter for those in Category I.

RECORDKEEPING

The employer recordkeeping file will consist of:

a) A confidential medical record for each employee who receives the HBV vaccine and all employees with exposure/injury reports will be kept for a duration of employment plus 30 years.
b) Training records for annual training for Blood Borne Pathogen Policy and Exposure Control Plan to include content, who taught the course and attendance. These will be maintained for up to three years after the training.

HEPATITIS VACCINATION

The Hepatitis B Vaccine will be made available at no cost to all employees in Category I and II. Employee participation is on a voluntary basis only. If the employee chooses to accept the vaccination, he/she must complete a consent form. If the employee declines the vaccination, he/she must sign a declination form. If the employee initially declines, he/she may at a later time, elect to accept the vaccine. The Hepatitis B Vaccination is administered in a series of three (3) shots over a six (6) month period of time. Employees will be notified of the side effects and risks associated with the vaccine during the informed consent process. The Recombivax is administered in three 1 ml doses IM in the deltoid muscle. Dose #2 is given at one month after the initial dose, and #3 is given at 6 months. The employee is encouraged to be tested for immune status at no cost to the employee after an exposure. If testing reveals no immunity, a booster dose of 1 ml will be made available. Employees who have received the complete series previously, have shown antibody results showing immunity, or those who have medical reasons contraindicating the administration of the vaccine are exempt from vaccine administration.

Due to the increased exposure for the staff of the Health Department, EMS, Sheriff's Office, Detention, and Waste Treatment, a more extensive plan follows. Plans and Procedures, Exposure/ Incident reports, Post exposure reports, medical file forms, consent forms, etc. can be found in Section 8B.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review inspection results for trends and issues and recommend actions to improve if needed.

BLOOD BORNE PATHOGENS EXPOSURE CONTROL PLAN FOR HIGH RISK DEPARTMENTS

Davie County Government
123 South Main Street
Mocksville, North Carolina 27028
Telephone 336-753-6001 Fax 336-751-7408

Reviewed November 2015

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POLICY STATEMENT

Davie County is committed to providing a safe working environment for employees. This policy was formed to meet that goal and to comply with applicable sections of the Occupational Safety and Health Standards for General Industry (29 CFR Part 1910). Davie County seeks to protect its employees from the occupational acquisition of communicable diseases. To do this, employees, volunteers, students, trainees and observers whose activities might involve contact with patients, clients, or their blood and body fluids must follow these guidelines.

Exposure is defined as coming into contact with, but not necessarily being infected by, a disease causing agent.

Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that result from the performance of an employee's duties.

OSHA has developed three categories to describe an employee's occupational exposure to communicable disease.

Category 1: Jobs involve activities with direct contact with blood or other body fluids to which Universal precautions[1] apply.

Category 2: Jobs involve activities performed without blood exposure but exposure may occur in an emergency.

Category 3: Jobs involve activities that do not entail predictable or unpredictable exposure to blood.

Human Resources will periodically review and will indicate the appropriate category on all job descriptions.

All workers will follow this policy whether care is provided in a county department, home, laboratory, or in the community. The blood and body fluids of all clients will be treated as potentially infected. Universal precautions will be followed. It is the responsibility of each employee to follow this policy. Willful violations of the Exposure Control tenets may result in severe disciplinary action. All employees should be alert for potential exposures. Any exposure must be immediately reported to the supervisor.

1Universal or Standard Precautions are described in Appendix A

I. Orientation with Employees and Students

A. This policy will be reviewed with each new category I and II employee. Rider observers, students or trainees who will be performing category I and II tasks with county agencies must complete training in exposure control practices prior to starting. Universal precautions will be stressed. Employees who fail to follow universal precautions may be disciplined. Volunteers, students and trainees who fail to follow universal precautions may not be allowed to continue their work or internship.

II. Physical Examination and Immunizations

A. **Physical examinations** may be required prior to employment.
   1. All components of the attached forms should be completed.
   2. Subsequent physicals may be indicated by circumstances.

B. **Random drug screening** will be carried out as required by County policy.

C. **Immunizations**
   1. An immunization history will be completed as part of the pre-employment physical.
   2. Required immunizations
      a. Documented immunization or titer for measles and rubella will be needed for people born after 1957. (Once a person has been immunized or proven immunity to rubella this need not be repeated.)
      b. Tetanus-diphtheria boosters every 10 years.
   3. Recommended immunizations
      a. Annual flu vaccine is available to be administered at the Davie County Health Department.
      b. Hepatitis B vaccine will be offered free to employees in category 1 and 2 positions. Those refusing the vaccine must sign a waiver. (See Appendix B.)
   4. Immunization status will be evaluated annually.

D. **Tuberculosis (TB) Screening**
   1. Annual Mantoux TB skin test on all employees with a history of a positive exposure.
   2. Chest x-ray if indicated by North Carolina TB policy.
   3. Annually a risk assessment will be done and reviewed by the exposure control committee. The assessment will be used to update the exposure control plan.

E. **Respiratory Protection**
   1. Annual respiratory evaluations are recommended for employees required to utilize HEPA or N95 masks.
   2. With approval of the Risk Manager, department infection control officers may institute a method for evaluation based on departmental needs

III. Continuing Education and Inservice

A. Employees in high-risk positions will be provided annual continuing education on the county infection control policy, communicable diseases, modes of transmission and the appropriate use of safety equipment. Each worker should have a basic knowledge of diseases that they may come in contact with on the job. Some of the diseases are Hepatitis, Influenza, HIV, Tuberculosis, Lice, Scabies, Rubella, Rubeola, Meningitis and Pertussis. Training must be conducted annually with subsequent training within 364 days of the prior training.

IV. Safety Equipment and Supplies

A. Gloves and barrier clothing will be provided and shall be used when the employee, rider observers, student or trainee may come in contact with blood or body fluids. Safety glasses are required for any procedure where splashing and spraying of body fluids may occur. These are available in the work

area. Protective equipment shall be provided, used and maintained in a sanitary and reliable condition wherever there is potential for exposure. Special equipment such as airways, bag valve masks, and mouthpieces are to be used as indicated. Special puncture proof containers are located in all areas where sharps may be generated and shall be used for disposal. Waterless hand cleaners are available where hand washing facilities are not convenient.

B. All personal protective equipment shall be of safe design and workmanship. All personal protective equipment will be practical and suitable for the tasks performed.

C. Gloves shall be used in the following situations:

1. If the employee has cuts, non-intact skin, chapped hands, or dermatitis.

2. During examination of the mouth, nose, gastrointestinal tract and genitourinary tract.

3. When examining and treating patients with open wounds, non-intact skin or active bleeding.

4. During all invasive procedures. Some examples are starting intravenous fluids and drawing blood.

5. Cleaning blood and body fluid spills or decontaminating equipment.

D. Gloves will be available in a variety of sizes to ensure proper fit.

E. Employees shall not wash or disinfect surgical, examination or other gloves intended for single use. General-purpose utility (rubber) gloves worn by maintenance, housekeeping, or other non-medical personnel may be decontaminated and reused.

F. No gloves shall be used if they are punctured, torn, cracked or discolored. Gloves will be immediately replaced when deterioration is noted.

G. The use of a fluid proof or fluid resistant garment is required when splashes of body fluids are anticipated. The garment may be a gown, apron, lab coat or other garment that protects exposed skin and clothing. The garment should allow safe uninhibited performance of the task.

H. Masks and eye protection are required when splashes or aerosolization of blood or body fluids to the eyes, nose or mouth are a possibility. For example, oral suctioning involves a risk of aerosolization. They are not required for routine care. A table summarizing these recommendations is attached as Appendix D.

I. For suspected cases of TB or other airborne diseases employees shall use a HEPA or N95 mask.

J. Eyewash stations will be available in county facilities where direct patient care is provided.

V. Tags-Hazard Identification

A. Tags shall identify areas where employees may be exposed to hazardous or potentially hazardous conditions, equipment or operations until the identified hazard is eliminated or the operation is completed.

B. Tags shall contain a "signal word" such as BIOHAZARD or the biological symbol. A message that indicates the specific hazardous condition or safety instructions to the worker must accompany the "signal word" or symbol.

C. Bags or other receptacles containing contaminated articles must be tagged or otherwise identified.

D. All employees shall be informed of the meaning of the various tags used throughout the workplace. Instruction will be provided to the employees on the necessary precautions relating to each different tag.

VI. HAND WASHING

A. Hand washing is a very effective measure in preventing the spread of communicable diseases. Hands and other skin surfaces shall be washed as soon as possible after contact with the blood or body fluids of another individual. Hands should be washed after touching potentially contaminated articles. Hands must also be washed between patients or clients. Hands must be washed after gloves are used.

B. Hand washing should be done at a utility or rest room sink. Do not wash hands in a food preparation area. Wash hands with warm running water and soap. Work up a good lather and scrub hands vigorously for 15 seconds. Rinse well and dry thoroughly. Hands should preferably be dried with paper towels. Turn off the faucet with a paper towel. Discard the used paper towels in a waste receptacle.

C. Sometimes sinks and hand washing facilities are unavailable. In these cases a waterless hand cleaner should be used. Waterless hand cleaners have an alcohol base. Apply the cleaner according to the manufacturer's recommendation. Friction is required to kill surface organisms. This is not a substitute for washing hands with soap and water. At the earliest opportunity the hands should be washed thoroughly with soap and water.

VII. CONTACT ISOLATION

A. Contact precautions prevent the transmission of microorganisms through direct skin-to-skin contact or skin to contaminated item contact. Use these procedures when working with patients known or suspected to be infected with infectious pathogens. Some examples are multi-drug resistant bacteria and Clostridium difficile.

B. Wear clean non-sterile gloves when entering the patient area. While providing care, interrupt your task if you touch fecal material or wound drainage and change gloves. Remove gloves when leaving the patient area and immediately wash your hands.

C. When your job requires moving, lifting or extensive contact with the patient a non-sterile gown should be worn to protect clothing unless the worker is wearing appropriate protective clothing issued by the department.

D. Equipment coming into contact with these patients shall be washed after use.

VIII. HOUSEKEEPING

A. Walls, floors and other surfaces should be cleaned when soiled. Any commercially available cleaner or disinfectant may be used. Cleaning and removal of soil should be done routinely. Wear gloves when doing general cleaning in areas where blood and body fluid spills are likely.

B. Spills of blood or body fluids should be cleaned up quickly using an approved disinfectant. Gloves must be worn. If splashing is anticipated during clean up protective face shield and a gown or fluid proof apron should also be worn. The area can then be decontaminated.

C. Several disinfectants may be used to clean blood and body fluid spills. These include:
   1. Chemical germicides approved for use as hospital disinfectants. These agents shall be tuberculocidal when used as indicated by the manufacturer.

   2. Products designated by the Environmental Protection Agency as effective against HIV. This information must be stated on the label.

   3. Solutions of 5.25% sodium hypochlorite (household bleach) and water. Dilutions from 1:10 to 1:100 are acceptable. The solution of sodium hypochlorite needs to be mixed at the time of use.

D. The procedure for cleaning a blood or body fluid spill is as follows:

1. Assemble cleaning supplies which include gloves, a trash bag, paper towels and disinfectant.

2. Put on the gloves. Visible blood, tissue, body fluid or body waste should be wiped up with paper towels. Place the paper towels into the trash bag.

3. Spray the contaminated area with the disinfectant. Surface should be thoroughly wet and glisten. Let area air-dry.

4. Discard the gloves into the trash bag last. Knot the trash bag and place it into a trash receptacle. (This is considered pre-treated waste.)

5. The employee should wash his or her hands thoroughly.

E. Reusable equipment should be sterilized or disinfected according to CDC Guidelines recommended for Hepatitis B. Equipment must be cleaned in a utility sink **not** in a food preparation area.

IX. Linen

A. Employees handling used linen are not required to wear gloves unless linen is soiled with blood or body fluids. All linen shall be bagged as soon as possible in the area where it was used. Linen shall not be sorted or rinsed in patient care areas. Soiled linen shall be moved in leak proof bags.

X. Waste Disposal

For disposal of medical waste, departments should refer to the latest medical waste guidelines from the North Carolina Department of Environment and Natural Resources. The website is http://portal.ncdenr.org.

A. Regulated waste means liquid or semi-liquid blood or other potentially infectious materials, contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood and other potentially infectious materials. Less than 20cc of blood (2/3 ounce) may be disposed of with normal trash so long as it is properly enclosed in plastic bags and will not leak.

B. Containers for solid or liquid waste and refuse must be leak proof. They shall be made of a material that can be easily cleaned. Containers with tight fitting lids are preferred. Regardless of the design the container must be maintained in a sanitary manner.

C. Full containers shall be disposed of in accordance with state law. Contracting this task to private industry is recommended.

D. Regulated waste can be disposed of in two ways. Such wastes shall either be pre-treated prior to routine disposal or placed in a leak proof container for disposal by a private firm.

E. Sharp instruments are to be disposed of in puncture resistant containers. Needles are not to be recapped, bent or broken by hand. Items such as self-sheathing needles or forceps can be used to prevent recapping needles by hand.

F. Sharps containers will be located in the work areas where needles and other sharps are generated. Puncture resistant containers must be designed to prevent accidental spilling of the contents.

G. Refuse, garbage and non-infectious solid and liquid waste are to be disposed of daily or as needed to maintain a safe environment in the workplace.

XI. Transporting Lab Specimens

A. All samples of blood or body fluids shall be put into a leak proof container when transportation is necessary.

XII. Recommended Work Restrictions

A. When employees, volunteers, students or trainees acquire a communicable disease their job activities may need to be restricted to prevent further spread of disease. The following chart provides a summary of recommended work restrictions.

DISEASE/PROBLEM	RELIEVE FROM PATIENT CONTACT	PARTIAL WORK RESTRICTION	DURATION
Conjunctivitis, infectious	Yes		Until discharge ceases
Cytomegalovirus, infectious	No	TBD	Treatment as needed
Diarrhea, acute	Yes		Until symptoms resolve and R/O Salmonella
Diarrhea, convalescent	No	Personnel should not take care of high risk patients	Until stool is free of the infecting organism on 2 consecutive cultures not less than 24 hours apart
Other enteric pathogens	No		
Enteroviral	No	Personnel should not take care of infants and newborns	Until symptoms resolve
Group A streptococcal disease	Yes		Until 24 hours after treatment
Hepatitis A	Yes		Until 7 days after the onset of jaundice
Hepatitis B, acute and Hepatitis B carrier	No	Personnel should wear gloves for procedures that involve trauma to tissues or contact with mucous membranes or non-intact skin	Until antigenmia resolves
Hepatitis Non-A, Non-B (acute Hepatitis C)	No	Same as acute Hepatitis B	Period of infectivity has not been determined
Herpes simplex, genital	No		
Herpes simplex, orofacial	No	Personnel should not take care of high risk patients	Until lesions heal
Hepatic whitlow	Yes	It is not known whether gloves prevent	Until lesions heal

DISEASE/PROBLEM	RELIEVE FROM PATIENT CONTACT	PARTIAL WORK RESTRICTION	DURATION
		contamination	
HIV	No	Personnel should wear gloves for procedures that involve trauma to tissues or contact with mucous membranes or non-intact skin	As long as providing direct patient care
Immunosuppresed i.e. HIV, chemotherapy, renal failure, etc	Yes		Until cleared by physician
Measles, active	Yes		Until 7 days after the rash disappears
Measles-Post exposure, susceptible personnel	Yes		From the 5th through the 21st day after exposure and/or 7 days after the rash appears
Mumps, active	Yes		Until 9 days after onset of parotitis
Mumps-Post exposure susceptible personnel	Yes		From the 12th day through the 26th day after exposure or until 9 days after onset of parotitis
Pertussis, active	Yes		From the beginning of the catarrhal stage through the 3rd week after onset of paroxysms or until 7 days after start of effective therapy
Pertussis-Post exposure susceptible personnel	No		Same as active Pertussis if symptoms develop
Rubella, active	Yes		Until 5 days after the rash appears
Rubella-Post exposure susceptible personnel	Yes		From the 7th day through the 21st day after exposure and/or 5 days after rash appears
Scabies, lice and body parasites	Yes		Until treated
Staphylococcus aureus, skin lesions	Yes		Until lesions have resolved
Tuberculosis	Yes	Yes	Until two weeks of treatment with TB medications and until symptoms subside.

DISEASE/PROBLEM	RELIEVE FROM PATIENT CONTACT	PARTIAL WORK RESTRICTION	DURATION
Upper respiratory infections	Yes	Personnel with upper respiratory infections should not take care of high-risk patients	Until acute symptoms resolve
Zoster (Shingles)	No	Appropriate barrier desirable; personnel should not take care of high-risk patients	Until all lesions dry and crust
Varicella (Chickenpox) active	Yes		Until all lesions dry and crust
Varicella-Post exposure	Yes		From the 10th day through the 21st day after exposure or if varicella occurs until all lesions dry and crust

IF THE EMPLOYEE IS PHYSICALLY TOO ILL TO WORK, HE OR SHE SHOULD BE RELEASED FROM WORK. A PHYSICIAN'S ORDER FOR RETURN TO WORK MAY BE REQUIRED.

XIII. Reporting Exposures

A. Employees, rider observers, students or trainees who think they have been exposed to a communicable disease are to report the incident as soon as possible to their supervisor. The details of the incident will be documented in writing. The report should include:

1. The suspected disease
2. The date and time of the exposure
3. Type of exposure, i.e. blood, body fluid, secretion or airborne
4. Details of exposure to include the area of contact
5. Conditions of the exposure i.e. location, confined space, length of time of exposure
6. The name of the source patient if known
7. Employees are to have NC State Workers Compensation Form and county exposure form completed and sent to the Risk Manager.

B. Departments with category 1 and 2 employees will have a designated infection control person**Error! Bookmark not defined.**. All exposure reports will go to the appropriate infection control person for review. The report will also be forwarded to the Safety Supervisor. Other departments without a specific infection control person will forward their reports directly to the Safety Supervisor. In all cases this report should be to the infection control person within 24 hours of the event. Based on the information follow up will be initiated in accordance with policy.

XIV. Post Exposure Follow-Up

A. Initial testing and follow-up testing will be through a facility specified by the County. The employees' department will normally arrange follow-up testing. Specific protocols, which indicate courses of treatment for different types of exposures, are listed in the following chart. Exposures to diseases not covered by these protocols will be treated as prescribed by the attending physician.

B. Employees will be offered testing in cases of exposure to Hepatitis B, C and HIV and other communicable diseases for which definitive testing exits. As definitive testing for other communicable diseases becomes available, they will be added.

XVIII. RECOMMENDATIONS FOR HEPATITIS B PROPHYLAXIS FOLLOWING PERCUTANEOUS EXPOSURE

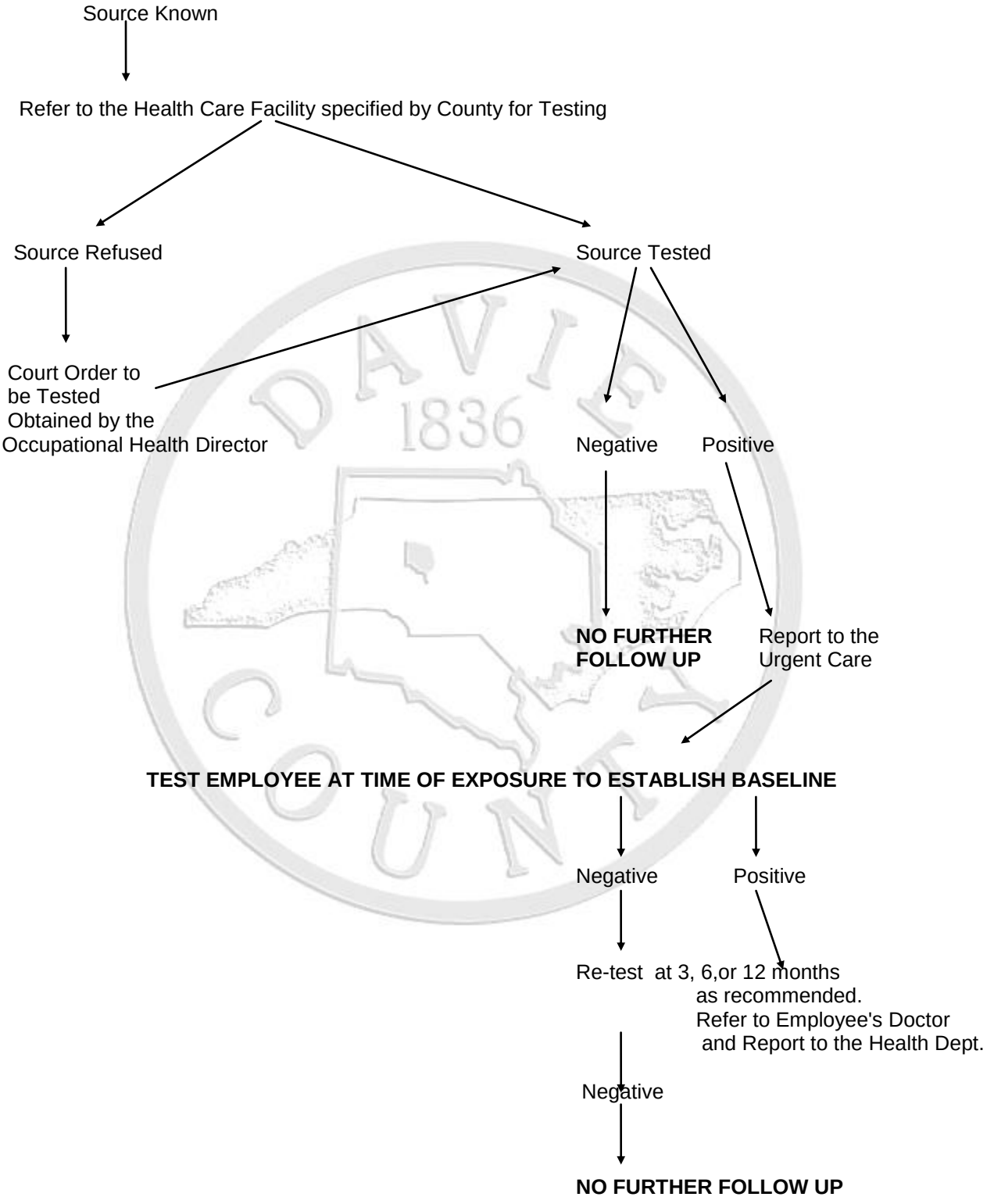
Treatment when source is found to be:

Exposed Person	HBsAg positive	HBsAg negative[1]	Unknown or not tested[1]
Unvaccinated	Administer HBIG x 1* and initiate hepatitis B vaccine+,^	Initiate hepatitis B vaccine+	Initiate hepatitis B vaccine+
Previously vaccinated Known responder	Test exposed person for anti-HBs. 1. If adequate, no treatment 2. If inadequate, hepatitis B vaccine booster dose^	No treatment	No treatment
Known non-responder	HBIG x 2 or HBIG x 1, plus 1 dose of hepatitis B vaccine^	No treatment	If known high-risk source, may treat as if source were HBsAg positive
Response unknown	Test exposed person for anti-HB++ 1. If inadequate HBIG x 1, plus hepatitis B vaccine booster dose^ 2. If adequate, no treatment	No treatment	Test exposed person for anti-HBs++ 1. If inadequate, hepatitis B vaccine booster dose 2. If adequate, no treatment

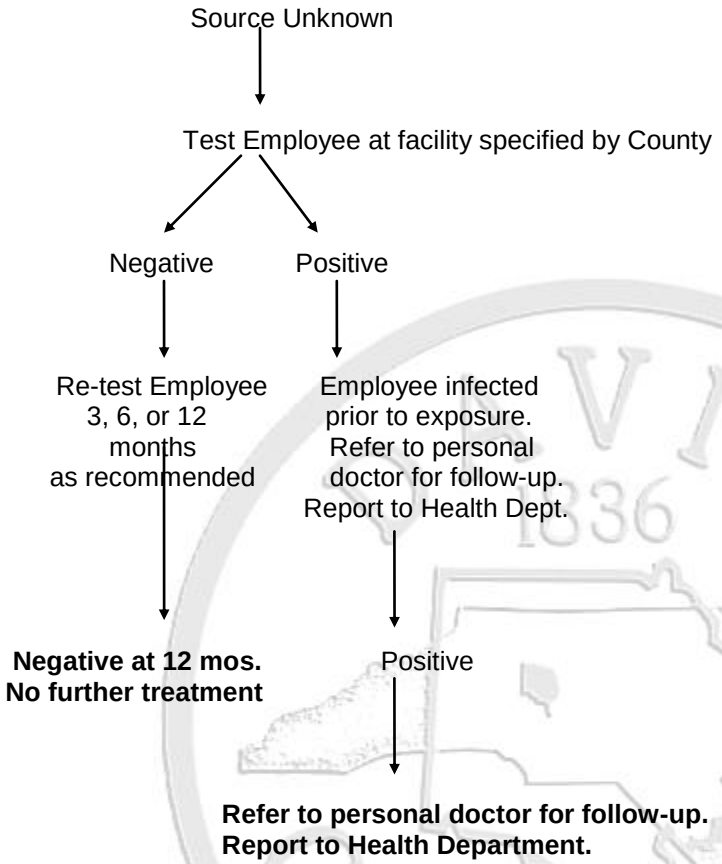
[1] Source increased liver enzymes and non-A non-B suspected Administer ISG 0.6 mL/kg.
* Hepatitis B immune globulin (HBIG) dose 0.06 mL/kg intramuscularly.
\+ Hepatitis B vaccine dose.
++ Adequate anti-HBs is > 10 milli-international units.
^ Persons receiving HBIG or hepatitis vaccines will have titers drawn based on the recommended standard at the time of exposure.

Source: Morbidity and Mortality Weekly Report, Vol. 40, No. RR-13, November 22, 1991. Hepatitis B Virus: A comprehensive Strategy for Eliminating Transmission in the United States Through Universal Childhood Vaccination. Recommendations of the Immunization Practices Advisory Committee (ACIP) US Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Infectious Diseases, Atlanta, Georgia 30333

BLOOD/BODY FLUID EXPOSURE FOLLOW UP FOR HIV



BLOOD/BODY FLUID EXPOSURE FOLLOW-UP FOR HIV



AIRBORNE EXPOSURE TO TB FOLLOW-UP PROCEDURE

PPD WITHIN 7 DAYS OF EXPOSURE AT HEALTH DEPARTMENT

NEGATIVE PPD

↓

REPEAT PPD IN 12 WEEKS

↓

IF NEGATIVE NO FURTHER FOLLOW UP

↓

IF REACTION GREATER THAN 10MM+ REFER TO HEALTH DEPARTMENT FOR FOLLOW UP PER NC DEPARTMENT OF HEALTH TUBURCULOSIS POLICY.

POSITIVE PPD

↓

REFER EMPLOYEE TO HEALTH DEPARTMENT

XVI. Recordkeeping

A. Health records will be maintained on category 1 and 2 employees. The records will include communicable disease histories, immunization records, and complete exposure records including test results, follow up reports and waivers. These records will be kept for the employee's duration of employment plus thirty years or 40 years from date of exposure, whichever occurs later. All records will be kept in the Personnel Department. Departments will maintain duplicate records to facilitate follow up of reported exposures.

B. Medical records are strictly confidential and will be shared only with health care providers and administrative personnel directly involved in the employee's medical care and follow up.

XVII. Training

A. At the time of employment all employees with category I or category II positions will receive training on exposure control. The Exposure Control Plan will be reviewed. Each employee will satisfactorily demonstrate proper use of barrier precautions during their departmental orientation.

B. The Risk Manager or designated departmental infection control officer will co-ordinate annual training on blood borne pathogens and Tuberculosis. Classes will be offered frequently to provide all employees with an opportunity to attend. Outlines and class objectives are in Appendix I.

XVIII. Compliance Monitoring

A. All county agencies with category I and II workers will perform quarterly compliance monitoring.

B. Compliance monitoring may be either through employee interviews or observations. Each department should develop a methodology, which reasonably accomplishes the goal. A sample instrument is in the appendix.

C. Compliance monitoring methodology must be approved by the Exposure Control Committee.

D. The Risk Manager will maintain records of compliance monitoring provided by cognizant Departments.

IX. Annual Review of Exposure Control Policy

A. The Risk Manager will set up an annual review, during the third quarter of the calendar year, with a representative from Emergency Services. Infection control experts from the Health Department, Sheriff's Office and outside agencies may be invited to participate. This review will require the involvement of non-managerial employees to:
   1. Evaluate technological changes that eliminate or reduce exposures to bloodborne pathogens.
   2. Evaluate potentially safer medical devices designed to eliminate or minimize occupational exposures.

B. Changes will be made and a sign off from the committee members will go into the record.
   1. Revised Exposure Control Plans will be available in electronic and written form to insure wide distribution of the document.
   2. Changes will be covered during continuing education for all affected county personnel.

APPENDIX A

UNIVERSAL PRECAUTIONS

Universal precautions were developed by the Centers for Disease Control (CDC) to limit the transmission of HIV. The concept stresses that **ALL PATIENTS SHOULD BE ASSUMED TO BE INFECTIOUS FOR HIV AND OTHER BLOOD-BORNE PATHOGENS**. Universal precautions should be followed when personnel are exposed to blood, amniotic fluid, pericardial fluid, peritoneal fluid, synovial fluid, cerebrospinal fluid, semen, vaginal secretions, feces, urine, vomitus, sputum, saliva and any other body fluid visibly contaminated with blood.

Exposure means any contact with blood or body fluids (listed above) through percutaneous inoculation (needle stick injury or cut from contaminated material), contact with an open wound, non-intact skin or mucous membrane while on the job.

These are the guidelines of universal precautions.

1. Wash hands between patients. (Waterless hand cleaner is available in each work area where water for hand washing is not present.)

2. Wear gloves when coming into contact with blood or body fluids of any patient.

3. Wash hands immediately after removing gloves. (Waterless hand cleaner is available in the work area.)

4. Wash hands if they become contaminated with blood or other body fluids.

5. Do not recap, bend, cut or break needles, but place them into a puncture-proof container. Containers shall be labeled with a BIOHAZARD tag or symbol. Replace the container when it reaches the maximum fill level. (Containers are in each work area for this purpose.)

6. Wear gowns if soiling of your clothes with blood or body fluids is likely. Water-impermeable aprons are available when heavy soiling is anticipated.

7. Use other protective barriers (e.g., masks, goggles, glasses, bag valve masks, etc.) appropriate for the procedure being performed and the type of exposure anticipated.

8. Put damp or dry linen in regular linen bags. All potentially contaminated linen shall be double bagged in a plastic bags marked with the BIOHAZARD tag or symbol. Used linen should be bagged immediately in the area where it is generated. Handle soiled linen as little as possible. Then put the plastic bags into a regular linen bag and send it to the laundry.

9. Trash is to be bagged and discarded. EMS should discard liquid waste at the hospital.

10. Report any exposure (i.e., needle stick, splash of fluid into mucous membrane, etc.) to your supervisor.

11. Personal protective equipment and resuscitation equipment will be available in all work areas where there use is anticipated.

APPENDIX B

WAIVER FOR HEPATITIS B VACCINE

I understand that due to my occupational exposure to blood and other potentially infectious materials, I may be at risk of acquiring hepatitis-B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis-B vaccine, at no charge to myself. However, I decline hepatitis-B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. In the future, if I continue to have occupational exposure to blood and other potentially infectious materials and I decide to be vaccinated with hepatitis-B vaccine, I can receive the vaccination series at no charge to me.[2]

_____ _____
Signature of Employee Date

_____ _____
Signature of Witness Date

Note: Review Appendix J, Important Information about Hepatitis B and Hepatitis B Vaccine with the employee.

[2]Bloodborne Pathogens 29 CFR 1910.1030 Appendix "A" with Amendments as of September 1, 1994.

APPENDIX C

REPORT OF EXPOSURE

Employee _____

Department _____

Date of Exposure _____ Time of Exposure _____am/pm

Type of exposure: Via what route? (blood, body fluid or secretion)

_____

_____

Describe how the incident occurred. (include activity taking place).

_____

_____

Conditions of exposure: (location, confined space)_____

_____

_____

Name of the source patient_____

Address and telephone number of the patient_____

_____

Receiving hospital of the source patient_____

Preliminary instructions to the employee_____

_____

Follow up protocol followed_____

Names of other potentially exposed people involved in this incident.

Name_____ Home Tel.#_____ Agency _____

Name_____ Home Tel.#_____ Agency _____

Name_____ Home Tel.#_____ Agency _____

Name_____ Home Tel.#_____ Agency _____

APPENDIX D

REQUIRED PERSONAL PROTECTIVE EQUIPMENT FOR WORKER PROTECTION AGAINST HIV AND HBV TRANSMISSION IN PRE-HOSPITAL SETTINGS[3]

TASK OR ACTIVITY	DISPOSABLE			PROTECTIVE EYE WEAR
	GLOVES[B]	GOWN	MASK	
Bleeding control with spurting blood	Yes	Yes	Yes	Yes
Bleeding control with minimal bleeding	Yes	No	No	No
Emergency Childbirth	Yes	Yes	No	Yes[A]
Blood Drawing	Yes	No	No	No
Starting an IV Line	Yes	No	No	No
Placing an Advanced Airway	Yes	No	No[C]	Yes
Suctioning or manually cleaning airway equipment	Yes	No	No	No[C]
Handling/cleaning Equipment with Microbial Contamination	Yes	No[D]	No	No
Taking Blood Pressure	No	No	No	No
Taking a Temperature	No	No	No	No
Giving an Injection	Yes	No	No	No

[A] if splashing is likely.
[B] gloves should be worn under the following conditions: if the health care worker has cuts, scratches or non-intact skin, if the patient is uncooperative, when performing finger or heel sticks on children, and during training.
[C] unless splashing is likely.
[D] unless soiling of clothing is likely during clean up.

Advanced Airway
ET endotracheal
EOA esophageal obturator
LMA laryngeal mask airway
King supraglottic airways
Combitube blind insertion airway device

[3] Guidelines for Prevention of HIV and HBV to Health Care and Public Safety Workers U. S. Department of Health and Human Services, February 1989.

APPENDIX E

WAIVER TO SUBMIT TO FOLLOW-UP PROCEDURES AFTER POSSIBLE EXPOSURE TO INFECTIOUS DISEASE

I, _____, have had explained to me the need for follow-up testing to evaluate my exposure to _____. I understand that the testing is medically indicated.

I have had a chance to ask questions which were answered to my satisfaction and I believe that I understand the risks of my possible exposure and the benefits of follow-up testing.

I understand that no adverse action can be taken on the ground that I refused testing and follow-up since the procedures are designed for my benefit.

I understand that Workers' Compensation **may deny** claims for which initial testing and follow-up were refused.

I choose not to receive any testing or follow-up.

_____
Signature of Employee Date

_____
Signature of Witness Date

Type of exposure:_____

Date of exposure:_____

APPENDIX F

INFORMED CONSENT TO PERFORM TESTS AND TO RECORD TEST RESULTS

Name of Employee
_____

Date _____

Tests to be performed: _____

_____

_____

_____

_____

_____

I, _____, have had explained to me the procedures for performing the above tests. I understand the need for these tests. I have had a chance to ask questions which were answered to my satisfaction.

I understand that the test result(s) will be part of my personnel medical record. I understand that my test results and my medical record are strictly confidential and will be shared only with health care providers, personnel Directors and administration directly involved in my care and follow-up.

I understand the benefits and risks of the test(s). I agree to have the test(s) done and the results recorded in my record.

_____ _____
Signature of Employee Date

_____ _____
Signature of Witness Date

APPENDIX G

GLOSSARY

Acute (disease)	Of short duration, usually with a sudden onset, and sometimes severe.
Antibody	Substance that a person's immune system develops to help fight infection.
Antibody positive	The result of a test or series of tests to detect antibodies in the blood. A positive result means that antibodies are present.
Antigen	Substance that is foreign to the body. An antigen causes the immune system to form antibodies to fight the antigen.
Asymptomatic	Having a disease-causing agent in the body but showing no outward signs of disease.
Asymptomatic HIV Seropositive	The condition of testing positive for HIV antibody without showing any symptoms of disease. A person who is HIV- positive, even without symptoms is capable of transmitting the virus to others.
Body fluids	Fluids that have been listed by the CDC as linked to the transmission of HIV or HBV or to which universal precautions apply. A few examples of these fluids are semen, blood, vaginal secretions, and breast milk.
Carrier	A person who apparently is healthy, but who is infected with some disease-causing organism (such as HIV or HBV) that can be transmitted to another person.
CDC	The Center for Disease Control is a federal health agency that is a branch of the US Department of Health and Human Services. The CDC provides national health and safety guidelines and statistical data on HIV and other diseases.
Chronic (disease)	Lasting a long time, or recurring often.
Decontamination	Removing disease-causing agents, thus making the immediate environment or objects safe to handle.
Diagnosis	Identifying a disease by its signs, symptoms, course, and laboratory findings.
Exposure	The act or condition of coming into contact with, but not necessarily being infected by, a disease-causing agent.
HB_sAB	Hepatitis B surface antibody. Also known as Anti-HB_s. Laboratory test verifying immunity after vaccination.
HB_sAG	Hepatitis B surface antigen. Laboratory test that, when positive, indicates the patient is infectious
HBIG	Hepatitis B immune globulin, which is a preparation that provides some temporary protection following exposure to HBV if given within 7 days after exposure.

HBV	Hepatitis B, a viral infection that affects the liver. The effects of the disease on the liver can range from mild, even unapparent, to severe, to fatal.
Health care worker	An employee including but not limited to nurses, physicians, optometrists, laboratory technicians, phlebotomists, paramedics, emergency medical technicians, medical examiners, housekeepers, laundry workers and others whose work may involve direct contact with body fluids from living or dead individuals.
HIV	Human immunodeficiency virus, the cause of AIDS (advanced HIV).
Immune system	A body system that helps resist disease-causing germs, viruses or other infections.
Incubation period	The time period between infection and appearance of disease symptoms.
Infection	A condition or state of the body in which a disease-causing agent has entered it.
ISG	Immune serum globulin.
Mucous membrane	A moist layer of tissue that lines the mouth, eyes, nostrils, vagina, anus and urethra.
Non-intact skin	Skin that is chapped, abraded, lacerated, weeping or that has rashes or eruptions.
Pathogen	A disease-causing substance.
Percutaneous	Enters the body through the skin, for example, by needle-stick or on non-intact skin.
Rabies	Rabies causes acute encephalitis in all warm-blooded hosts, including humans. Transmission routes include contamination of mucous membranes (i.e. eyes, nose, mouth) and aerosol transmission. The most common transmission is through the bite of an infected host. Rabies is almost always fatal.
Sharps	A term describing anything that can penetrate the skin such as needles, lancets, glass, pipettes, etc.
Tuberculosis (TB)	TB is an airborne communicable disease caused by mycobacterium tuberculosis or the tubercle bacillus. Transmission may occur from inhaling tiny airborne particles expelled by a person who has infectious TB for a period of several hours.
Vaccine	A substance that produces or increases immunity and protection against a particular disease.
Virus	An organism that causes disease.

APPENDIX H

TYPES OF EXPOSURES

Event or Job-Related Task

Possible Blood or Body Fluid Exposure

- Cuts from falls
- Cuts from machinery
- Emptying trash - possible exposure to bloody articles
- Paper cuts
- Cleaning bathrooms - possible exposure to urine, body fluids
- Picking up litter - possible exposure to blood or body fluids
- Handling objects contaminated with blood or body fluids. Examples: swabs for Pap smears
- Cleaning up urine, feces or vomitus
- Drawing blood samples
- Carrying tubes of blood
- Starting IVs at the scene of an accident or in an ambulance
- Performing hemorrhage control
- Suctioning patients who may have blood in their airways
- CPR on trauma patients
- Delivering babies
- Giving SQ injections
- Doing Dextrostix
- Cleaning equipment contaminated with blood or body fluids
- Disposing of contaminated needles
- Sustaining cuts at wreck scenes where surfaces could be contaminated with other people's blood
- Handling dirty linen
- Needle stick injuries
- Touching diaphoretic patients
- Dealing with combative patients who would intentionally throw urine or feces at employee
- Being attacked by patient and scratched or cut
- Working with equipment that was not cleaned properly by another crew
- Splinters from bloody backboards
- Transporting dirty linen from the hospital to the ambulance bases
- Having to wear dirty uniforms until worker can change into a clean one
- Accidental needle sticks sustained while treating a patient, i.e. an unseen needle in the patient's clothing or on the furniture or floor
- Transfer of dirty uniforms to the residence for cleaning
- Employee failure to wear gloves when treating patients
- Tears in gloves
- Poor hand washing techniques
- Lax hand washing, i.e. not washing hands after every patient contact
- Employees working while sick with colds or other minor illnesses
- Failure to use protective equipment like a bag valve mask when resuscitating a patient
- Unknowingly treating HIV or HBV infected patients being transferred from a nursing home or hospital to another facility
- Giving first aid
- Animal bites

Possible Indirect Transmission of Communicable Disease

- Using the telephone
- Handling objects touched by others
- Handling money

Possible Exposure to Airborne Diseases

- Being around sickly or recovering people
- Exposure through droplet spread of infection
- Working closely with others

APPENDIX I

TRAINING OUTLINES

BLOODBORNE PATHOGENS

At the completion of the session or sessions the participant will have knowledge of:

- The OSHA standard for blood borne pathogens.
- Epidemiology and symptomatology of blood borne diseases.
- Modes of transmission of blood borne diseases.
- The Davie County Exposure Control Plan.
- Which procedures might cause exposure to blood or body fluids.
- Universal Precautions and control measures specific for their job.
- Housekeeping practices and decontamination procedures.
- Personal protective equipment and when to wear it.
- Post exposure evaluation and follow up.
- Hazard signs and symbols.
- How to dispose of contaminated waste.
- The Hepatitis vaccination program.

AIRBORNE DISEASES

- The mode of transmission of airborne illnesses.
- The signs and symptoms of Tuberculosis.
- Personal protective devices and engineering controls available to prevent the transmission on TB.
- Medical follow up after exposure to TB.
- The purpose of the annual PPD test.

These outlines meet the minimum training requirements for employees. Individual departments may augment these outlines with additional materials pertinent to their jobs.

APPENDIX J
IMPORTANT INFORMATION ABOUT HEPATITIS B AND HEPATITIS B VACCINE[4]

WHAT IS HEPATITIS B?
Hepatitis B is an infection of the liver caused by the hepatitis B virus (HBV). The term "viral hepatitis" is often used for and may include hepatitis B and other similar diseases which affect the liver but are caused by different viruses.

Acute hepatitis generally begins with mild symptoms that may or may not become severe. These symptoms may include loss of appetite, a vague feeling of oncoming illness, extreme tiredness, nausea, vomiting, stomach pain, dark urine, and jaundice (yellow eyes and skin). Skin rashes and joint pain can also occur.

In the United States about 300,000 persons, mostly young adults, catch Hepatitis B each year. About one-quarter will develop jaundice, and more than 10,000 will need to be hospitalized. About 350-400 people die each year from severe acute hepatitis B. Between 6 and 10 of every 100 young adults who catch hepatitis B become chronic carriers (have HBV in their blood for 6 or more months) and may be able to spread the infection to others for a long period of time. Infants who catch hepatitis B are more likely to become carriers than adults. About one-fourth of these carriers go on to develop a disease called "chronic active hepatitis," Chronic active hepatitis often causes cirrhosis of the liver (liver destruction) and death due to liver failure. In addition, HBV carriers are much more likely than others to get cancer of the liver. An estimated 4,000 persons die from hepatitis B-related cirrhosis each year in the United States and more than 1,000 die from hepatitis b-related liver cancer.

The risk of catching hepatitis is higher in certain groups of people because of their occupation, lifestyle, or environment. Because of the risks of serious problems associated with hepatitis B infection, vaccination to help prevent infections is recommended for these groups.

HEPATITIS B VACCINE:
Hepatitis B vaccine is made two ways. Plasma-derived vaccine is made from portions of HBV particles that have been purified from the blood of carriers. The method used to prepare the plasma-derived hepatitis vaccine kills all types of viruses found in human blood, including the virus that causes Acquired Immunodeficiency Syndrome (AIDS). The recombinant vaccine is made from common baker's yeast cells through genetic engineering. The yeast-derived vaccine does not contain human blood products. The vaccine is given by injection on three separate dates. The first two doses should be given one month apart, and the third dose, 5 months after the second. After three doses, the hepatitis B vaccine is 85%-95% effective in preventing hepatitis B infection in those who received vaccine. The protection for normal adults and children given vaccine properly lasts at least 5 years. Booster doses of vaccine are not routinely recommended at the present time.

WHO SHOULD GET HEPATITIS B VACCINE?
The vaccine is recommended for persons at high risk of catching HBV infection who are or may be unprotected. These groups include:

- **Health care workers**. Health care workers who are exposed to blood or blood products or who may get accidental needle sticks should be vaccinated.
- **Clients and staff of institutions for the mentally retarded**. The special behavioral and medical problems of the retarded make this a high-risk setting. The risk in these institutions is related to contact with blood and also with bites and contact with skin lesions and other body fluids that contain HBV. Clients and staff of group and foster homes where a carrier is known to be a parent should also be vaccinated.
- **Other contacts of HBV carriers.** Vaccine use should be considered in classroom and other day settings where de-institutionalized mentally retarded HBV carriers behave aggressively or have special medical problems that may expose contacts to their blood and body secretions. Teachers and aides have been shown to be at significant risk in these settings. Other persons who have casual contact with carriers at schools and offices are at little risk of catching HBV infection and vaccine is not recommended for them.

[4] Department of Human Resources Immunization Program CDC Reprint - Hepatitis B

- **Hemodialysis patients.** Although the hepatitis B vaccine is less effective in these patients, it should still be offered to all hemodialysis patients.
- **Homosexually active men.**
- **Users of unlawful injectable drugs.** Sharing needles is an extremely high-risk activity for transmitting hepatitis B.
- **Recipients of certain blood products.** Persons such as hemophiliacs who receive certain products to help their blood clot are at high risk of infection.
- **Household and sexual contacts of HBV carriers.** When HBV carriers are identified, household and sexual contacts should be offered vaccine.
- **Special populations from areas with high rates of hepatitis B.** These groups include Alaskan natives, native Pacific islanders, and immigrants and refugees from eastern Asia and sub-Saharan Africa.

VACCINE ALSO SHOULD BE CONSIDERED FOR:

- Long term inmates of prisons. The risks of prisoners catching HBV infection may be due to use of unlawful injectable drugs.
- Heterosexuals who come in for treatment of sexually transmitted diseases and who have histories of sexual activity with multiple sexual partners.
- Persons who plan to travel to areas outside the United States that have high rates of hepatitis B infection, stay in those areas for more than 6 months, and have close contact with the local population; and, persons traveling for shorter duration who may have sexual contact with local persons in areas where HBV infection is common. Persons traveling abroad who will perform medical procedures in areas where HBV infection is common are at very high risk.

ADDITIONAL VACCINES:

Hepatitis B vaccine is also recommended as part of the therapy used to prevent hepatitis B infection after exposure to HBV. Post exposure use of hepatitis B vaccine is recommended for the following persons: (1) infants born to mothers who have a positive blood test for hepatitis B surface antigen (HBsAg); and, (2) persons having accidents involving HBsAg-positive blood where there is entry through the skin or a mucous membrane. In addition, vaccination may be recommended for persons having sexual contact with someone who has a positive blood test for HBsAg. The hepatitis B vaccine series should be started at the same time as other therapy, primarily, treatment with hepatitis B immune globulin (HBIG).

POSSIBLE SIDE EFFECTS FROM THE VACCINE:

The most common side effect is soreness at the site of injection. Other illnesses, such as neurologic reactions, have been reported after vaccine is given but hepatitis B vaccine is not believed to be the cause of these illnesses. As with any drug or vaccine, there is a rare possibility that allergic or more serious reactions or even death could occur. No deaths, however, have been reported in persons who have received this vaccine. Giving hepatitis B vaccine to persons who are already immune or to carriers will not increase the risk of side effects.

PREGNANCY:

No information is available about the safety of the vaccine for unborn babies; however, because the vaccine contains only particles that do not cause hepatitis B infection, there should be no risk. In contrast, if a pregnant woman gets a hepatitis B infection, this may cause severe disease in the mother and chronic infection in the newborn baby. Therefore, pregnant women who are otherwise eligible can be given hepatitis B vaccine.

QUESTIONS:

If you have any questions about hepatitis B or hepatitis B vaccine, please ask us now or call your doctor or health department before you sign this form.

REACTIONS:

If the person who received the vaccine gets sick and visits a doctor, hospital, or clinic during the 4 weeks after receiving the vaccine, please report it.

APPENDIX K

SAMPLE COMPLIANCE MONITORING INSTRUMENT

Department: _____ Date: _____

Number of Observations	Indicator	TFE	%Yes	%No
	Soap dispensers are filled with approved hand washing agent.	95%		
	Soap dispensers are working.	95%		
	Adequate supply of paper towels.	95%		
	Sinks are functional.	95%		
	Floor of ambulance is clean.	95%		
	All surfaces in patient areas are clean.	95%		
	Sharps containers are filled to full line or below.	95%		

Individual departments with category I and II employees should develop job specific compliance monitoring instruments using this model. These instruments must be on file with the Risk Manager. Monitoring will be done quarterly using a combination of employee interviews and direct observations. Quarterly reports are forwarded to the Risk Manager.

APPENDIX L

DAVIE COUNTY POST-EXPOSURE CHECK LIST

Employee Name_____ Social Security Number _____

Department _____ Date of Exposure _____

Source Patient Name _____

Advised of Source Patient's HIV and HB_s AG

_____

HIV TESTING OFFER

..... Offered HIV testing

..... Employee's signed consent for HIV serial testing; at baseline recommended for type of exposure. Tests may be performed at initial exposure, 3 months, 6 months, and/or 12 months as recommended.

..... Employee signed waiver for HIV testing.

HEPATITIS B FOLLOW-UP

..... Employee has completed initial HBV Vaccination Series

..... HB_sAB Titer done on _____.

Immune Status _____

..... If indicated; HBIG given on _____,

ISG given on _____,

or Hepatavax given on _____.

..... HBV vaccine or other treatment declined on _____.

OTHER FOLLOW-UP

..... Employee received counseling appropriate to exposure risks.

..... Employee offered _____

treatment for possible exposure to _____.

..... Employee waived recommended treatment and follow up.

OTHER COMMENTS:

_____

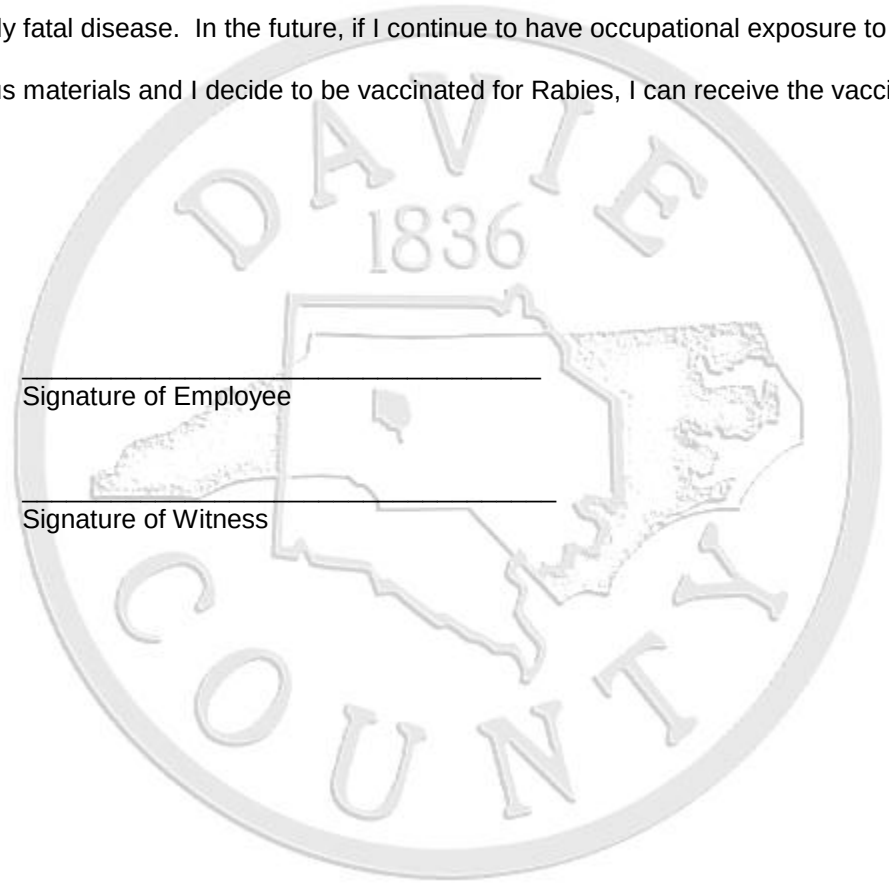
_____

Signature of Designated Infection Control Monitor Following Case

APPENDIX M

WAIVER FOR RABIES VACCINE

I understand that due to my occupational exposure to animals and other potentially infectious materials, I may be at risk of acquiring Rabies. I further understand that once I contract Rabies that it is most always fatal. I have been given the opportunity to be vaccinated to prevent Rabies, at no charge to myself. However, I decline the Rabies vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Rabies, a potentially fatal disease. In the future, if I continue to have occupational exposure to animals and other potentially infectious materials and I decide to be vaccinated for Rabies, I can receive the vaccination series at no charge to me.



_____ _____
Signature of Employee Date

_____ _____
Signature of Witness Date

APPENDIX N

EMERGENCY SERVICES RESPIRATORY PROTECTION PLAN

I. Employees are issued a HEPA mask and carry the mask with them during working hours.

A. Indications for the use of HEPA masks are covered in the Exposure Control Plan and in the Safety Section of the EMS Division Standard Operating Guidelines.
B. These masks are disposable and are replaced after each use.

II. Fit testing for new employees is done during department orientation.

A. Employees learn about the HEPA masks stocked by the county.
B. The trainer will demonstrate how to properly fit and adjust the mask.
C. Qualitative fit testing is utilized to determine if the employee has a tight seal.
D. Documentation is kept on the results of each test and the type and size of the mask suited for each employee.

III. Repeat fit testing is indicated when employees gain or lose a significant amount of weight or when new products are stocked.

IV. Annual Evaluation

A. Existing employees will fill out a respiratory questionnaire annually.
B. The Medical Director will review and sign off on questionnaires.
    1. Employees with satisfactory results do not need further follow up.
    2. Those employees identified as having risk factors for HEPA masks will be referred to the county's nurse practitioner for evaluation.
C. All questionnaires will be maintained in the confidential medical file for employees for the duration of their employment plus thirty years.

VACCINE INFORMATION STATEMENT

Rabies Vaccine

What You Need to Know

Many Vaccine Information Statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

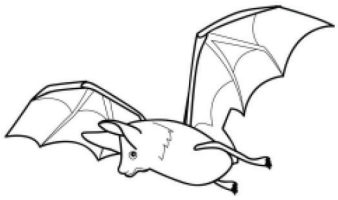
1 What is rabies?

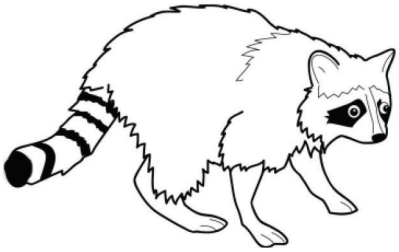
Rabies is a serious disease. It is caused by a virus.

Rabies is mainly a disease of animals. Humans get rabies when they are bitten by infected animals.

At first there might not be any symptoms. But weeks, or even months after a bite, rabies can cause pain, fatigue, headaches, fever, and irritability. These are followed by seizures, hallucinations, and paralysis. Human rabies is almost always fatal.

Wild animals—especially bats—are the most common source of human rabies infection in the United States.





Skunks, raccoons, dogs, cats, coyotes, foxes and other mammals can also transmit the disease.

Human rabies is rare in the United States. There have been only 55 cases diagnosed since 1990.

However, between 16,000 and 39,000 people are vaccinated each year as a precaution after animal bites. Also, rabies is far more common in other parts of the world, with about 40,000–70,000 rabies-related deaths worldwide each year. Bites from unvaccinated dogs cause most of these cases.

Rabies vaccine can prevent rabies.

2 Rabies vaccine

Rabies vaccine is given to people at high risk of rabies to protect them if they are exposed. It can also prevent the disease if it is given to a person after they have been exposed.

Rabies vaccine is made from killed rabies virus. It cannot cause rabies.

3 Who should get rabies vaccine and when?

Preventive vaccination (no exposure)

- People at high risk of exposure to rabies, such as veterinarians, animal handlers, rabies laboratory workers, spelunkers, and rabies biologics production workers should be offered rabies vaccine.
- The vaccine should also be considered for:
  - People whose activities bring them into frequent contact with rabies virus or with possibly rabid animals.
  - International travelers who are likely to come in contact with animals in parts of the world where rabies is common.

The pre-exposure schedule for rabies vaccination is **3 doses**, given at the following times:

Dose 1:	As appropriate
Dose 2:	7 days after Dose 1
Dose 3:	21 days or 28 days after Dose 1

For laboratory workers and others who may be repeatedly exposed to rabies virus, periodic testing for immunity is recommended, and booster doses should be given as needed. (Testing or booster doses are not recommended for travelers.) Ask your doctor for details.

Vaccination after an exposure

Anyone who has been bitten by an animal, or who otherwise may have been exposed to rabies, should clean the wound and see a doctor immediately. The doctor will determine if they need to be vaccinated.

A person who is exposed and has never been vaccinated against rabies should get **4 doses** of rabies vaccine—one dose right away, and additional doses on the 3rd, 7th, and 14th days. They should also get another shot called Rabies Immune Globulin at the same time as the first dose.

A person who has been previously vaccinated should get **2 doses** of rabies vaccine—one right away and another on the 3rd day. Rabies Immune Globulin is not needed.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

4 Tell your doctor if…

Talk with a doctor before getting rabies vaccine if you:

1. ever had a serious (life-threatening) allergic reaction to a previous dose of rabies vaccine, or to any component of the vaccine; tell your doctor if you have any severe allergies,
2. have a weakened immune system because of:
   - HIV/AIDS or another disease that affects the immune system,
   - treatment with drugs that affect the immune system, such as steroids,
   - cancer, or cancer treatment with radiation or drugs.

If you have a minor illnesses, such as a cold, you can be vaccinated. If you are moderately or severely ill, you should probably wait until you recover before getting a routine (non-exposure) dose of rabies vaccine.

If you have been exposed to rabies virus, you should get the vaccine regardless of any other illnesses you may have.

5 What are the risks from rabies vaccine?

A vaccine, like any medicine, is capable of causing serious problems, such as severe allergic reactions. The risk of a vaccine causing serious harm, or death, is extremely small. Serious problems from rabies vaccine are very rare.

Mild problems

- soreness, redness, swelling, or itching where the shot was given (30%–74%)
- headache, nausea, abdominal pain, muscle aches, dizziness (5%–40%)

Moderate problems

- hives, pain in the joints, fever (about 6% of booster doses)

Other nervous system disorders, such as Guillain-Barré syndrome (GBS), have been reported after rabies vaccine, but this happens so rarely that it is not known whether they are related to the vaccine.

NOTE: Several brands of rabies vaccine are available in the United States, and reactions may vary between brands. Your provider can give you more information about a particular brand.

6 What if there is a serious reaction?

What should I look for?

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or behavior changes.

  Signs of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would start a few minutes to a few hours after the vaccination.

What should I do?

- If you think it is a severe allergic reaction or other emergency that can't wait, call 9-1-1 or get the person to the nearest hospital. Otherwise, call your doctor.
- Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor might file this report, or you can do it yourself through the VAERS web site at **www.vaers.hhs.gov**, or by calling **1-800-822-7967**.

VAERS is only for reporting reactions. They do not give medical advice.

7 How can I learn more?

- Ask your doctor.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
  - Visit CDC's rabies website at **www.cdc.gov/rabies/**

BLOOD BORNE PATHOGEN SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Is a copy of the Blood Borne Pathogen Plan available to all employees?			
2. Has the Plan been reviewed/revised within the last 12 months?			
3. Does your department have any new employees? If yes, has Blood Borne Pathogen training (Scavenger Hunt) been provided?			
4. Have employees been classified into risk categories? (Category 1, 2, or 3 in the Blood Borne Pathogen Plan)			
Departments at high risk for BBP exposure (Category 1), please complete the following.			
5. Has appropriate Personal Protective Equipment (PPE) been made available to staff?			
6. Has the Hepatitis B vaccine been offered and administered to all new employees who consented?			
7. Are standard precautions being used by staff?			
8. Is an Incident/Exposure Report form available to employees?			
9. Are managers knowledgeable of the follow-up process for exposures?			
10. For each exposed employee, a confidential medical file including vaccination and incident/exposure reports is maintained?			
Recommendations for Improvement:			

CONFINED SPACES

POLICY

It is the policy of the Davie County to maintain a safe working environment for the employees of the Davie County and to comply with the Occupational Safety and Health Act (OSHA) confined space standards (1910.146).

PURPOSE

The purpose of this document is to describe the guidelines and procedures to be followed by Davie County employees when entering and working in confined spaces. These guidelines and procedures have been designed to eliminate the chance of accidents, injuries and illnesses.

SCOPE OF EMPLOYEE COVERAGE

These procedures and guidelines apply to all full-time, part-time employees who, while performing their jobs, are exposed to or enter confined spaces.

Visitors, vendors, contractors and any other non-employees will not be allowed to enter any confined space owned by Davie County unless all contractual requirements have been met. Contractors will be required to meet all standards outlined in this policy.

RESPONSIBILITIES

It shall be the responsibility of Department Directors to insure that this policy is carried out within their respective departments. Each employee must learn to implement these policies, and must faithfully abide by them. The Director will monitor compliance with this policy. Each department is responsible for identifying confined spaces within that department. A list of these must be maintained and noted during training.

Independent contractors and their employees shall familiarize themselves with this policy and shall comply with it at all times. However, Independent contractors are responsible for the safety of their own employees.

DEFINITIONS

Confined Space:

- is large enough and designed so that a worker can enter and perform work,
- has limited means of entering and exiting,
- is not designed for continuous worker occupancy.

Permit Required Confined Space (Permit Space): confined space that has one or more of the following characteristics:

1. Contains or might contain a hazardous atmosphere
2. Contains materials that may engulf a worker
3. Is built so that a worker could be trapped or asphyxiated
4. Contains any other recognized serious safety or health hazard.

Acceptable Entry Conditions: conditions that must exist in a permit space to allow entry and to ensure workers can safely enter and work within the space.

Attendant: a person assigned to remain on the outside of the confined space and to be in communication with those working inside.

Authorized Entrant: a worker who is authorized by the county to enter a permit space.

Engulfment: the surrounding and capture of a worker by any solid or liquid that can flow into a confined space and that can drown or suffocate the worker. Loose granular material stored in bins and hoppers, such as grain, sand, coal or similar material, can engulf and suffocate a worker.

Entry: the act by which any part of the entrant's body passes through an opening into a permit space.

Entry Permit: the written document that is provided by the Town to allow and control entry into a permit space.

Entry Supervisor: the person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing operations, and for ending entry. This person may also serve as an authorized entrant or as an attendant as long as the person is trained and equipped.

HAZARDOUS CONDITIONS FOUND IN CONFINED SPACES

Hazardous Atmosphere means an atmosphere that may expose workers to the risk of death, illness, injury, or make them unable to escape without help. There are five categories that may cause a hazardous atmosphere:

1) Flammable gas, vapor or mist in excess of 10% of its lower flammable limit (LFL).
2) Airborne combustible dust at a concentration that meets or exceeds its LFL.
3) Atmospheric oxygen concentration below 19.5% or above 23.5%.
4) Hazardous concentrations of substances which have recognized permissible exposure limits.
5) Any other atmospheric condition that is immediately dangerous to life or health (IDLH).

Temperature Extremes: Extremely hot or cold temperatures can present problems for workers. For example, if the space has been steamed, it should be allowed to cool before any entry is made.

Noise: Noise within a confined space can be amplified because of the design and acoustic properties of the space. Excessive noise can not only damage hearing, but can also affect communication, such as causing a shouted warning to not be heard.

Slick/Wet Surfaces: Slips and falls on wet surfaces can cause injury or death to workers. Also, a wet surface will increase the chances for electrical shock where electrical circuits, equipment and tools are used.

Falling Objects: Workers in confined spaces should be mindful of the possibility of falling objects, particularly where there is a topside opening and where work is being done above the worker.

IDENTIFIED CONFINED SPACES

At all **Permit Required Confined Spaces** a sign will be posted reading

"DANGER - PERMIT-REQUIRED CONFINED SPACE,
DO NOT ENTER"

An attendant and is required to enter these spaces with all OSHA (permit required confined space entry) guidelines to be followed. With the requirement of permits to enter Davie County employees must seek approved appropriate contractor.

1. Wet Well at the Solid Waste Facility

2. Wet Wells at all locations in the collection system

At **Potential for Hazard -Notification Required Spaces,** always take an attendant and/or notify a supervisor of work being done in any confined space entry.

At **Non-Permit Confined Spaces**, no permit is required to enter these areas because they do not contain hazards that could cause death or serious physical harm. These are identified as:

1. Water Meter Vaults
2. Stream and Current Monitor Vault at Cooleemee Waste Treatment Plant
3. Valve Pits at Cooleemee Waste Treatment Plant

PROCEDURES

Davie County Employees do not enter any confined spaces that require a permit. Any permit required confined space entry will be contracted out to the appropriate contractor.

Checklist / Permit

A confined space entry checklist/permit will be filled out at the work site **BEFORE** entry is made into a permit-required confined space. The checklist/permit provides a list of actions to be taken prior to entry and establishes requirements for testing, monitoring, safety equipment and rescue. The checklist / permit will be filled out by a member of the entry team.

When work in the confined space is completed, the person who executed the checklist/permit will ensure all personnel and equipment are out of the confined space. Those people will then sign off on the checklist/permit and forward it to the Director.

Testing and Monitoring

Test equipment will be provided by Davie County. Before a worker enters the space, the internal atmosphere will be tested with a calibrated, direct-reading instrument, for the following conditions in this order:

1). Oxygen content

2) Flammable gases and vapors

3) Potential toxic air contaminants

Testing should be done at a distance of approximately 4 feet in the direction of entry and also to each side. Vertical spaces will be tested at the top, middle and bottom. Routine entry will not be permitted if testing indicates the space contains a hazardous atmosphere. **A hazardous atmosphere exists** when

1) Oxygen content is less than 19.5% or greater than 23.5%,

2) Explosive gases are greater than 10% of lower flammable limits, and

3) Toxic gases are greater than 10 PPM.

Levels indicating a hazardous atmospheres must be corrected by cleaning and/or purging/ventilation followed by retesting.

Atmosphere test results will be recorded on the Entry Checklist/Permit. Confined space work areas will be continuously monitored by the attendant while work is in progress using approved monitoring equipment.

Entry Procedures

A. When working in a traffic area, appropriate warning signs and/or barricades shall be placed in accordance with work zone safety policies of the NC Department of Transportation.

B. Forced ventilation will not be required unless hazardous conditions are likely (such as in the vicinity of gasoline stations, gas lines, garbage dumps, oil storage areas, wastewater facilities, etc.). However, all these confined spaces will be tested prior to entry and will be monitored continuously while a person is inside.

C. If the confined space is entered by a ladder, the ladder shall remain in place and shall be securely anchored while workers are inside the confined space.

D. A person entering a confined space shall wear personal protective equipment necessary for the work to be performed. A harness and life line must be worn if the confined space is deeper than five feet. Each authorized entrant will use a chest or full body harness with a retrieval line attached at the center of the person's back near shoulder level, or above the head. The retrieval line will be attached to a mechanical device or fixed point outside the permit space so that rescue can begin as soon as the attendant is aware that rescue is necessary.

E. Smoking is prohibited in and around confined spaces.

F. If at any time while working in the confined space the worker feels any symptom of exposure to an unsafe atmosphere, or becomes aware of a dangerous environment, the worker will report his condition and exit the confined space immediately. If a worker is overcome or loses consciousness in a confined space, every effort will be made to rescue using the attached safety harness from outside the confined space. The attendant will call for help and request immediate assistance from Public Safety by calling 911 or by radioing EMS specifying the exact location of the emergency.

K. A rescue worker will never enter a confined space unless additional assistance is available at the scene of the rescue.

L. Attendants outside of the confined space will never enter the confined space or leave the area or the worker in the confined space unattended without being replaced by another worker. Under no circumstances shall the attendant enter the confined space without appropriate personal protective equipment and other standby workers outside the entrance to the space.

M. Entry into a permit-required space without an attendant is absolutely forbidden.

Emergency Policy

PERMIT-REQUIRED CONFINED SPACES ARE NEVER TO BE ENTERED WITHOUT TESTING THE ATMOSPHERE WITH AN APPROVED GAS DETECTOR. Whenever testing indicates a toxic atmosphere the space will be purged and/or ventilated and then retested. If purging and or ventilating cannot reduce the atmosphere below toxic levels, an emergency condition prevails. When emergency conditions exist, the Department head or his designee will be contacted for written permission to proceed with the entry. Air packs will be worn by personnel and attendants.

Emergency medical personnel with basket stretchers, transport vehicles and other equipment as required will be standing by at the scene prior to entry.

Attendants

A. Attendants will be trained to know the hazards that may be faced during entry.

B. Attendants will be aware of how hazards can affect the behavior of entrants.

C. Attendants will keep track of all workers entering and exiting the confined space.

D. Attendants will remain outside the space while work is being done, until relieved by another attendant.

E. Attendants will communicate with the workers in the permit space to check their condition and to alert them when they need to evacuate.

F. It will be the responsibility of the attendant to summon rescue and other emergency services when needed by calling 911.

G. It will be the duty of the attendant to take action when an unauthorized person approaches or enters a permit space.

Employee Training

All employees will be informed of the Confined Space Plan and Procedures.

All employees required to enter a confined space will be properly trained in identifying and evaluating hazards, the use of personal protective equipment, and rescue procedures.

Training records including the instructor, the content, and a roster of participants will be maintained in each department and a copy will be forwarded to the County Manager's Office for the Master Safety Manual.

Emergency Rescue

In the event of an emergency, Emergency Medical Services will be notified by calling 911.

A retrieval system will be used whenever an authorized rescuer enters a permit required confined space.

If an injured person is exposed to a substance for which a Safety Data Sheet (SDS) is available, the SDS is required to be kept at the work site. The SDS will be made available to the medical facility treating the injured worker.

RESOURCES

NC-OSHA Industry Guide #1, A Guide to Safety in Confined Spaces

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review inspection results for trends and issues and recommend actions to improve if needed.

CONFINED SPACE ENTRY CHECKLIST / PERMIT

Location of Permit Required Confined Space: _____

Purpose for entry: _____

Date, time and duration of planned entry: _____

Authorized Entrants list:	Eligible Attendants list:
_____	_____
_____	_____
_____	_____
_____	_____

Individual(s) in charge:_____

Pre-Entry:

		YES	NO	N/A
1.	Did your survey of the surrounding area show it to be free of hazards such as drifting vapors from tanks, piping or sewers?	____	____	____
2.	Does your knowledge of industrial or other discharges indicate this area is likely to remain free of dangerous air contaminants while occupied?	____	____	____
3.	Are you certified in operation of the gas monitor to be used?	____	____	____
4.	Atmosphere Checks:	Time _____		
		Oxygen _____%		
		Explosive(LFL) _____%		
		Toxic(PPM) _____%		
5.	Source Isolation (No Entry): Pumps or lines blinded, disconnected or blocked	____	____	____
6.	Ventilation ensured: Mechanical ___ Natural ventilation only ___	____	____	____
7.	Atmospheric check after isolation:	Time _____		
	Oxygen should be between 19.5% and 23.5%	Oxygen _____%		
	Explosive gases should be below 10% LFL	Explosive(LFL) _____%		
	Toxic gases (H_2S for example) should be less than 10PPM	Toxic(PPM) _____		

If conditions are in compliance with the above requirements and there is no reason to believe conditions may change adversely, then proceed with the entry. If conditions are not in compliance with the above requirements or there is reason to believe that conditions may change adversely, continue to next page.

Entry Procedures	YES	NO	N/A
1. Notify main office of entry	____	____	____
2. Authorized entrants and attendants have successfully completed required training	____	____	____
3. Equipment:			
Direct reading gas monitor tested	____	____	____
Safety Harness and lifelines for entrants and attendants for spaces > 5 ft deep	____	____	____
Hoisting equipment	____	____	____
Powered communications	____	____	____
SCBA's for entrants and attendants with hazardous atmosphere	____	____	____
Protective clothing	____	____	____
All electrical equipment listed: Class I Division I Group D Non-sparking tools	____	____	____

3. Rescue procedures:
Call 911

_____
_____

We have reviewed the work authorized by this permit and the information contained herein. Instruction and safety procedures are understood. **Entry cannot be approved if any items are marked "NO".** This permit is not valid unless all appropriate items are completed.

Permit completed by:_____

Approved by:_____

This permit is to be kept at job site. Return to main office following job completion.

CONFINED SPACE SAFETY INSPECTION

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Is special training for employees working in confined spaces documented?			
2. Is annual retraining for competent persons provided and documented?			
3. Is confined space tested for toxic gas and explosives before entry?			
4. Is permit-required confined space purged with fresh air before entry?			
5. Are lifelines and harnesses applied before entry in spaces greater than 5 feet deep?			
6. Has entry permit been obtained and documented?			
7. Are any unsafe acts observed? If yes, please explain:			
Recommendations for Improvement:			

TRENCHING AND EXCAVATION SAFETY

PURPOSE

The purpose of this policy is to protect employees from cave-ins and other hazards associated with trenches and holes created by an excavation.

INFORMATION SOURCES

Information for developing this policy was obtained from the federal code of regulations (29CFR Subpart P of 1926.650 - 652, Appendixes A - F). Additional information was gathered from "Trenching 'Competent Person' Workshop Manual"; McCain, Paul P., et.al., Department of Civil Engineering, NC State University; June, 1992 and "Trenching Regulation Basics" Training Manual; Charlotte Department of Transportation; 1992. Two additional sources are the NC-OSHA Industry Guides #14 "Excavations" and #8 "Training".

RESPONSIBILITIES

It is the responsibility of the Department Director to see that the training outlined in this policy is carried out in an effective and timely manner.

The Director must ensure that each person that receives "Competent Person" level training is supervising the work site in an acceptable manner. The Department Head must also be sure that all plans that need approval have been approved by either the Competent Person or a Registered Professional Engineer, depending on the situation.

Some employees within the Public Works and Public Utilities will receive "Competent Person" training. Their responsibilities are to be on site whenever an excavation is occurring and to shut down any operation that they judge to be unsafe. Employees will be expected to follow all of the Competent Persons requests and should never begin, continue or return to work in an excavation unless the Competent Person is present.

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.

Registered Professional Engineer: a person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.

Structural Ramp: a ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock, are not considered structural ramps.

PROCEDURES

The elements of this policy include the following five (5) sections: 1) Training, 2) Access and Egress, 3) Trench Safety, 4) Hazardous Atmospheres, and 5) Cave-in Prevention.

Training

Competent Person training will be provided any employee who is supervising trenching and excavation projects. They will be responsible for maintaining a safe job site during excavations. The project's Registered Professional Engineer can be used in any instances that require such services.

Each member of Public Utilities will receive a training session to include general information contained in the training program developed by the Charlotte Department of Transportation, "Trenching Regulation Basics".

Access and Egress

When a trench is more than four (4) feet deep, a stairway, ladder, ramp or other means of safely getting out must be provided. No employee will have to travel more than 25 feet to get out using one of these items. When a ladder is used, it must extend at least 3 feet above the lip of the hole.

Trench Safety

To enter a trench safely, all underground utilities should be located first. Water, sewer, telephone, power and gas lines are some of these utilities that must be located. The utility companies or owners must locate these items as exact as possible. If they are unable to locate these utilities in a sufficient time period (24 hours), then excavation may begin if proper caution is followed and other acceptable means of locating utilities are used.

Employees that are exposed to any amount of vehicular traffic must wear reflective and highly visible vests. When mobile equipment is being used on site, a warning system, such as barricades or hand signals, will be used to warn equipment operators when they are coming close to the edge of the excavation. No employee will be allowed underneath any loads being handled by digging or lifting equipment.

In situations where employees or equipment must cross over an excavation, walkways or bridges with standard guardrail must be used. All excavations must be protected by barriers so as not to allow anyone near the excavation. After the excavation is complete, the area must be back-filled.

The Competent Person must make routine inspections to ensure the safety of the job. These inspections must occur before the start of work each day, after each rainstorm or extended break from work. Inspections during each shift should be conducted as needed. If the Competent Person finds any dangerous situations, then all employees must get out of the area until the problem is corrected.

Hazardous Atmospheres

When the possibility of contaminants in the atmosphere of the excavation is present, the procedures and requirements of the "Confined Space" section of this safety manual will be followed. The deepest "pocket" of the hole will be tested for hazardous gases. The Competent Person will be constantly monitoring the situation, looking for possible hazardous changes in the atmospheric conditions.

Cave-in Prevention

The Competent person must always be alert to the possibility of a cave-in. Employees will not work in any excavations where there is accumulated water without proper equipment. Shields operation, lifelines, water removal equipment, or other means used to protect from cave-ins due water accumulation must be closely monitored and approved by the Competent Person. Surface water drainage (such as streams), must be diverted from entering the excavation area by using such things as diversion ditches and dikes.

In cases where walls, buildings, and other such structures are affected by excavations, shoring, bracing or underpinning will be used. A Registered Professional Engineer can determine if an excavation is not posing such a danger and does not need any protective measures. Excavations will not undermine sidewalks or pavement unless an acceptable support system to protect the employees from the possible collapse of the structure is used.

When falling rock or debris poses a threat to employees in the trench, protective measures such as barricades must be used to protect the employees. Any excavated material or other equipment must be setback a minimum of two (2) feet from the edge of an excavation.

Sloping, benching, shoring and shielding operations must be used when the depth of the excavation is greater than five feet. To determine the degree of sloping required, the soil is tested and the type determined. Davie County will use "worst case scenario" and label all soil as Type C. Type C soil requires sloping of 1.5:1 or 34. Therefore, all trenches or excavations greater than 5 feet will be sloped at least 7.5 feet on each side of the trench.

Sloping and benching operations will either use acceptable configurations that are outlined in the standard or will be designed by a Registered Professional Engineer. Information that is used in determining which option to use must be kept on the job site. Employees are not allowed to work on a section of the sloped or benched area where other employees are working in a lower area.

Shoring, shielding and other support designs will either be chosen based upon a decision using the regulations, manufacturers' data, or the recommendation of a Registered Professional Engineer. The materials used in these operations must be inspected by the Competent Person and be in good working order. Installation and moving of these systems must meet OSHA guidelines and excavation will not exceed below the devices more than two (2) feet.

EVALUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review inspection results for trends and issues and recommend actions to improve if needed.

TRENCH DESIGN CHECKLIST

Date: ___/___/___ Location: _____ Project: _____

Competent Person: _____

_____

Requirements

The Competent Person must make the decision concerning what activities and precautions will be undertaken in the trenching operation. These precautions will ensure the safety of the employees and will meet all OSHA Regulations, as outlined in 29CFR 1926.650 - 652, Appendixes A - F. This form will serve as documentation and a guide.

1. Depth of Excavation: _____Ft. *(If greater than 5 ft, sloping, shoring, or trench box required)*

4. Hazardous Atmospheres: Y___ N___ *(The lowest point of the trench is tested for gases)*

5. Visual Test(s) Performed: (Circle) Clumps / Fissured / Previously Disturbed Surface Water / Vibration / Other: _____

6. Results of Soil Testing : All soil will be considered Type C requiring 1.5:1 sloping (34).

7. Cave-In Prevention Action: (Circle) Sloping / Benching / Shoring / Trench Box *(Required with depths > 5 ft)*

8. Means of Exit: (Circle) Ladder / Ramp / Harness and Lifeline *(Less than 25 ft of travel required and ladder must be 3 ft above lip of hole)*

9. Special Conditions: (Check) *Each one of these conditions will have special requirements and the Policy and Regulations must be consulted.*

____ Heavy Equipment in Area
____ Buildings and/or Structures Nearby
____ Walkways over Excavation
____ Structural Ramp needed
____ Employees Exposed to Vehicular Traffic

10. The Competent person will make periodic inspections to ensure safety. This inspection is: (Check)

____ Before the Start of Work
____ After a Rainstorm (Weather)
____ After an Extended Break

11. Underground Utilities located: ____ Yes ____No

_____

Trenching/Excavation Safety Inspection
Department Reporting: Public Utilities

Date:		Department:	
Name of Person Completing:			

Item	Yes	No	N/A
1. Are employees that work in and around the excavation site trained and provided with the proper PPE?			
2. Before starting an excavation, were all utilities located, utility companies alerted and obstructions removed?			
3. Do all ladders being used meet OSHA requirements?			
4. Are employees exposed to vehicular traffic provided with reflective vests?			
5. Are employees allowed under loads supported by equipment?			
6. Is mobile equipment prevented from getting near the edge of the excavation?			
7. Are the requirements of the Confined Space Policy, when applicable, being followed?			
8. Is excess surface water being effectively removed or diverted from the excavation area?			
9. Are buildings, sidewalks and other such structures in the area being properly supported?			
10. Are necessary precautions to prevent cave-ins being taken and are the materials they include in good working condition?			
11. Do these precautions include keeping equipment, debris, and material at least two feet from the edge of the excavation?			
12. Are proper devices and designs being used to shore, slope, bench, or shield the trench to prevent a possible cave-in? Are these approved by the Competent Person or a Registered PE?			
Recommendations for improvements:			

CONSTRUCTION SAFETY

PURPOSE

The purpose of this policy is to comply with OSHA regulations and to maintain a safe working environment for the employees involved in construction.

INFORMATION SOURCES

The information in this document is from the Occupational Safety and Health Standards for the Construction Industry (29 CFR Part 1926). Parts of 29 CFR 1910 (General Industry Safety and Health Standards) which are applicable to construction are also used as information sources. Many requirements for construction safety are covered by other sections of this Safety Manual. The information presented in this section will deal solely with items not covered in other sections. Other sections of the Safety Manual are referenced.

ADMINISTRATIVE REQUIREMENTS

Requirements for construction dealing with administrative matters are covered in the Notices and Record keeping Policy of this Safety Manual.

GENERAL SAFETY AND HEALTH

During construction, scrap lumber and debris will be kept clear from work areas, passageways and stairs. Combustible scrap and debris will be removed at regular intervals. Containers will be provided for waste disposal. Garbage that is hazardous or flammable will be in containers with lids.

MEDICAL SERVICES, FIRST AID AND SANITATION

Requirements dealing with medical services, first aid and sanitation are covered in the Facilities Safety and Emergency Response sections of this Safety Manual.

ASBESTOS

The regulations covering asbestos also include tremolite, anthophyllite and actinolite.

Permissible Exposure Limits (PEL): No employee will be exposed to more than .02 fibers per cubic centimeter of air as an eight hour time weighted average (T.W.A.). 1926.58 Appendix A gives the proper methods for determining this.

Excursion Limit: No employee will be exposed to more than 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty minutes.

On work sites where outside employers are working, they must be informed of the work being done with asbestos.

When a T.W.A. or excursion limit is exceeded, a regulated work area must be established and all requirements for working in such an area must be met. When a hazardous environment exists the Safety Coordinator will be contacted.

Monitoring: When work is being done with asbestos, the air will be tested before work begins and then on a daily basis unless workers are equipped with supplied air respirators. Monitoring will be done following the procedures in 1926.58 Appendix A.

Engineering controls which can be used to meet T.W.A. and excursion limits are:

- -local exhaust ventilation with HEPA filter dust collection system
- -general ventilation systems
- -vacuum cleaners equipped with HEPA filters
- -enclose or isolate a process producing asbestos dust
- -use of wet methods
- -prompt disposal of asbestos waste in leak-tight containers.

Respirator protection from contaminated and hazardous atmospheres is covered in the Respiratory Protection section of this Safety Manual.

Protective clothing will be provided when necessary for working with asbestos. The County will provide for the safe laundering of the protective clothing. Contaminated clothing will be transported in sealed impermeable bags or other containers and will be labeled appropriately. Clean change areas with separate storage facilities for protective and street clothing will be provided.

When necessary, the County will provide a lunch area away from the regulated area and also a decontamination area.

Warning signs will be used to mark locations where work is being done with asbestos. The signs will read:

DANGER
ASBESTOS - CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATOR AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA.

Labels will be attached to all products and containers with asbestos including waste containers. The labeling and training will follow the regulations outlined in the Hazard Communications section of this Manual.

Physical examinations will be provided by the County to determine if it is appropriate for an employee to wear respiratory protection and can perform the work. See the Respiratory Protection section of this Manual for details and forms.

HAZARD COMMUNICATION

The policies for Hazard Communication are described in the Hazard Communication section of this Manual including listing of hazardous materials, SDS notebooks and their availability, labeling and training of employees.

PERSONAL PROTECTIVE EQUIPMENT

Hard hats will be worn at all times where there is a possible danger of head injury from impact, falling or flying objects or electrical shock and burns.

Employees will be provided with eye and face protection when machines or operations present potential eye or face injury from physical, chemical or radiation agents.

Safety nets will be provided when work areas are more than 25 feet above the ground or water surface and the use of ladders, scaffolds, catch platforms, temporary floors, safety lines or safety belts is not practical.

FIRE PROTECTION AND PREVENTION

Policies for fire protection and prevention are included in the Emergency / Fire Plan section of this Manual.

SIGNS, SIGNALS AND BARRICADES

Signs will be visible at all times when work is being performed and will be removed or covered promptly when the hazards no longer exist.

Danger signs are used only where there is an immediate hazard.

Caution signs are used to warn against potential hazards or to caution against unsafe practices. All signs used will be OSHA approved.

Accident prevention tags will be used as a temporary means of warning employees of an existing hazard (such as defective tools or equipment).

Signals for traffic directing will be done with flags (at least 18 inches square), sign paddles, or red lights for darkness. Flagmen will be provided with red or orange vests, which will be reflective if worn at night.

Barricades will conform to the American National Standards Institute Manual on Uniform Traffic Control Devices for Streets and Highways.

MATERIALS STORAGE, HANDLING, DISPOSAL

Materials which are stored in tiers (stacked, racked, blocked, interlocked or otherwise) will be secured to prevent sliding, falling or collapse.

Materials will be stored more than 6 feet from any hoist way or inside floor opening and more than 10 feet from any exterior walls that do not extend above the top of the materials.

Aisle and passageways will be kept clear and in good repair.

All scrap lumber, waste material and rubbish will be removed from the immediate work area as the work progresses. Disposal of waste material or debris by burning will comply with local fire regulations. All solvent waste, oily rags and flammable liquids will be kept in fire resistant covered containers until removed from the worksite.

Rigging such as alloy steel chain slings will have a permanently attached durable identification stating size, grade, capacity, and manufacturer. All hooks, rings, oblong links, pear shaped links, coupling links, and other attachments will have a rated capacity at least that of the chain. Job or shop hooks and links or makeshift fasteners are not to be used. All rigging equipment for material handling will be inspected prior to use on each shift. When forming eyes in wire rope, U-bolt clips will be properly spaced and installed.

TOOLS

All hand and power tools furnished by the County or its employees will be maintained in a safe condition. The belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, and chains will be properly guarded on all tools and equipment. All electric power tools will be equipped with proper ground or will be double insulated. All portable circular saws will have guard above the base plate and a guard below the base plate that will automatically and instantly return to the covering position when the saw is withdrawn from the work. The Facilities Safety section of this Safety Manual covers other areas of power hand tools and machine guarding.

WELDING AND CUTTING - See Facilities Safety.

ELECTRICAL/LOCKOUT/ TAGOUT - See Facilities Safety.

FLOOR AND WALL OPENINGS - See Facilities Safety.

SCAFFOLDING

All scaffolding will be erected in agreement with the requirements of the regulations as follows:

1. The footing or anchorage will be sound, rigid and capable of supporting the maximum intended load without settling or displacement.
2. Guardrail and toe board will be installed on all open sides and ends of platforms more than 10 feet above the ground or floor.
3. Scaffolds 4 to 10 feet in height, with a minimum horizontal dimension in either direction of less than 45 inches, will have standard guardrail on all open sided and ends of the platform.
4. Scaffolds will be capable of supporting at least four times their maximum intended load.
5. Scaffold planks will extend over their end supports not less than 6 inches and not more than 12 inches.
6. Manually propelled mobile scaffolds will be erected so that their height is no more than 4 times the minimum base dimension.
7. Casters or wheels on mobile scaffolds will be locked while in use by any person.
8. All two point suspended scaffolds suspended by wire, synthetic, or fiber ropes will be capable of supporting at least 6 times the rated load.
9. All ropes, slings, hangers, platforms, and other supporting parts of two pint suspended scaffolds will be inspected before every installation.
10. All employees on two point suspended scaffolds will be protected by a lifeline and safety belt.

CRANES, DERRICKS, HOISTS, ELEVATORS AND CONVEYORS

1. Employees will follow the manufacturer's specifications and limitations for all cranes and derricks.
2. Rated load capacities, recommended operating speeds, and special hazard warnings will be posted on all equipment and will be visible from the operator's station.
3. Equipment will be inspected by a Competent Person before each use.
4. Thorough annual inspections will be made on hoisting machinery and records of the dates and results of inspection will be maintained by the Facilities Maintenance Director.
5. Accessible areas within the swing radius of the rear rotating superstructure of a crane must be barricaded to prevent an employee from being struck or crushed.
6. Before leaving the crane unattended, the boom will be lowered to the ground level or otherwise securely fastened.
7. Booms which are being assembled or disassembled on the ground, with or without support of the boom harness, will be securely blocked to prevent dropping of the boom and boom sections.
8. Cranes and derricks will be only used to hoist employees on a personnel platform when conventional means are more hazardous or impossible.
9. If a personnel platform is to be used, all safety requirements must be met.
10. A crane or derrick used with a personnel platform will have a boom angle indicator, a device to indicate boom length, and an anti-two blocking device or two block damage prevention feature.
11. Personnel platforms will meet all design criteria and platform specifications required.
12. Before using a personnel platform, a trial lift, inspection and proof testing will be done.
13. All employees will be prohibited from riding on material hoists except for the purpose of inspection and maintenance.
14. Hoist way entrances will be protected by substantial gates or bars.
15. Hoist way doors and gates on personnel hoists will be at least 6 feet 6 inches high and will be provided with mechanical locks that cannot be operated from the landing side and will be accessible only to the person on the car.
16. Overhead protective coverings will be provided on top of hoist cages or platforms.
17. The safe working load of an overhead hoist will be indicated on the hoist and will not be exceeded during

operation.

18. If a conveyor must pass over areas or aisles, guards will be provided to protect employees from falling materials.
19. Conveyors will be equipped with warning signal that can be heard, and it will be sounded immediately before starting the conveyor.
20. When employees are working from an aerial lift, body belts will be worn and a lanyard attached to the boom or the basket.

MOTOR VEHICLES, MECHANIZED EQUIPMENT – See the Facilities Safety section of this manual

EXCAVATIONS - See the Trenching/Excavation section of this Manual.

CONCRETE, CONCRETE FORMS AND SHORING

1. All protruding reinforced steel will be guarded to eliminate the hazard of impalement.
2. Employees will not ride in concrete buckets.
3. When placing or tying reinforcing steel more than 6 feet above adjacent working surface an employee will be protected by a safety belt.
4. Powered, rotating-type concrete trowels that are manually guided will have a control switch that automatically shuts off if the workers hands are removed from the handles.
5. All farm work for cast-in-place concrete will be designed, fabricated erected, supported, braced and maintained so that it will support all loads that may be anticipated without failure.
6. Erected shoring equipment will be inspected immediately before, during and after concrete placement.
7. Forms and shores will be left in place until a supervisor determines that the concrete can support its weight and superimposed loads.
8. Precast concrete wall units, structural framing, and tilt up wall panels will be supported to prevent overturning and collapse until permanent connections are made.
9. Lift slab operations will be designed and planned by a qualified professional engineer or architect. Designs and plans will include prescribed methods of erection.
10. Jacking equipment will have a safety factor of 2.5. The maximum number of manually controlled jacks on one slab will be limited to 14. Jacking operations will be synchronized to insure even and uniform lifting. Only those employees required for jacking and to secure slabs will be permitted under the slab during jacking.
11. A limited access zone will be established when constructing a masonry wall. All masonry walls over 8 feet tall will be braced or supported to prevent collapse.

STEEL ERECTION

Safety nets or safety lines and harnesses will be used whenever the potential fall distance is more than 25 feet. The derrick or erection floor will be solidly planked except for access openings. Planking or decking will be of proper thickness to carry the work load. Planking will be at least two inches thick, full size undressed, and will be laid tight and secured to prevent movement.

A safety railing of 1/2 inch wire rope or equal will be installed approximately 42 inches high around the periphery of all temporary planked or temporary metal decked floors of tiered buildings and other multi-floored structures during structural steel assembly.

Where long span joints or trusses 40 feet or longer are used a center row of bolted bridging will be installed.

Tag lines will be used for controlling loads.

When bolting, riveting, or plumbing up, pneumatic hand tools will be disconnected and pressure lines will be released

before adjustments or repairs are made.

Locking devices will be provided to retain sockets on impact wrenches.

Precautions will be taken to prevent fires when riveting in the vicinity of combustible material,.

On pneumatic riveting hammers, the safety wire on the snap will be not less than number 14 wire, and not less than number 9 on the handle.

During plumbing up, the turnbuckles will be secured to prevent unwinding under stress. The plumbing guys and related equipment will be placed so that employees can reach connection points.

All employees will be provided with safety belts when working on float scaffolds. The planks will overlap the bearing on each end by a minimum of 12 inches. Wire mesh, exterior plywood, or the equivalent will be placed around columns where planks do not fit tightly. All unused openings in floors will be planked over or guarded.

TUNNELS AND SHAFTS

A safe means of access will be provided and maintained to all working areas dealing with underground construction. A check-in and check-out system will be used on the surface to keep an accurate record of each employee location. An emergency evacuation plan will be developed and made known to the employees. A competent person will be present at all times who will be familiar with all requirements in the sections concerning underground construction.

DEMOLITION

1. When there is a danger of falling through wall openings, the openings will be protected to a height of 42 inches.
2. If debris is dropped through holes in the floor without chutes, the area onto which the material is dropped will be completely enclosed with barricades at least 42 inches high and at least 6 feet back from the projected edge of the opening above.
3. All floor openings not used as material drops, will be securely covered and capable of supporting any load which may be imposed.
4. All stairs, passageways, ladders and incidental equipment will be periodically inspected and maintained in a clean, safe condition.
5. Any area where material is dropped outside the exterior walls of the structure will be effectively protected.
6. When floor arches have been removed, planking will be provided according to the standards in 1926.855(b) before workers can begin raising the steel framing.
7. Inspections will be made by a competent person as work progresses to detect hazards from weakened or deteriorated floors, walls or loosened materials.

BLASTING AND EXPLOSIVES

Only authorized and qualified persons will be permitted to handle explosives. No smoking, firearms, matches, open flame lamps and other fires, flames or heat producing devices and sparks will be prohibited in or near explosive magazines and while explosives are being handled, transported, or used.

All explosives will be accounted for at all times. An inventory and use record will be maintained. All explosives not in use will be kept in a locked magazine. Precautions will be taken to prevent accidental discharge of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent power lines, dust storms and other sources of extraneous electricity. All blasters will meet the specifications set forth in the standard 1926.901.

Every vehicle or conveyance used for transporting explosives will be marked on both sides, front, and rear with placards reading "EXPLOSIVES" of the proper size and color. These vehicles will be attended to at all times.

Explosives and related materials will be stored in approved facilities as required by the Internal Revenue Service Regulations 26 CFR 181, Commerce in Explosives. All blasting caps, electric blasting caps, detonating primers and primed cartridges will be stored in separate magazines from explosives or blasting agents. Tamping will be done only with wood rods or plastic tamping poles without exposed metal parts except for non-sparking metal connections of jointed poles. The "drop fuse" method of dropping or pushing a primer or any explosive with a lighted fuse attached is forbidden. A loud warning signal will be given by the blaster in charge before the blast is fired.

POWER TRANSMISSION AND DISTRIBUTION

1. All electric equipment and lines will be considered energized until determined to be de-energized by test or other appropriate means.
2. Employees will be provided training and will be knowledgeable and proficient in procedures involving emergency situations and first aid fundamentals including resuscitation.
3. Rubber protective equipment will meet the requirements of the American National Standards Institute J6 series.
4. Protective hats will meet the requirements of ANSI 284.2-1971. Industrial Protective Helmets for Electrical Workers, Class B will be provided and worn at the job site.
5. Aerial lift trucks working near energized lines or equipment will be grounded or barricaded and considered as energized equipment or the lift truck will be insulated for the work being performed.
6. Tag lines or other suitable devices will be used to control loads being handled by hoisting equipment where hazards to employees exist.
7. When attaching grounds, the ground end will be attached first and the other end attached and removed using insulated tools or other suitable devices.
8. When working on buried cable or a cable in manholes, metallic sheath continuity will be maintained by bonding across the opening or by equivalent means.
9. The requirements of 1926.959(a) and (b) will be complied with for all lineman body belts, safety straps, and lanyards.

ROLLOVER PROTECTIVE STRUCTURES (ROPS)

All rubber tired, self-propelled scrapers, rubber tired front end loaders, wheel type agricultural and industrial tractors, crawler tractors, crawler type loaders, and motor graders (with or without attachments) will be equipped with rollover protective structures. These vehicles will meet minimum performance criteria detailed in 1926.1001 and 1926.1002.

STAIRWAYS AND LADDERS - See the Facilities Safety section of this manual under Walking and Working Surfaces.

WORK ZONE SAFETY

All Public Utilities employees will be trained in work zone safety procedures using the Work Zone Safety for Municipalities, Utilities and Contractors course prepared by the North Carolina Institute for Transportation Research and Education (ITRE). Each employee will be trained to an awareness level and will be able to demonstrate competency. Training will be documented and maintained in the Public Works Office.

All information used in training will follow the Manual on Uniform Traffic Control Devices (MUTCD) Part VI by the U.S. Department of Transportation Federal Highway Administration.

A competent person will inspect the work zones at least twice a day for conformance. Work zones will be set up from a traffic control plan and will be designed to minimize traffic disruptions and will be removed in a timely manner. Flaggers will be properly instructed and signage will be in compliance with regulations.

EVAUATION OF PLAN

An inspection to evaluate the implementation of this plan will be conducted in each department annually. Results will be reported to the Safety Committee and to the Department Directors when an area for improvement is identified.

The Safety Committee will review inspection results for trends and issues and recommend actions to improve if needed.

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General Industry Digest

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Occupational Safety and Health Act of 1970
"To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the states in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health."

This publication provides a general overview of standards-related topics. This publication does not alter or determine compliance responsibilities which are set forth in OSHA standards, and the *Occupational Safety and Health Act.* Moreover, because interpretations and enforcement policy may change over time, for additional guidance on OSHA compliance requirements, the reader should consult current administrative interpretations and decisions by the Occupational Safety and Health Review Commission and the courts.

This information will be made available to sensory-impaired individuals upon request. Voice phone: (202) 693-1999; teletypewriter (TTY) number: 1-877-889-5627.

General Industry Digest

U.S. Department of Labor

Occupational Safety and Health Administration

OSHA 2201-09R
2014

U.S. Department of Labor

Foreword

The summary of General Industry safety and health standards contained in this booklet are to aid employers, supervisors, workers, health and safety committee members, and safety and health personnel in their efforts toward achieving compliance with OSHA standards in the workplace.

Although this digest does not contain a summary of all the General Industry safety and health standards, the ones presented here are the standards most frequently cited, and which cover particularly hazardous situations. The standards are grouped by subject matter, followed by the reference to the appropriate standard. With few exceptions, the standards in this digest are from Title 29 of the Code of Federal Regulations (CFR), Part 1910.

Glossary

ANSI American National Standards Institute
ASME American Society of Mechanical Engineers
SDS Safety Data Sheets
ppb parts per billion
ppm parts per million
PPE Personal Protective Equipment
PEL Permissible Exposure Limit
SECAL Separate Engineering Control Air Limit
STEL Short-term Exposure Limit
TWA Time-weighted Average
TSD Treatment, Storage, and Disposal
VPP Voluntary Protection Programs

This booklet is only a digest of basic applicable standards. It should in no way be considered a substitute for any provisions of the *Occupational Safety and Health Act of 1970*, or for any standards promulgated under the Act. The requirements contained herein have been summarized and are abbreviated. The appropriate source standards are noted at the end of each paragraph; the CFR should be consulted for a more complete explanation of the specific standards listed.

Contents

Injury and Illness Prevention Programs

An *injury and illness prevention program,*[1] is a proactive process to help employers find and fix workplace hazards before workers are hurt. We know these programs can be effective at reducing injuries, illnesses, and fatalities. Many workplaces have already adopted such approaches, for example as part of OSHA's cooperative programs — such as the Voluntary Protection Programs. Not only do these employers experience dramatic decreases in workplace injuries, but they often report a transformed workplace culture that can lead to higher productivity and quality, reduced turnover, reduced costs, and greater employee satisfaction.

Based on the positive experience of employers with existing programs, OSHA believes that injury and illness prevention programs provide the foundation for breakthrough changes in the way employers identify and control hazards, leading to a significantly improved workplace health and safety environment. Adoption of an injury and illness prevention program will result in workers suffering fewer injuries, illnesses and fatalities. In addition, employers will improve their compliance with existing regulations, and will experience many of the financial benefits of a safer and healthier workplace cited in published studies and reports by individual companies, including significant reductions in workers' compensation premiums.

Thirty-four states and many nations around the world already require or encourage employers to implement such programs. The key elements common to all of these programs are management leadership, worker participation, hazard identification and assessment, hazard prevention and control, education and training, and program evaluation and improvement.

[1]The occupational safety and health community uses various names to describe systematic approaches to reducing injuries and illnesses in the workplace. Consensus and international standards use the term Occupational Health and Safety Management Systems; OSHA currently uses the term Injury and Illness Prevention Programs and others use Safety and Health Programs to describe these types of systems. Regardless of the title, they all systematically address workplace safety and health hazards on an ongoing basis to reduce the extent and severity of work-related injuries and illnesses.

Most successful injury and illness prevention programs include a similar set of commonsense elements that focus on finding hazards in the workplace and developing a plan for preventing and controlling those hazards. Each of these key elements are important in ensuring the success of the overall program, and the elements are interrelated and interdependent. In other words, they must be used together to create a system of prevention and control. The elements recommended by OSHA are:

- **Management Leadership:** Management demonstrates their commitment to improve safety and health, establishes goals and objectives, and provides adequate resources and support.
- **Employee Participation:** Management actively involves employees in the program — for example, identifying and reporting hazards and investigating incidents. Employees are encouraged to communicate openly with management and report safety and health concerns.
- **Hazard Identification and Assessment:** Processes and procedures are put in place to continually identify and assess workplace hazards and evaluate risks.
- **Hazard Prevention and Control:** Processes and procedures are created and implemented to control workplace hazards.
- **Education and Training:** All workers are provided with education or training to carry out their part under the program. In addition, all workers are trained in a language and manner they can understand to recognize workplace hazards and trained in the control measures needed to protect themselves and other workers from these hazards.
- **Program Evaluation and Improvement:** Processes are established to monitor the program performance, verify implementation, and identify deficiencies and opportunities for improvement. Employers take necessary actions to improve the program.

Several government agencies and consensus standards organizations have guidance for injury and illness prevention programs. OSHA issued voluntary safety and health program management guidelines in 1989 that encourage the systematic identification, evaluation, and prevention or control of general

workplace hazards and the hazards of specific jobs and tasks. More recently, the American National Standards Institute (ANSI) issued ANSI Z10-2005, *Occupational Health and Safety Management Systems*. This voluntary consensus standard provides critical management system requirements and guidelines for improvement of occupational health and safety. The British Standards Institution also recently issued OHSAS 18001, an *Occupational Health and Safety Assessment Series* for health and safety management systems. OHSAS 18001 is an international occupational health and safety management system specification intended to help organizations control occupational health and safety risks.

Further information on injury and illness prevention programs can be found on OSHA's website at www.osha.gov/dsg/topics/safetyhealth.

Top 10 Most Frequently Cited Standards

Federal OSHA maintains a list of the top 10 most frequently cited standards following inspections of worksites to alert employers, so they can take steps to find and fix recognized hazards before preventable injuries and illnesses occur. For fiscal year 2013, the most frequently cited standards include:

1. 1926.501 Fall Protection (Construction)
2. 1910.1200 Hazard Communication (p. 59)
3. 1926.451 Scaffolding (Construction)
4. 1910.134 Respiratory Protection (p. 67)
5. 1910.305 Electrical, Wiring Methods (p. 93)
6. 1910.178 Powered Industrial Trucks (p. 77)
7. 1926.1053 Ladders (Construction)
8. 1910.147 Lockout/Tagout (p. 29)
9. 1910.303 Electrical, General Requirements (p. 92)
10. 1910.212 Machine Guarding (p. 78)

For more information about commonly cited standards, visit: www.osha.gov/dcsp/compliance_assistance/frequent_standards.html.

More information about OSHA standards for Construction is available in the Construction Industry Digest, at www.osha.gov/Publications/osha2202.html.

General Industry Standards

General Duty Clause (Pub. Law 91-596 Section 5(a)(1))

Hazardous conditions or practices not covered in an OSHA standard may be covered under Section 5(a)(1) of the *Occupational Safety and Health Act* (OSH Act), which states: "Each employer must 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."

Fatality, Injury and Illness Information

Recording and Reporting Occupational Fatalities, Injuries and Illnesses

As of January 1, 2015, employers must notify the Occupational Safety and Health Administration (OSHA) within 8 hours of a workplace fatality or within 24 hours of any work-related inpatient hospitalization, amputation or loss of an eye. This includes fatalities that occur during work, as a result of a work-related heart attack.

The report of such incidents must be given orally (via telephone or in person) to the OSHA Area Office (or State Plan Office) that is nearest to the site of the incident **(§1904.39(a))**. Employers may also use OSHA's toll-free telephone number, 1-800-321-OSHA (6742) when reporting work-related incidents. Please note that some State Plans have fatality/catastrophe reporting requirements that may be more stringent than the Federal requirements stated above.

Employers with more than ten employees and whose establishments are not classified as a partially exempt industry must report serious work-related injuries and illnesses using OSHA Forms 300, 300A and 301 (**§1904)**. OSHA Forms 300, 300A and 301 are available at www.osha.gov/recordkeeping/RKforms.html.

Employers who are required to keep Form 300, the Injury and Illness log, must post Form 300A, the Summary of Work-Related Injuries and Illnesses, in the workplace every year from February 1 to April 30 **(§1904.32(b)(6))**. Current and former employees, or their representatives, have the right to access injury and illness records **(§1904.35(b)(2))**. Employers must give the requester a copy of the relevant record(s) by the end of the next business day **(§1904.35(b)(2))**.

Partially exempt industries include establishments in specific low hazard retail, service, finance, insurance or real estate industries and are listed in Appendix A to Subpart B **(§1904.2(a)(1)).** The list is also available online at www.osha.gov/recordkeeping/ppt1/RK1exempttable.html.

Walking-Working Surfaces

Aisles and Passageways

Where mechanical handling equipment is used, sufficient safe clearances must be allowed for aisles, at loading docks, through doorways, and wherever turns or passage must be made. Aisles and passageways must be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard **(§1910.22(b)(1) and §1910.176(a))**.

Permanent aisles and passageways must be appropriately marked **(§1910.22(b)(2) and §1910.176(a))**.

Covers and/or guardrails must be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc. **(§1910.22(c))**.

Dockboards

Dockboards must be strong enough to carry the load imposed on them **(§1910.30(a)(1))**.

Portable dockboards must be secured in position, either by being anchored or equipped with devices that will prevent their slipping (movement) when in use **(§1910.30(a)(2))**.

Floors, General Conditions

All places of employment, passageways, storerooms, and service rooms must be kept clean and orderly and in a sanitary condition **(§1910.22(a)(1))**.

The floor of every workroom must be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage must be maintained, and false floors, platforms, mats, or other dry standing places should be provided where practicable **(§1910.22(a)(2))**.

To facilitate cleaning, every floor, working place, and passageway must be kept free from protruding nails, splinters, holes, or loose boards **(§1910.22(a)(3))**.

Floor Loading Limit

In every building or other structure, or part thereof, used for mercantile, business, industrial, or storage purposes, the loads approved by the building official must be marked on plates of approved design that must be supplied and securely affixed by the owner of the building, or his duly authorized agent, in a conspicuous place in each space to which they relate. Such plates must not be removed or defaced but, if lost, removed, or defaced, must be replaced by the owner or his agent **(§1910.22(d)(1))**.

Guarding Openings and Holes

Every stairway and ladderway floor opening must be guarded by standard railings with standard toeboards on all exposed sides except at the entrance. For infrequently used stairways, the guard may consist of a hinged cover and removable standard railings. The entrance to ladderway openings must be guarded to prevent a person from walking directly into the opening **(§§1910.23(a)(1) and (a)(2))**.

Every hatchway and chute floor opening must be guarded by a hinged floor opening cover equipped with standard railings that leave only one exposed side or a removable railing with toeboard on not more than two sides and a fixed standard railing with toeboards on all other exposed sides **(§1910.23(a)(3))**.

Every floor hole into which persons can accidentally walk must be guarded by either a standard railing with standard toeboard on all exposed sides, or a floor hole cover that should be hinged in place. While the cover is not in place, the floor hole must be attended or must be protected by a removable standard railing **(§1910.23(a)(8))**.

Every open-sided floor, platform or runway that is 4 feet (1.2 meters) or more above adjacent floor or ground level must be guarded by a standard railing with toeboard on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder. Runways not less than 18 inches (45 centimeters) wide used exclusively for special purposes may have the railing on one side omitted where operating conditions necessitate **(§§1910.23(c)(1) and (c)(2))**.

Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment must be guarded with a standard railing and toeboard **(§1910.23(c)(3))**.

Housekeeping

All places of employment, passageways, storerooms, and service rooms must be kept clean and orderly and in a sanitary condition. The floor of every workroom shall be maintained in a clean and, so far as possible, dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats or other dry standing places should be provided where practicable or appropriate waterproof footgear shall be provided **(§§1910.22(a)(1), (a)(2) and §1910.141(a)(3))**.

Fixed Ladders

All rungs must have a minimum diameter of 3/4 inch (1.8 centimeters), if metal, or 1 1/8 inches (2.8 centimeters), if wood. They must be a minimum of 16 inches (40 centimeters) wide and should be spaced uniformly no more than 12 inches (30 centimeters) apart **(§§1910.27(b)(1)(i) through (iii))**.

Further, rungs, cleats, and steps of individual rung ladders must be designed so that workers' feet cannot slide off their end. All ladders must be free of splinters, sharp edges, burrs, or projections which may be a hazard **(§§1910.27(b)(1)(iv) and (b)(1)(v))**.

Cages, wells, or ladder safety devices must be provided on all fixed ladders more than 20 feet (6 meters) long to a maximum unbroken length of 30 feet. A landing platform must be provided for each 30 feet (9 meters) of length. Where no cage is provided, landing platform intervals must be reduced to a maximum of 20 feet (6 meters) **(§§1910.27(d)(1), (d)(2), and (d)(5))**. Cages on fixed ladders must extend 42 inches (1 meter) above the top of the landing, unless other acceptable protection is provided, and the bottom of the cage must be not less than 7 feet (2.1 meters) nor more than 8 feet (2.4 meters) above the base of the ladder, with the bottom flared not less than 4 inches, or the portion of the cage opposite the ladder must be carried to the base **(§§1910.27(d)(1)(iii) and (iv))**.

The side rails of through- or side-step ladder extensions must extend 3 1/2 feet (1 meter) above parapets and landings. For through-ladder extensions, the rungs must be omitted from the extension and must have not less than 18 inches (45.7 centimeters) nor more than 24 inches (61 centimeters) clearance between rails. For side-step or offset fixed ladder sections, at landings, the side rails and rungs must be carried to the next regular rung beyond or above the 3 1/2 feet (1 meter) minimum **(§1910.27(d)(3))**.

Portable Ladders

Stepladders must be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in an open position. The spreader must have all sharp points covered or removed to protect the user **(§1910.25(c)(2)(i)(f) and §1910.26(a)(3)(viii))**.

Ladders must be inspected frequently and those that have developed defects must be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use" **(§1910.25(d)(1)(x) and §1910.26(c)(2)(vii))**.

Non-self-supporting ladders must be erected on a sound base with the base of the ladder a distance from the wall or upper support equal to one quarter the length of the ladder and placed to prevent slipping. Where the potential exists for slipping, the ladder must be lashed, or held in position. Ladders must not be used in a horizontal position as platforms, runways, or scaffolds **(§§1910.25(d)(2)(i) through (iii) and §§1910.26(c)(3)(i) and (iii))**.

The top of a ladder used to gain access to a roof must extend at least 3 feet (0.9 meters) above the point of contact (support), at eave, gutter, or roofline **(§1910.25(d)(2)(xv))**.

Portable ladders must have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts **(§1910.333(c)(7))**.

Railings

A standard railing must consist of a top rail, intermediate rail, and posts, and must have a vertical height of 42 inches (1.05 meters) from the upper surface of the top rail to the floor, platform, runway, or ramp level. The top rail must be smooth-surfaced throughout the length of the railing. The intermediate rail must be approximately halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails must not overhang the terminal posts except where such overhang does not constitute a projection hazard **(§1910.23(e)(1))**.

A railing for open-sided floors, platforms, and runways must have a toeboard whenever persons can pass beneath the open sides, there is moving machinery, or there is equipment with which falling materials could cause a hazard **(§1910.23(c)(1))**.

Railings must be of such construction that the complete structure must be capable of withstanding a load of at least 200 pounds (90 kilograms) applied in any direction at any point on the top rail **(§1910.23(e)(3)(iv))**.

A stair railing must be of construction similar to a standard railing, but the vertical height must be no more than 34 inches (85 centimeters) nor less than 30 inches (75 centimeters) from the upper surface of the top rail to the surface of tread in line with the face of the riser at the forward edge of the tread **(§1910.23(e)(2))**.

Toeboards

Railings protecting floor openings, platforms, and scaffolds must be equipped with toeboards whenever persons can pass beneath the open side, wherever there is moving machinery, or wherever there is equipment with which falling material could cause a hazard **(§1910.23(c)(1))**.

A standard toeboard must be at least 4 inches (10 centimeters) in height and may be of any substantial material, either solid or open, with openings not to exceed 1 inch (2.5 centimeters) in greatest dimension **(§1910.23(e)(4))**.

Scaffolds

All scaffolds and their components must be capable of supporting, without failure, at least four times the maximum intended load **(§1910.28(a)(4))**.

All planking must be Scaffold Grade, as recognized by grading rules for the species of wood used. The maximum permissible spans for 2-inch (5 centimeters) x 9-inch (22.5 centimeters) or wider planks are shown in the following table:

	Material				
	Full Thickness Undressed Lumber			Nominal Thickness Lumber	
Working Load (p.s.f.)	25	50	75	25	50
Permissible Span (ft.)	10	8	6	8	9

The maximum permissible span for 1 1/4-inch (3.12 centimeters) x 9-inch (22.5 centimeters) or wider plank for full thickness is 4 feet (1.2 meters), with medium loading of 50 pounds (22.5 kilograms) per square foot **(§1910.28(a)(9))**.

Scaffold planks must extend over their end supports not less than 6 inches (15 centimeters) nor more than 18 inches (45 centimeters) **(§1910.28(a)(13))**.

Scaffold planking must be overlapped a minimum of 12 inches (30 centimeters) or secured from movement **(§1910.28(a)(11))**.

Skylights

Every skylight floor opening and hole must be guarded by a standard skylight screen or a fixed standard railing on all exposed sides **(§1910.23(a)(4))**.

Fixed Industrial Stairs

Every flight of stairs having four or more risers must be provided with a standard railing on all open sides. Handrails must be provided on at least one side of closed stairways, preferably on the right side descending. Where stairways have one side open, at least one stair railing must be provided on the open side, and where both sides of the stairwell are open, one stair railing on each side must be installed **(§1910.23(d)(1) and §1910.24(h))**. Stairs must be constructed so that the riser height and tread width are uniform throughout **(§1910.24(f))**. In addition, fixed stairways must have a minimum width of 22 inches (55.9 centimeters) **(§1910.24(d))**.

Fixed stairways must be provided for access from one structure level to another where operations necessitate regular travel between levels, and for access to operating platforms at any equipment which requires attention routinely during operations. Fixed stairs must also be provided where access to elevations is daily or at each shift where such work may expose employees to acids, caustics, gases or other harmful substances, or for which purposes the carrying of tools or equipment by hand is normally required. Spiral stairways must not be permitted except for special limited usage and secondary access situations where it is not practical to provide a conventional stairway. Winding stairways may be installed on tanks and similar round structures where the diameter of the structure is not less than 5 feet (1.5 meters) **(§1910.24(b))**.

Means of Egress

Emergency Action Plans

Wherever any given OSHA standard requires an emergency action plan to ensure employee safety in the event of fire and other emergencies, such action plan must be prepared in writing, kept in the workplace, and reviewed with affected employees. However, employers with 10 or fewer employees may communicate the plan orally to employees. The plan must include the following elements: escape procedures and routes, critical plant operations, employee accounting following an emergency evacuation, rescue and medical duties, means of reporting emergencies, and persons to be contacted for information or clarification (**§1910.38**).

Exits

Every building designed for human occupancy must be provided with exit routes sufficient to permit the prompt escape of occupants in case of emergency **(§1910.36(b))**. **An exit door must be unlocked (§1910.36(d))**.

In hazardous areas, or where employees may be endangered by the blocking of any single means of egress due to fire or smoke, there must be at least two means of egress that are remote from each other **(§§1910.36(b)(1) and (b)(2))**.

Exits and the way of approach and travel from exits must be maintained so that they are unobstructed and are accessible at all times **(§1910.37(a)(3))**. In addition, employees must be able to open exit doors from the inside at all times without keys, tools, or special knowledge **(§1910.36(d))**. All exits must discharge directly to the street or other open space that gives safe access to a public way **(§1910.36(c)(1))**.

Exit doors serving more than 50 people, or at high-hazard areas, must swing in the direction of exit travel **(§1910.36(e)(2))**.

Exits must be marked by readily visible, suitably illuminated exit signs. Exit signs must be distinctive in color and provide contrast with surroundings. The word "EXIT" must be in plainly legible letters, not less than 6 inches (15 centimeters) high **(§1910.37)**.

The capacity of exit routes must be sufficient to handle the occupant load and meet the minimum height (7.5 feet (2.3 m)) and width (28 inches (71.1 cm)) requirements. Any projections from the ceiling must not reach a point of less than 6.66 feet (2.0 m) from the floor **(§§1910.36(f) and (g))**. Any door, passage, or stairway that is neither an exit nor a way of exit access and that is so located or arranged as to be likely to be mistaken for an exit must be identified by a sign reading "Not an Exit" or similar designation **(§1910.37(b)(5))**.

An employer demonstrating compliance with the exit-route provisions of NFPA 101, Life Safety Code, 2009 edition, or the exit-route provisions of the International Fire Code, 2009 edition, would be deemed in compliance with the corresponding requirements in **§§1910.34, 1910.36, and 1910.37 (§1910.35)**.

Occupational Health and Environmental Controls

Nonionizing Radiation (Electromagnetic Radiation)

Nonionizing radiation (electromagnetic radiation) applies to all radiations originating from radio stations, radar equipment, and other possible sources of electromagnetic radiation such as those used for communication, radio navigation, and industrial and scientific purposes **(§§1910.97(a)(1)(i) and (a)(4))**.

For normal environmental conditions and for incident electromagnetic energy of frequencies from 10 MHz to 100 GHz, employers must ensure that the radiation level not exceed 10 mW/cm^2 (milliwatt per square centimeter) as averaged over any possible 0.1-hour period without careful consideration of the reasons for doing so. A radiation level of 10 mW/cm^2 (milliwatt per square centimeter) as averaged over any possible 0.1-hour period means that there exists a power density of 10 mW/cm^2 for periods of 0.1-hour or more, and an energy density of 1 mW-hr./cm^2 (milliwatt hour per square centimeter) during any 0.1-hour period **(§1910.97(a)(2)(i))**.

It is important for employers to be responsible for and implement proper controls to prevent any employee from being exposed to electromagnetic radiation in excess of the acceptable limits, as it has been shown that some parts of the human body (e.g., eyes, testicles) may be harmed if exposed to incident radiation levels significantly in excess of the recommended levels **(§1910.97(a)(2)(ii))**.

Each electromagnetic radiation area must be conspicuously posted with appropriate signs and/or barriers **(§1910.97(a)(3))**.

Noise Exposure

When **workers are exposed to a time-weighted average noise level of 85 dBA** or higher over an 8-hour work shift, employers must implement a Hearing Conservation Program. Hearing Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training, and conduct evaluations of the adequacy of the hearing protectors in use **(§§1910.95(c) and (d)(1))**.

When workers are exposed to sound levels exceeding those shown in Table G-16 (below), employers must use feasible engineering and/or administrative controls to protect workers. When engineering or administrative controls fail to reduce the noise level to within the levels in Table G-16, personal protective equipment must be provided and used to reduce the noise to an acceptable level **(§§1910.95(a) and (b)(1))**.

The employer must make available to affected employees or their representatives copies of this standard, as well as post a copy in the workplace **(§1910.95)(l)(1))**.

Table G-16 – Permissible Noise Exposure[2]
(§1910.95(b)(2))

Duration per day, hours	Sound level dBA slow response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

[2] When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: C(1)/T(1) + C(2)/T(2) C(n)/T(n) exceeds unity, then, the mixed exposure should be considered to exceed the limit value (Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level). Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

Local/Exhaust Ventilation

Blast-cleaning enclosures must be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure during blasting operations. The rate of exhaust must be sufficient to provide prompt clearance of the dust-laden air within the enclosure after the cessation of blasting. All air inlets and access openings must be baffled or so arranged that by the combination of inward air flow and baffling the escape of abrasive or dust particles into an adjacent work area will be minimized and visible spurts of dust will not be observed. Following blasting operations, the blast must be turned off and the exhaust system must be run for a sufficient period of time to remove the dusty air within the enclosure before the enclosure can be opened **(§1910.94(a)(3))**.

The construction, installation, inspection, and maintenance of exhaust ventilation systems must conform to the principles and requirements set forth in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960, and ANSI Z33.1-1961 **(§1910.94(a)(4)(i))**.

When dust leaks are noted, repairs must be made as soon as possible **(§1910.94(a)(4)(i)(a))**. The static pressure drop at the exhaust ducts leading from the equipment must be checked at initial installation and periodically thereafter to assure continued satisfactory operation. Whenever an appreciable change in the pressure drop indicates a partial blockage, the system must be cleaned and returned to normal operating condition **(§1910.94(a)(4)(i)(b))**.

In installations where the abrasive is recirculated, the exhaust ventilation system for the blasting enclosure must not be relied upon for the removal of fines from the spent abrasive instead of an abrasive separator. An abrasive separator must be provided for this purpose **(§1910.94(a)(4)(ii))**.

The air exhausted from blast-cleaning equipment must be discharged through dust collecting equipment. Dust collectors must be set up so that the accumulated dust can be emptied and removed without contaminating other working areas **(§1910.94(a)(4)(iii))**.

Spray booths or spray rooms are to be used to enclose or confine all spray finishing operations **(§§1910.94(c)(2) and (c)(3))**. The total air volume exhausted through a spray booth must be such as to dilute the solvent vapor to at least 25 percent of the lower explosive limit of the solvent being sprayed **(§1910.94(c)(6)(ii))**.

Spray booths must be constructed of steel, securely and rigidly supported, or of concrete or masonry except that aluminum or other substantial noncombustible material may be used for intermittent or low volume spraying. Spray booths must be designed to sweep air currents toward the exhaust outlet. The interior surfaces of spray booths must be smooth and continuous without edges and otherwise designed to prevent pocketing of residues and facilitate cleaning and washing without injury. The floor surface of a spray booth and operator's working area, if combustible, must be covered with noncombustible material of such character as to facilitate the safe cleaning and removal of residues. Distribution or baffle plates, if installed to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct, must be of noncombustible material and readily removable or accessible on both sides for cleaning. Such plates must not be located in exhaust ducts **(§1910.94(c)(3)(i)(a) and §1910.107(b)(1) through (b)(4))**.

Exhaust systems for grinding, polishing, and buffing operations should be designed and tested in accord with American Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960 **(§1910.94(b)(4)(ii))**.

Sanitation

Change Rooms

Whenever employees are required to wear protective clothing due to possible contamination with toxic materials, employers must provide employees with a change room. The change room must be equipped with storage facilities for street clothes and separate storage facilities for the protective clothing **(§1910.141(e))**.

Drinking Water

Potable drinking water must be provided in all places of employment **(§1910.141(b)(1)(i))**. Potable drinking water dispensers

must be designed, constructed, and serviced to ensure sanitary conditions and must be capable of being closed, and have a tap **(§1910.141(b)(1)(iii))**. Open containers such as barrels, pails or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, are prohibited **(§1910.141(b)(1)(v))**. A common drinking cup is not allowed **(§1910.141(b)(1)(vi))**.

Eating and Drinking Areas

Employers must not allow workers to consume food or beverages in toilet rooms or in any area exposed to a toxic material **(§1910.141(g)(2))**. A covered receptacle of corrosion-resistant or disposable material must be provided in designated eating and drinking areas for the disposal of waste food. Receptacles must be provided with a solid tight-fitting cover, unless sanitary conditions can be maintained without the use of a cover **(§1910.141(g)(3))**.

Showers

Where showers are required to be provided, one shower must be provided for every 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift; body soap or other appropriate cleansing agents must be provided in a convenient location to the showers; hot and cold water feeding a common discharge line must be provided; and individual clean towels must be made available **(§§1910.141(d)(3)(i) through (v))**.

Toilets

Toilet facilities must be provided according to the following: 1-15 persons, one facility; 16-35 persons, two facilities; 36-55 persons, three facilities; 56-80 persons, four facilities; 81-110 persons, five facilities; 111-150 persons, six facilities; over 150 persons, one for each additional 40 persons. Where toilet rooms will be occupied by no more than one person at a time and can be locked from the inside, separate rooms for each sex need not be provided **(§1910.141(c)(1)(i))**. However, these requirements do not apply to mobile crews or to normally unattended work locations so long as employees working at these locations have transportation immediately available to nearby toilet facilities **(§1910.141(c)(1)(ii))**.

Each water closet must occupy a separate compartment with a door and walls or partitions between fixtures sufficiently high to ensure privacy **(§1910.141(c)(2))**.

Wash basins (lavatories), with hot and cold, or tepid running water, hand soap or equivalent, and hand towels, blowers or equivalent, must be provided in every place of employment **(§§1910.141(d)(2)(i) through (iv))**.

Confined Spaces

Permit-Required Confined Spaces

The employer must evaluate the workplace to determine if confined space conditions exist that necessitate permits for entry. A decision flow chart[3] is contained in Appendix A to section 1910.146 of the OSHA Permit-Required Confined Space standard to facilitate compliance with this requirement **(§1910.146(c)(1))**.

If permit-required confined spaces exist, the employer must inform exposed workers, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces **(§1910.146(c)(2))**.

If the employer decides that employees will not enter permit spaces, the employer must take effective measures to prevent them from entering the permit spaces and must comply with additional requirements of the standard **(§1910.146(c)(3))**.

If confined space entry is required, a written permit program must be developed and initiated by the employer. The written program must be available for inspection by employees and their authorized representatives **(§1910.146(c)(4))**.

Before entry is authorized, the employer must develop and implement the means, procedures, and practices necessary for safe entry operations, which includes, but is not limited to, the following: specifying acceptable entry conditions; providing each authorized entrant or that employee's authorized representative with the opportunity to observe any monitoring or testing of permit spaces; isolating the permit space; purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards; providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards;

[3] Appendix A provides information and non-mandatory guidelines to assist employers and employees in complying with the appropriate requirements.

and verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry **(§§1910.146(d)(3) and (e)(1))**.

The employer must provide training so that all employees whose work is regulated by the permit entry system section acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned by the standard **(§1910.146(g)(1))**.

The employer must ensure that each designated member of the rescue and emergency service team is provided with, and is trained to use properly, the personal protective equipment (PPE) and rescue equipment necessary for making rescues from permit spaces **(§§1910.146(k)(2) and (k)(2)(i))**. The necessary PPE must be provided at no cost to the employee **(§1910.132(h))**. The employer must also evaluate each prospective rescuers' ability to respond to a rescue summons in a timely manner, considering the hazards involved **(§1910.146(k)(1)(i))**.

Control of Hazardous Energy (Lockout/Tagout)

The Control of Hazardous Energy covers the servicing and maintenance of machines and equipment in which the unexpected start-up or energization of the machines or equipment, or release of stored energy could cause injury to employees **(§1910.147(a)(1)(i))**. In order to prevent injury to employees, each employer is required to establish a program and utilize procedures for affixing appropriate lockout or tagout devices to energy isolating devices, and to otherwise disable the machines or equipment to prevent the unexpected start-up, energization, or release of stored energy **(§1910.147(a)(3)(i))**.

The program and procedures discussed above must also include employee training for those involved in the servicing of machines or equipment, and periodic inspections that must be conducted at least annually to ensure the continued effectiveness of the program **(§1910.147(c)(1))**. The periodic inspection must include a review of the procedures with all employees who are authorized to use the procedures when lockout is used, and with all authorized and affected employees when tagout is used **(§1910.147(c)(6)(i))**. When outside contractors are performing servicing or maintenance

within a plant or facility, each employer must coordinate with the other employers to ensure that no employees are endangered **(§1910.147(f)(2)(i))**. When a group of employees are performing a servicing or maintenance activity, each employee must be afforded protection equivalent to the utilization of individual lockout or tagout **(§1910.147(f)(3)(i))**. When servicing or maintenance extends over more than one shift, specific procedures must be utilized to ensure continuity of personnel protection, including provision for the orderly transfer of lockout or tagout control **(§1910.147(f)(4))**.

If an energy isolating device is capable of being locked out, the employer's energy control program must utilize lockout, unless the employer can demonstrate that the utilization of a tagout system will provide full employee protection as set forth in **§1910.147(c)(3) (§1910.147(c)(2)(iii))**. Further, after January 2, 1990, whenever replacement or major repair, renovation or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machine or equipment must be designed to accept a lockout device **(§1910.147(c)(2)(iii))**.

If an energy isolating device is not capable of being locked out, the employer's energy control program must utilize a tagout system **(§1910.147(c)(2)(i))**. Further, in demonstrating that a level of safety is achieved in the tagout program that is equivalent to the level of safety obtained by using a lockout program, the employer must demonstrate full compliance with all tagout-related provisions of §1910.147 together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection must include the implementation of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization **(§1910.147(c)(3)(ii))**. This requirement to implement an additional safety measure is often referred to as "tags-plus".

Hazardous Materials

Compressed Gas Cylinders

Inside of buildings, oxygen-fuel gas welding cylinders must be stored in a well-protected, well-ventilated, dry location, at least 20 feet (6.1 meters) from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage spaces must be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders must not be kept in unventilated enclosures such as lockers and cupboards **(§1910.253(b)(2)(ii))**.

Where such a cylinder is designed to accept a valve protection cap, caps must be in place, hand-tight, except when the cylinder is in use or is connected for use **(§1910.253(b)(2)(iv))**.

Oxygen-fueled Gas

Acetylene

Under no conditions must acetylene be generated, piped (except in approved cylinder manifolds) or utilized at a pressure in excess of 15 pounds per square inch (psig) (103 kPa gauge pressure) or 30 psia (206 kPa absolute). The use of liquid acetylene is prohibited **(§1910.253(a)(2))**.

Acetylene cylinders must be stored and used in a vertical, valve-end-up position only **(§1910.253(b)(3)(ii))**.

The in-plant transfer, handling, storage, and use of acetylene in cylinders must comply with the provisions of Compressed Gas Association pamphlet G-1.3-2009 **(§1910.102(a))**.

Compressed Gases

Hydrogen

Hydrogen containers must comply with one of the following: (1) designed, constructed, and tested in accord with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VIII – Unfired Pressure Vessels – 1968; or (2) designed, constructed, tested and maintained in accord with U.S. Department of Transportation specifications and regulations **(§§1910.103(b)(1)(i)(a)(1) and (b)(2))**.

Hydrogen systems must be located (1) so that they are readily accessible to delivery equipment and to authorized personnel, (2) above ground, (3) so they are not beneath electric power lines, and (4) clear from flammable liquid piping or piping of other flammable gases. Systems near aboveground flammable liquid storage must be located on ground that is higher than the flammable liquid storage, except when dikes, diversion curbs, grading, or separating solid walls are used to prevent accumulation of flammable liquids under the system **(§§1910.103(b)(2)(i)(a) through (e))**.

Permanently installed containers must be provided with substantial non-combustible supports on firm non-combustible foundations **(§1910.103(b)(1)(i)(b))**.

Nitrous Oxide

The piped systems for the in-plant transfer and distribution of nitrous oxide must be designed, installed, maintained, and operated in accord with Compressed Gas Association pamphlet G-8.1-1964 (**§1910.105**).

Oxygen

Oxygen cylinders in storage must be separated from fuel-gas cylinders or combustible materials (especially oil or grease) a minimum distance of 20 feet (6.1 meters) or by a noncombustible barrier at least 5 feet (1.5 meters) having a fire resistance rating of at least 1/2 hour **(§1910.253(b)(4)(iii))**.

Dip Tanks Containing Flammable or Combustible Liquid

Dip tanks with more than 150 gallons (570 liters) capacity, or 10 square feet (0.9 square meters) in liquid surface area, must be equipped with a properly trapped overflow piping that discharges to a safe location outside the building **(§1910.125(b)(1))**.

There must be no open flames, spark-producing devices, or heated surfaces having a temperature sufficient to ignite vapors in any flammable vapor area **(§1910.125(e)(1)(ii))**.

Areas in the vicinity of dip tanks must be kept as clear of combustible stock as practical and must be kept entirely free of combustible debris **(§1910.125(e)(4)(i))**.

All dip tanks exceeding 150 gallons (570 liters) of flammable liquid capacity or having a liquid surface area exceeding four square feet (0.36 meters) must be protected with at least one of the following automatic extinguishing facilities: water spray system, foam system, carbon dioxide system, dry chemical system, or automatic dip tank cover **(§§1910.125(f)(1)(i) and (f)(2))**.

This provision must apply to hardening and tempering tanks having a liquid surface area of 25 square feet (2.37 square meters) or a capacity of at least 500 gallons (1,893 liters) or more **(§1910.125(f)(1)(ii))**.

Explosives and Blasting Agents

All explosives must be kept in approved magazines **(§1910.109(c)(1)(i))**. Stored packages of explosives must be laid flat with the top side up. Black powder, when stored in magazines with other explosives, must be stored separately **(§1910.109(c)(5)(i))**.

Vehicles used to store packages of explosives or blasting agents must keep Department of Transportation placards visible until the vehicle is empty of explosives or blasting agents **(§1910.109(d)(2)(ii) and §1910.1201)**.

Smoking, matches, open flames, spark-producing devices, and firearms (except firearms carried by guards) must not be permitted inside of or within 50 feet (15 meters) of magazines. The land surrounding a magazine must be kept clear of all combustible materials for a distance of at least 25 feet (7.5 meters). Combustible materials must not be stored within 50 feet (15 meters) of magazines **(§1910.109(c)(5)(vii))**.

The manufacture of explosives and pyrotechnics must meet the requirements of OSHA's Process Safety Management standard **(§§1910.109(k)(2) and (k)(3))**.

Flammable Liquids

Flammable liquids must be kept in covered containers or tanks when not actually in use **(§1910.106(e)(2)(iv)(a))**.

For fire protection purposes, the quantity of flammable or combustible liquid that may be located outside of an inside storage

room or storage cabinet in a building or any one fire area of a building must not exceed **(§1910.106(e)(2)(ii)(b))**:

- 25 gallons (95 liters) of Class IA liquids in containers;
- 120 gallons (456 liters) of Class IB, IC, II, or III liquids in containers; or
- 660 gallons (2,508 liters) of Class IB, IC, II, or III liquids in a single portable tank.

Flammable or combustible liquids must be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system; from safety cans, by means of a device drawing through the top; or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks must be prohibited **(§1910.106(e)(2)(iv)(d))**.

Containers and Portable Tank Storage

Not more than 60 gallons (228 liters) of Class I or Class II liquids, nor more than 120 gallons (456 liters) of Class III liquids may be stored in a storage cabinet **(§1910.106(d)(3)(i))**.

Inside storage rooms for flammable and combustible liquids must be constructed to meet the required fire-resistive rating and wiring for their use. Such construction must comply with the test specifications set forth in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251-1969. Openings to other rooms or buildings must be provided with noncombustible liquid-tight raised sills or ramps at least 4 inches (10.16 centimeters) high, or the floor in the storage area must be at least 4 inches below the surrounding floor. Openings must be provided with approved self-closing fire doors. A sill or ramp that provides an open-grated trench inside of the room, draining to a safe location is also acceptable **(§1910.106(d)(4)(i))**.

Flammable or combustible liquids, including stock for sale, must not be stored so as to limit use of exits, stairways, or areas normally used for the safe egress (exit) of people **(§1910.106(d)(5)(i))**.

Outside storage areas must be graded so as to divert spills away from buildings or other exposures, or be surrounded with curbs at least 6 inches (15 centimeters) high with appropriate drainage to

a safe location for accumulated liquids. The storage areas must be protected against tampering or trespassing, where necessary, and must be kept free of weeds, debris, and other combustible material not necessary to the storage **(§§1910.106(d)(6)(iii) and (iv))**.

Adequate precautions must be taken to prevent the ignition of flammable vapors. Sources of ignition include, but are not limited to, open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical, and mechanical sparks; spontaneous ignition, including heat-producing chemical reactions, and radiant heat **(§1910.106(e)(6)(i))**.

Class I liquids must not be dispensed into containers unless the nozzle and container are electrically interconnected **(§1910.106(e)(6)(ii))**.

Boilers

Pressure Vessels (Boilers)

A pressure vessel is a storage tank or vessel which has been designed to operate at pressures above 15 p.s.i.g. **(§1910.106(a)(26))**.

Pressure vessels must be built in accord with the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code 1968 **(§§1910.106(b)(1)(v)(b) and (iv)(b)(2))**. The working pressure must not exceed the design pressure of the vessel **(§1910.106(b)(1)(v)(a))**.

Pressure vessels may be used as low-pressure tanks or atmospheric tanks **(§§1910.106(b)(1)(iii)(c) and (iv)(d))**, but must not be used for the storage of a flammable or combustible liquid at a temperature at or above its boiling point if designated an atmospheric tank **(§1910.106(b)(1)(iii)(d))**.

In addition to the reference above, low-pressure tanks may also be built in accord with the following consensus standards:

- American Petroleum Institute Standard No. 620. Recommended Rules for the Design and Construction of Large, Welded, Low-Pressure Storage Tanks, Third Edition, 1966 **(§1910.106(b)(1)(iv)(b)(1))**; and
- The principles of the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessels Code, 1968 **(§1910.106(b)(1)(iv)(b)(2))**.

Atmospheric tanks may be built in accord with the following consensus standards:

- Underwriters' Laboratories, Inc., Subjects No. 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, 1968; No. 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids, Fifth Edition, December 1961; or No. 80, Standard for Steel Inside Tanks for Oil-Burner Fuel, September 1963 **(§1910.106(b)(1)(iii)(a)(1))**;
- American Petroleum Institute Standards No. 650, Welded Steel Tanks for Oil Storage, Third Edition, 1966 **(§1910.106(b)(1)(iii)(a)(2))**; and
- American Petroleum Institute Standards No. 12B, Specification for Bolted Production Tanks, Eleventh Edition, May 1958, and Supplement 1, March 1962; No. 12D, Specification for Large Welded Production Tanks, Seventh Edition, August 1957; or No. 12F, Specification for Small Welded Production Tanks, Fifth Edition, March 1961. Tanks built in accord with these standards must be used only as production tanks for storage of crude petroleum in oil-producing areas **(§1910.106(b)(1)(iii)(a)(3))**.

Note: Atmospheric tanks built according to Underwriters' Laboratories, Inc., must be limited to 2.5 p.s.i.g. under emergency venting conditions **(§1910.106(b)(1)(iv)(c))**.

Hazardous Waste Operations and Emergency Response

Any information concerning the chemical, physical, and toxicological properties of each substance known or expected to be present on site that is available to the employer and relevant to the duties an employee is expected to perform must be made available to the affected employees prior to the commencement of their work activities. The employer may utilize information developed for the hazard communication standard for this purpose **(§1910.120(c)(8))**.

Training is required for all employees who work at hazardous waste cleanup sites, treatment storage and disposal (TSD) sites (Environmental Protection Agency permitted sites), and who respond to any emergencies involving hazardous substances. Training must cover the necessary information to perform these

jobs safely including information on the proper personal protective equipment and procedures to safeguard employees against hazards and effects of exposure to toxic substances **(§§1910.120(e), (p)(7), and (q)(6))**. The level of training is broken into five positions that include: first responder awareness, first responder operations, hazardous materials technician, hazardous materials specialist, and the on-scene incident commander **(§§1910.120(q)(6)(i) through (v))**.

A safety and health program that details the responsibilities and methods for assuring employee safety is necessary for employees engaged in hazardous waste cleanup and for TSD activities **(§§1910.120(b)(1) and (p)(1))**.

Medical surveillance (physical examination) is required for employees who are or maybe exposed to hazardous substances or health hazards, or who wear respirators for 30 or more days per year, or who develop signs or symptoms possibly related to workplace exposure **(§1910.120(f)(2))**.

Personal protective equipment must be selected and used to protect employees from hazardous substances and physical hazards **(§1910.120(g)(3)(i))**.

When necessary, a decontamination procedure must be used to assure that hazardous substances are removed from workers before they leave the worksite as well as from equipment that is to be taken off site **(§§1910.120(k)(1) and (2), (p)(4), and (q)(2)(vii))**.

When hazardous waste cleanup or removal operations commence on a site and the duration of the work will require six months or greater time to complete, the employer must provide showers, including change rooms, for all employees exposed to hazardous substances and health hazards involved in hazardous waste cleanup or removal operations **(§1910.120(n)(7))**.

Showers must be located in areas where exposures are below the permissible exposure limits and published exposure levels. If this cannot be accomplished, then a ventilation system must be provided that will supply air that is below the permissible exposure limits and published exposure levels **(§1910.120(n)(7)(iii))**. The employer must ensure that employees shower at the end of their work shift **(§1910.120(n)(7)(iv))**.

An emergency response plan must be developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations. The plan must be in writing and be available for inspection and copying by employees, their representatives, and OSHA personnel **(§1910.120(q)(1))**.

Process Safety Management of Highly Hazardous Chemicals

Employers with highly hazardous chemicals must develop and implement a process safety management system that complies with the elements of **§1910.119**.

Employers must develop a written plan of action regarding employee participation and must consult with employees and their representatives on the conduct and development of process hazards analyses and on the development of the other elements of process safety management **(§§1910.119(c)(1) and (2))**.

The employer must complete a compilation of written process safety information before conducting any process hazard analysis. The compilation of written process safety information is to enable the employer and the employees involved in operating the process to identify and understand the hazards posed by those processes involving highly hazardous chemicals. This process safety information must include information pertaining to the hazards of the highly hazardous chemicals used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process **(§1910.119(d))**. The employer must perform a process hazard analysis (hazard evaluation) appropriate to the complexity of the company's processes and must identify, evaluate, and control the hazards involved in the process **(§1910.119(e)(1))**.

The employer must develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information **(§1910.119(f)(1))**. The employer must develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel **(§1910.119(f)(4))**.

Each employee presently involved in operating a process, and each employee before being involved in operating a newly-assigned process, must be trained in an overview of the process and in the operating procedures as specified in the Operating Procedures section of the standard. The training must include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks **(§1910.119(g)(1))**.

Contract employers must assure that each contract employee is trained and understands the work practices necessary to safely perform his/her job and the hazards of the process **(§§1910.119(h)(3)(i) and (ii))**.

The employer, when selecting a contractor, must obtain and evaluate information regarding the contract employer's safety performance and programs and inform contract employees of process hazards and the facility emergency action plan **(§§1910.119(h)(2)(i) through (iii))**.

The employer must perform a pre-startup safety review for new facilities and for modified facilities when the modification is significant enough to require a change in the process safety information **(§1910.119(i)(1))**.

Employers must issue a hot work permit for any hot work operations conducted on or near a covered process **(§1910.119(k)(1))**.

The employer must establish and implement written procedures to maintain the ongoing integrity of process equipment **(§1910.119(j)(2))**.

The employer must establish and implement written procedures to manage changes to process chemicals, technology, equipment, and procedures, and changes to facilities that affect a covered process **(§1910.119(l)(1))**.

The employer must investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release of highly hazardous chemicals in the workplace **(§1910.119(m)(1))**.

The employer must establish and implement an emergency action plan for the entire plant in accord with the provisions of **§1910.38(a) (§1910.119(n))**.

Employers must also certify, at least every 3 years, that they have evaluated compliance with the provisions of the OSHA Process Safety Management of Highly Hazardous Chemicals standard **(§§1910.119(n) and (o)(1))**.

Spray-Finishing Operations

Conventional dry type spray booths equipped with overspray dry filters or filter rolls must conform to the following specifications:

- The spraying operations, except electrostatic spraying operations must ensure an average air velocity over the open face of the booth of not less than 100 feet (30 meters) per minute;
- Electrostatic spraying operations may be conducted with an air velocity over the open face of the booth of not less than 60 feet (18 meters) per minute, depending on the volume of the finishing material being applied and its flammability and explosion characteristics;
- Visible gauges, or audible alarm or pressure activated devices, must be installed to indicate or ensure that the required air velocity is maintained;
- Filter rolls must be inspected after each period of use and clogged filter pads discarded and replaced. Filter pads must be inspected to ensure proper replacement of filter media;
- Spray booths must be so installed that all portions are readily accessible for cleaning;
- A clear space of not less than 3 feet (0.9 meters) on all sides must be kept from storage or combustible construction; and
- Space within the spray booth on the downstream and upstream sides of filters must be protected with approved automatic sprinklers **(§1910.107(b))**.

There must be no open flame or spark-producing equipment in any spraying area, nor within 20 feet (6 meters) thereof, unless separated by a partition **(§1910.107(c)(2))**.

Electrical wiring and equipment not subject to deposits of combustible residues but located in a spraying area must be of an explosion-proof type approved for Class I, group D locations **(§1910.107(c)(6))**.

The quantity of flammable or combustible liquids kept in the vicinity of spraying operations must be the minimum required for operations and should ordinarily not exceed a supply for one day or one shift. Bulk storage of portable containers with flammable or combustible liquids must be in a separate, constructed building detached from other important buildings or cut off in a standard manner **(§1910.107(e)(2))**.

Whenever flammable or combustible liquids are transferred from one container to another, both containers must be effectively bonded and grounded to prevent discharge of sparks of static electricity **(§1910.107(e)(9))**.

All spraying areas must be kept as free from the accumulation of deposits of combustible residues as practical, with cleaning conducted daily if necessary. Scrapers, spuds, or other such tools used for cleaning purposes must be of nonsparking material **(§1910.107(g)(2))**.

Residue scrapings and debris contaminated with residue must be immediately removed from the premises and properly disposed of. Approved metal waste cans must be provided wherever rags or waste are impregnated with finishing material and all such rags or waste deposited therein immediately after use. The contents of waste cans must be properly disposed of at least once daily or at the end of each shift **(§1910.107(g)(3))**. "No smoking" signs in large letters on a contrasting color background must be conspicuously posted in all spraying areas and paint storage rooms **(§1910.107(g)(7))**.

Hazardous Agents

Air Contaminants

Section 1910.1000 contains more than 600 permissible exposure limits (PEL). Tables Z-1, Z-2, and Z-3 list these PELs in alphabetical order. To achieve compliance with this section when air concentrations exceed the PEL, administrative or engineering controls must first be determined and implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or any other protective measures

must be used to keep the exposure of employees to air contaminants within the limits prescribed in **§1910.1000(e).** In addition, whenever respirators are used, they must comply with **§1910.134.**

Asbestos

Employers must ensure that no employee is exposed to an airborne concentration of asbestos above the excursion limit. Specifically, asbestos exposure must not be in excess of 0.1 fiber per cubic centimeter of air (0.1 f/cc) as an 8-hour time-weighted average (TWA) **(§1910.1001(c)(1))**, and 1.0 f/cc over a period of 30 minutes **(§1910.1001(c)(2))**.

A determination of each employee's exposure must be made from breathing zone air samples that are representative of full-shift, 8-hour TWA, and 30-minute short-term exposures associated with operations that are most likely to produce exposures above the excursion limit for each shift **(§§1910.1001(d)(1)(i) and (ii))**.

Employers must conduct periodic monitoring for employees exposed above the action level, 8-hour TWA, or 30-minute excursion limit **(§1910.1001(d)(3))**.

Wherever the airborne concentration of asbestos and/or presumed asbestos-containing material (PACM) exceeds the TWA, employers must establish regulated areas that are demarcated from the rest of the workplace in a manner that minimizes the number of persons exposed to asbestos **(§§1910.1001(e)(1) and (2))**. Access to the regulated areas must be limited to authorized persons that are supplied with and using an appropriate respirator, selected in accord with **§1910.1001(g)(2) (§§1910.1001(e)(3) and (4))**.

Employers must institute engineering and work practice controls to reduce and maintain employee exposure at or below the TWA and the excursion limit, except to the extent that such controls are not feasible **(§1910.1001(f)(1)(i))**. Asbestos must be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state. Wet methods, enclosed processes, or ventilated areas must be used when products containing asbestos are removed from bags, cartons, or containers **(§§1910.1001(f)(1)(vi) and (viii))**. Sanding of asbestos-containing flooring material is prohibited **(§1910.1001(f)(1)(x))**.

Respirators must be used: (1) while feasible engineering and work practice controls are being installed or implemented; (2) during maintenance and repair activities, or other activities where engineering and work practice controls are not feasible; (3) where feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the TWA and/or excursion limit; and (4) in emergencies **(§§1910.1001(g)(1)(i) through (iv))**.

Employers and owners of buildings constructed prior to 1980 which contain thermal system insulation or sprayed-on or troweled-on surfacing material must presume that these materials contain asbestos, or else conduct sampling and analysis to verify that the materials do not contain more than 1 percent asbestos **(§§1910.1001(j)(1) and (2))**. Building and facility owners must inform employers of employees, and employers must inform employees who will perform housekeeping activities in areas which contain asbestos-containing materials (ACM) and/or PACM of the presence and location of ACM and/or PACM in such areas which may be contacted during such activities **(§1910.1001(j)(2)(iii))**.

Employers must train each employee who is exposed to airborne concentrations of asbestos at or above the PEL and/or excursion limit. The employer must institute a training program and ensure employee participation in the program **(§1910.1001(j)(7)(i))**.

Employers must institute a medical surveillance program for all employees who are or will be exposed to airborne concentrations of fibers of asbestos at or above the TWA and/or excursion limit **(§1910.1001(l)(1)(i))**.

Employers must maintain accurate records required to comply with the provisions of the standard, including air monitoring, objective data, training and medical surveillance **(§1910.1001(m))**.

Bloodborne Pathogens

Each employer having employee(s) who may incur skin, eye, mucous membrane, mouth, or parenteral contact with blood or other potentially infectious materials as a result of performing their professional duties must establish a written Exposure Control Plan designed to eliminate or minimize exposure **(§1910.1030(c)(1)(i))**.

Employers required to establish an Exposure Control Plan must solicit input from non-managerial employees who are potentially exposed to injuries from contaminated sharps on the identification, evaluation, and selection of effective engineering and work practice controls, and must document such solicitation in the Exposure Control Plan **(§1910.1030(c)(1)(v))**.

Universal precautions must be observed to prevent contact with blood or other potentially infectious materials. The concept of Universal Precautions requires that all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens **(§1910.1030(b))**. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids must be considered potentially infectious materials **(§1910.1030(d)(1))**. This includes first-aid workers and other emergency care providers who might be exposed to bleeding victims.

Engineering and work practice controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) must be used to eliminate or minimize employee exposure. Where occupational exposure remains after instituting these controls, personal protective equipment must also be used **(§1910.1030(d)(2)(i))**. All engineering controls used must be examined and maintained, or replaced on a regular schedule to ensure their effectiveness **(§1910.1030(d)(2)(ii))**.

In addition to the above methods, vaccinations provide an important role in exposure control. The hepatitis B vaccine and vaccination series must be offered to all workers, at no cost, who have a reasonably anticipated exposure to blood or other potentially infectious materials **(§1910.1030(f))**. The vaccine is given in a series of three injections over a 6-month period and all three injections must be received. Healthcare workers and healthcare providers who do not wish to be vaccinated must sign a declination form.

Employers must establish and maintain a sharps injury log to record percutaneous (through the skin) injuries from contaminated sharps **(§1910.1030(h)(5))**.

Benzene

Employee exposure to gaseous and liquid benzene must be limited to one (1) part per million (ppm) as an 8-hour time-weighted average (TWA), known as the permissible exposure limit (PEL), and five (5) ppm as averaged over a period of fifteen (15) minutes, known as the short-term exposure limit (STEL) **(§§1910.1028(c)(1) and (2))**.

A determination of each employee's exposure must be made from breathing zone air samples that are representative of full-shift, 8-hour TWA, and 15-minute short-term exposures associated with operations that are most likely to produce exposures above the STEL for each shift **(§§1910.1028(e)(1)(i) through (iii))**. The employer must conduct periodic monitoring for employees exposed above the action level, PEL, or STEL **(§§1910.1028(e)(3)(i), (ii), and (iv))**. The employer must also monitor for employee exposure when there may be new or additional exposures **(§1910.1028(e)(5)(i))**.

The employer must institute engineering and work practice controls to reduce and maintain employee exposure at or below the PEL **(§§1910.1028(f)(1)(i) and (ii))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls are infeasible or insufficient to reduce employee exposure to permissible levels **(§1910.1028(g)(1))**. When employees could have eye or skin contact with liquid benzene, the employer must also select and provide appropriate protective clothing or other equipment **(§1910.1028(h))**.

The employer must institute a medical surveillance program for employees who are or may be exposed to benzene at or above the PEL and other thresholds for certain numbers of days annually **(§1910.1028(i)(1)(i))**. The employer must make available medical examinations and consultations, including certain laboratory tests, to each covered employee before initial assignment, at least annually, and in certain other situations **(§1910.1028(i)(2)(i))**. Employees required to use respirators must also be provided pulmonary function tests every three years **(§1910.1028(i)(3)(iii))**.

A medical exam following exposure in an emergency situation may require special elements or actions, including a urinary phenol test, blood tests, and physician's referral to a hematologist/internist for further evaluation or treatment **(§§1910.1028(i)(4) and (5))**. Employers must implement a medical removal plan, including medical removal protection benefits, for employees referred to a hematologist/internist **(§§1910.1028(i)(8) and (9))**.

The employer must establish a regulated area wherever exposures to concentrations of benzene may exceed or reasonably be expected to exceed the PEL or STEL **(§1910.1028(d)(1))**. Regulated areas must be determined in a manner that minimizes the number of employees within the regulated area and access must be limited to authorized persons **(§§1910.1028(d)(2), (d)(3), and (j)(1)(i))**. Labels or other appropriate forms of warning must be provided for containers of benzene **(§1910.1028(j)(1)(ii))**.

Employers must also provide employees with information and training on benzene at the time of initial assignment and, for employees who may be exposed at or above the action level, at least annually thereafter **(§1910.1028(j)(3)(i))**.

The employer must establish and maintain an accurate record of initial monitoring data or objective data relied upon in place of certain initial monitoring provisions and a record for each employee subject to medical surveillance requirements **(§§1910.1028(k)(1)(i) and (k)(2)(i))**.

1,3-Butadiene

The standard establishes permissible exposure limits (PELs) of 1 part per million (ppm) as an 8-hour time-weighted average (TWA) and 5 ppm as a 15-minute short-term exposure limit (STEL) for 1,3-butadine (BD) **(§§1910.1051(c)(1) and (2))**.

Employee exposures to BD must be determined from breathing zone air samples that are representative of the 8-hour TWA and 15-minute STEL associated with operations most likely to produce exposures exceeding the STEL for each shift and job classification **(§§1910.1051(d)(1)(i) through (iii))**. Employers must conduct periodic monitoring for employees exposed above the action level (0.5 ppm as a TWA), PEL, or STEL **(§§1910.1051(d)(3)(i) through (iii))**.

Additional monitoring is required when there has been a change in production, process, control equipment, personnel, or work practices and if a spill, leak, or rupture has occurred **(§§1910.1051(d)(5)(i) and (ii))**.

Employers must institute engineering and work practice controls (excluding employee rotation) to reduce and maintain employee exposure at or below the TWA and the STEL **(§§1910.1051(f)(1)(i) through (ii) and (f)(2)(iv))**.

For operations and jobs in which exposures exceed the action level, employers must establish an exposure goal program to reduce exposures **(§1910.1051(g)(1))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls do not reduce employee exposures to permissible levels **(§§1910.1051(f)(1)(ii) and (h)(1)(i) through (iv))**. Employers must comply with requirements of the respiratory protection program and for respiratory protection **(§§1910.1051(h)(2)(i) through (vi) and (h)(3)(i) through (iii))**. When appropriate for limiting skin and eye contact, employers must provide appropriate protective clothing and equipment, including eye and face protection that meet the requirements of **§1910.33 (§1910.1051(i))**.

Employers must provide medical screening and surveillance to employees with BD exposures at or above the action level for 30 or more days and employees who are or may be exposed at or above PELs for 10 or more days a year **(§1910.1051(k)(1)(i))**. Employers must continue providing medical surveillance and screening for employees who were exposed to BD for 10 or more years at concentrations exceeding the PELs for 30 or more days or the action level for 60 or more days a year, in addition to employees exposed to above 10 ppm on 30 or more days in any year and exposed during an emergency **(§§1910.1051(k)(1)(ii) and (iii))**. Frequency of medical surveillance and screening varies according to exposure scenarios **(§§1910.1051(k)(3)(i) through (iii))**. Information from medical screening must be aggregated and periodically reviewed to assess the health of the employee population **(§1910.1051(k)(8)(i))**.

The standard also contains requirements for regulated areas, emergency plans, hazard communication, and recordkeeping **(§§1910.1051(e), (j), (l), and (m))**.

Cadmium

Employee exposure to cadmium must be limited to the permissible exposure limit (PEL) of 5 micrograms per cubic meter of air ($\mu g/m^3$) as an 8-hour time-weighted average (TWA) **(§1910.1027(c))**.

Employee exposure to cadmium must be determined from breathing zone air samples that represent the 8-hour TWA for employees expected to have the highest exposure for each shift and job classification **(§§1910.1027(d)(1)(ii) and (iii))**. Employers must conduct periodic monitoring for employees exposed above the action level (2.5 $\mu g/m^3$ TWA) **(§1910.1027(d)(3)(i))**. Additional monitoring is required when there has been a change that could result in further exposures **(§1910.1027(d)(4))**.

Employers must establish engineering and work practice controls (excluding employee rotation) to reduce and maintain employee exposure at or below the PEL for most industries **(§1910.1027(f)(1)(i))**. For six industries (nickel-cadmium battery, zinc/cadmium refining, lead smelting, pigment manufacture, plating, and stabilizers), the employer must use engineering and work practice controls to limit employee exposures to the appropriate separate engineering control air limit (SECAL) of 15 or 50 $\mu g/m^3$ **(§1910.1027(f)(1)(ii))**.

Employers must demonstrate the effectiveness of ventilation systems, use a high-efficiency filter if air is recirculated, and minimize employee exposure during ventilation system maintenance **(§§1910.1027(f)(3)(i) through (iv))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls do not reduce employee exposure to the PEL or appropriate SECAL **(§§1910.1027(f)(1)(iv), (g)(1), (g)(1)(i) through (iv), and (vi))**. Employers must comply with requirements of the respiratory protection program and respirator selection sections **(§§1910.1027(g)(2) and (3))**.

If employees are exposed to cadmium above the PEL or could experience skin or eye irritation, employers must provide appropriate protective clothing and equipment and provide for its cleaning, disposal, and repair **(§§1910.1027(i)(1), (i)(1)(i) through (iii), and (i)(3)(i) through (iv))**. Employers must also require employees

to remove contaminated clothing in change rooms and place the clothing in sealable containers that are labeled with warnings **(§§1910.1027(i)(2)(i) through (iv))**.

Employers must provide medical surveillance to employees who are exposed at or above the action level for 30 or more days per year, were previously exposed at or above the action level for a total of more than 60 months before this standard became effective, or are exposed in an emergency **(§§1910.1027(l)(1)(i)(A), (B), and (l)(7)(i))**. Surveillance includes measurement of blood and urinary cadmium and urinary β-2-microglobulin levels, and results of those analysis could affect frequency of periodic medical surveillance or trigger actions such as assessment of controls or removal from exposure **(§§1910.1027(l)(2) through (l)(5))**. Employees may see a second or third physician if the employer picks the initial physician **(§§1910.1027(l)(13)(i) and (iv))**.

Employers must remove employees from cadmium exposure for up to 18 months when a physician determines that medical removal is required for any reason such as cadmium and β-2-microglobulin levels in blood and/or urine, inability to wear a respirator, or evidence of cadmium-related illness **(§§1910.1027(l)(11)(i)(A), (C), and (l)(12)(i))**. During medical removal, employers must maintain the employee's earnings, seniority and other employment rights and benefits **(§1910.1027(l)(12)(ii))**.

The standard also has requirements for regulated areas, emergencies, hygiene areas and practices, housekeeping, hazard communication, recordkeeping, and observation of monitoring **(§§1910.1027(e), (h), and (j) through (o))**.

Chromium (VI)

Employee exposure to chromium (VI) must be limited to an airborne concentration of 5 parts chromium (VI) per cubic meter of air (5 $\mu g/m^3$) as an 8-hour time-weighted average (TWA) **(§1910.1026(c))**.

Employers must determine each employee's initial 8-hour TWA exposure to chromium (VI) through breathing zone air samples for each shift, each job classification, and each work area **(§1910.1026(d)(2)(i))**. Employers must conduct periodic monitoring for employees exposed above the action level or the TWA and

additional monitoring when necessary **(§§1910.1026(d)(2)(iii), (iv), and (vi))**. Exposure may be determined through a performance approach, rather than monitoring **(§1910.1026(d)(3))**. Employees have the right to observe monitoring and must be notified of results **(§§1910.1026(d)(4)(i) and (d)(6)(i))**.

Employers must establish a regulated area wherever exposures to airborne concentrations of chromium (VI) may exceed the TWA **(§1910.1026(e)(1))**. Regulated areas must be demarcated and access must be limited to authorized persons **(§§1910.1026(e)(2) and (3))**.

Employers must institute engineering and work practice controls to reduce and maintain employee exposure at or below the TWA or at or below 25 µg/m^3 in certain aerospace industries **(§§1910.1026(f)(1)(i) and (ii))**. Employers are not permitted to rotate employees to comply with permissible exposure limits **(§1910.1026(f)(2))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls are infeasible or insufficient to reduce employee exposure to permissible levels and must implement a respiratory protection program **(§§1910.1026(f)(1)(i), (g)(1)(iii), and (g)(2))**. When employees could have chromium (VI)-induced skin or eye irritation, employers must also provide appropriate personal protective clothing and equipment, which must be properly removed, stored, cleaned and replaced, and follow appropriate hygiene and housekeeping practices **(§§1910.1026(h)(1) through (3) and (i) through (j))**.

Employers must institute a medical surveillance program for all employees who may be exposed to chromium (VI) at or above the action level for at least 30 days a year or who show signs or symptoms associated with chromium (VI) exposure **(§§1910.1026(k)(1)(i)(A) through (C))**. Employers must make available medical examinations and consultations within 30 days after initial assignment, at least annually thereafter, and under other conditions **(§§1910.1026(k)(2)(i) through (vi))**.

Employers must make appropriate arrangements for emergencies, including providing respiratory protection and medical surveillance to employees under these conditions **(§§1910.1026(g)(1)(v), (k)(1)(i)(C), and (k)(2)(v))**.

This standard also contains requirements for hazard communication and recordkeeping **(§§1910.1026(l)(2) and (m))**.

Ethylene Oxide

Employee exposure to ethylene oxide (EtO) must be limited to one (1) part per million (ppm) as an 8-hour time-weighted average (TWA) and five (5) ppm as averaged over a period of fifteen (15) minutes (excursion limit) **(§§1910.1047(c)(1) and (2))**.

A determination of each employee's exposure must be made from breathing zone air samples that are representative of full-shift, 8-hour TWA, and 15-minute short-term exposures associated with operations that are most likely to produce exposures above the excursion limit for each shift **(§§1910.1047(d)(1)(i) through (ii))**. The employer must conduct periodic monitoring for employees exposed above the action level, 8-hour TWA, or 15-minute excursion limit **(§§1910.1047(d)(3)(i), (ii), and (iv))**.

The employer must institute engineering and work practice controls to reduce and maintain employee exposure at or below the TWA and the excursion limit **(§§1910.1047(f)(1)(i) and (ii))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls are infeasible or insufficient to reduce employee exposure to permissible levels **(§§1910.1047(f)(1)(ii) and (g)(1))**. When employees could have eye or skin contact with EtO or EtO solutions, the employer must also select and provide appropriate protective clothing or other equipment **(§1910.1047(g)(4))**.

A written plan for emergency situations must be developed for each workplace where there is a possibility of an emergency, and the plan must be implemented in the event of an emergency **(§1910.1047(h)(1)(i))**. The plan must cover respiratory protection for employees engaged in correcting emergency conditions, emergency action procedures, and fire prevention elements **(§§1910.1047(h)(1)(ii) and (iii))**.

The employer must institute a medical surveillance program for all employees who are or may be exposed to EtO at or above the action level, without regard to the use of respirators, for at least

30 days a year **(§1910.1047(i)(1)(i)(A))**. The employer must make available medical examinations and consultations to each covered employee at least annually and in other situations such as when employees develop signs or symptoms that might be related to exposure or when employees are exposed during an emergency **(§§1910.1047(i)(1)(i) and (i)(2)(i))**.

The employer must establish a regulated area wherever exposures to airborne concentrations of EtO may exceed the TWA or can reasonably be expected to exceed the excursion limit **(§1910.1047(e)(1))**. Regulated areas must be demarcated in any manner that minimizes the number of employees within the regulated area and access must be limited to authorized persons **(§§1910.1047(e)(2), (e)(3), and (j)(1)(i))**.

Labels or other appropriate forms of warning must be provided for containers of EtO **(§1910.1047(j)(1)(ii))**.

Employers must also provide employees who are potentially exposed to EtO at or above the action level or above the excursion limit with information and training on EtO at the time of initial assignment and at least annually thereafter. **(§1910.1047(j)(3)(i))**.

The employer must establish and maintain an accurate record of objective data relied upon to support an exemption from requirements of the standard or used in place of initial monitoring; records of all measurements taken to monitor employee exposure to EtO; and a record for each employee subject to medical surveillance requirements of this section **(§§1910.1047(k)(1)(i) through (iii), (k)(2)(i) through (iii), and (k)(3)(i) through (iii))**.

Formaldehyde

Employee exposure to formaldehyde must be limited to 0.75 parts per million (ppm) as an 8-hour time-weighted average (TWA) and 2.0 ppm short-term exposure limit (STEL) as averaged over a period of fifteen (15) minutes **(§§1910.1048(c)(1) and (2))**.

The employer must identify all employees who may be exposed at or above the action level or at or above the STEL and measure, or use objective data, to determine the exposure of each employee so identified **(§1910.1048(d)(2))**.

Periodic monitoring must be conducted for employees exposed above the action level, 8-hour TWA, or 15-minute STEL **(§1910.1048(d)(3)(i))**. Exposure monitoring is required if the employer receives reports of signs or symptoms of respiratory or dermal (skin related) conditions associated with formaldehyde exposure **(§1910.1048(d)(2)(iii))**. Employees must be notified of their exposure monitoring results **(§1910.1048(d)(6))**.

The employer must implement engineering and work practice controls to reduce and maintain employee exposures to formaldehyde at or below the TWA and the STEL **(§1910.1048(f)(1))**. When engineering and work practice controls are infeasible or insufficient to reduce employee exposure to permissible levels, such as during maintenance activities or vessel cleaning, employers must provide employees with an appropriate respirator **(§§1910.1048(f)(2) and (g))**.

If employees' eyes or skin may become splashed with solutions containing 1 percent or greater formaldehyde, protective clothing and equipment must be provided **(§1910.1048(h)(1))**, along with conveniently located eyewashes and quick drench showers **(§§1910.1048(i)(2) and (3))**.

The employer must establish regulated areas and restrict access to authorized employees wherever the airborne concentration of airborne formaldehyde exceeds either the TWA or the STEL, and post warning signs at all entrances to the area **(§1910.1048(e))**.

For operations involving formaldehyde liquids or gas, a preventive maintenance program is required to ensure that all leaks are repaired and spills are cleaned promptly by employees wearing suitable protective equipment and trained in proper methods for cleanup and decontamination **(§1910.1048(j))**.

In the event of emergencies involving formaldehyde, a plan to ensure that appropriate procedures are followed to minimize injury and loss of life must be implemented **(§1910.1048(k))**.

A medical surveillance program is required for employees exposed to formaldehyde at concentrations at or exceeding the action level or exceeding the STEL **(§1910.1048(l)(1)(i))**, and for employees who develop signs and symptoms of overexposure to formaldehyde, or who are exposed to formaldehyde in emergencies **(§1910.1048(l)**

(1)(ii)). If a physician finds that significant irritation of the mucosa (mucous membranes) of the eyes or of the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization and recommends restrictions or removal, the employer must transfer, if possible, the employee to work having no or significantly less exposure to formaldehyde, and maintain the employee's current earnings, seniority, and other benefits **(§1910.1048(l)(8)(vi))**.

Containers of formaldehyde must be marked with precautionary labels **(§1910.1048(m)(3)(i))**.

Employers must provide training to employees on formaldehyde at the time of their initial assignment and annually thereafter **(§1910.1048(n)(1))**.

The employer must establish and maintain accurate records of any objective data relied upon to support an exemption from requirements of the standard or used in place of initial monitoring; records of all measurements taken to monitor employee exposure to formaldehyde; and a record for each employee subject to medical surveillance requirements of this section **(§1910.1048(o))**.

Lead

Employee exposure to lead must be limited to a permissible exposure limit (PEL) of 50 micrograms per cubic meter of air ($\mu g/m^3$) as an 8-hour time-weighted average (TWA) **(§1910.1025(c)(1))**. When determining TWA exposures, employers must adjust for a greater than 8-hour workday and may consider respirator protection factors and duration of respirator use **(§§1910.1025(c)(2) and (3))**.

For each shift, job, and work area, employers must collect representative, full-shift (minimum of 7 continuous hours) personal samples for employees likely to have the greatest exposure **(§§1910.1025(d)(1)(ii) through (iii) and (d)(3)(ii))**. Employers must conduct periodic monitoring for employees exposed above the action level (30 $\mu g/m^3$ TWA) or when there has been a production, process, control, or personnel change **(§§1910.1025(d)(6)(ii) through (iii) and (d)(7))**.

Employers must use engineering and work practice controls to reduce and maintain employee exposure at or below the TWA PEL **(§§1910.1025(e)(1)(i) and (ii))**. Employers must demonstrate effectiveness of ventilation systems and use a high efficiency filter, monitors, and automatic bypasses for return air **(§§1910.1025(e)(4)(i) and (ii))**. Employers must also establish a job rotation schedule if using administrative controls **(§§1910.1025(e)(5)(i) through (iii))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls do not reduce employee exposure to or below the PEL **(§§1910.1025(e)(2), (f)(1), and (f)(1)(i) through (iii))**. Employers must comply with requirements of the respiratory protection program and respirator selection **(§§1910.1025(f)(2)(i) and (ii), (f)(3)(i)(A) through (C), and (f)(3)(ii))**. If employees are exposed to lead above the PEL or could experience skin or eye irritation, employers must provide appropriate protective clothing and equipment and provide for its cleaning, disposal, and repair **(§§1910.1025(g)(1), (g)(1)(i) through (iii), and (g)(2)(i) through (ii))**. Employers must require that employees remove contaminated clothing in change rooms and place the clothing in sealable containers that are labeled with warnings and prohibited activities **(§§1910.1025(g)(2)(iv) through (viii))**.

Employers must provide medical surveillance to employees who are or may be exposed to lead at or above the action level for at least 30 days a year **(§§1910.1025(j)(1)(i) and (j)(2)(i)(A))**. Employers must make available medical examinations and consultations at least annually if blood lead levels are at or exceed 40 µg/100 g and in situations such as when employees develop signs of lead poisoning or request advice related to child conception **(§§1910.1025(j)(3)(i)(A) and (j)(3)(i)(C))**. Employees may go to a second or third physician if the employer picks the initial physician **(§§1910.1025(j)(3)(iii)(A) and (D))**. The standard prohibits chelation for preventative purposes and establishes requirements for use of chelation for treatment or diagnosis **(§§1910.1025(j)(4)(i) and (ii))**.

Employers must remove employees from exposure to lead for up to 18 months when blood lead level is measured at 60 µg/100 g blood or higher or at an average of 50 µg/100 g blood over time

(§§1910.1025(k)(1)(i)(A) and (B), and (k)(2)(i)). Employees must also be removed if they have a medical condition which puts them at risk **(§1920.1025(k)(1)(ii)(A))**. During medical removal employers must maintain the employee's benefits such as earnings and seniority **(§1910.1025(k)(2)(ii))**.

The standard also has requirements for housekeeping, hygiene facilities and practices, employee information and training, hazard communication, recordkeeping, and observation of monitoring **(§§1910.1025(h) through (i), and (n) through (o))**.

Methylene Chloride

Employee exposure to methylene chloride (MC) must be limited to an airborne concentration of 25 parts MC per million parts of air (25 ppm) as an 8-hour time-weighted average (TWA) and 125 parts MC per million parts of air (125 ppm) as a 15-minute short-term exposure limit (STEL) **(§§1910.1052(c)(1) and (2))**.

Employers must determine each employee's initial exposure through breathing zone air samples that represent full-shift, 8-hour TWA, or 15-minute STEL **(§§1910.1052(d)(1)(i)(A) and (B), and (d)(2))**. Employers must conduct periodic monitoring for employees exposed above the action level, 8-hour TWA, or 15-minute STEL and additional monitoring when necessary **(§§1910.1052(d)(3) and (4))**. Employees have the right to observe monitoring and must be notified of results **(§§1910.1052(d)(5)(i) and (d)(6)(i))**.

Employers must establish a regulated area wherever exposures to airborne concentrations of MC may exceed the TWA or STEL **(§1910.1052(e)(1))**. Regulated areas must be demarcated, access must be limited to authorized persons, and respiratory protection must be worn **(§§1910.1052(e)(2), (e)(6), (g)(1)(i), and (l)(3)(ii))**.

Employers must institute engineering and work practice controls to reduce and maintain employee exposure at or below the TWA and STEL **(§1910.1052(f)(1))**. Employers are not permitted to rotate employees to comply with permissible exposure limits **(§1910.1052(f)(2))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls are infeasible or insufficient to reduce employee exposure to permissible levels and must implement a respiratory protection

program **(§§1910.1052(f)(1), (g)(1), and (g)(2)(i))**. Half masks are not permitted **(§1910.1052(g)(3)(i))**. Employers must also provide appropriate protective clothing and equipment when employees could have MC-induced skin or eye irritation **(§1910.1052(h)(1))**.

Employers must institute a medical surveillance program for all employees who are or may be exposed to MC at or above the action level for at least 30 days a year, above the TWA or STEL for at least 10 days a year, or as determined by a licensed healthcare professional **(§§1910.1052(j)(1)(i) and (ii))**. Employers must make available medical examinations and consultations at least annually **(§1910.1052(j)(4)(ii))**.

Employers must make appropriate arrangements for emergencies, including providing respiratory protection, hygiene facilities and medical surveillance to employees under these conditions **(§§1910.1052(g)(1)(v), (g)(2)(ii), (g)(3)(ii), (g)(4), (i)(2), (j)(1)(iii), (j)(6)(i), and (j)(8)(iii))**.

Employers must communicate cancer, skin and eye irritation, and cardiac, liver, and central nervous system effects associated with MC in an understandable manner on labels and in safety data sheets **(§1910.1052(k))**. Employers must provide affected employees with information and training on MC at the time of initial assignment and at least annually thereafter **(§§1910.1052(l)(1) and (2))**.

Employers must establish and maintain an accurate record of MC exposure monitoring data, objective data relied upon to support an exemption from requirements of the standard or used in place of initial monitoring; and a record for each employee subject to medical surveillance requirements of this section.

Methylenedianiline

Employee exposure to methylenedianiline (MDA) must be limited to an airborne concentration of 10 parts MDA per billion parts of air (10 ppb) as an 8-hour time-weighted average (TWA) and 100 parts MDA per billion parts of air (100 ppb) as a 15-minute short-term exposure limit (STEL) **(§1910.1050(c))**.

Employers must determine each employee's initial exposure through breathing zone air samples that represent full-shift, 8-hour TWA, and 15-minute short-term exposures **(§§1910.1050(e)(1)(i) and**

(e)(2)). Employers must conduct periodic monitoring for employees exposed above the action level, 8-hour TWA, or 15-minute STEL and additional monitoring when necessary **(§§1910.1050(e)(3)(i) and (ii), and (e)(5))**. Employees have the right to observe monitoring and must be notified of results **(§§1910.1050(e)(7)(i) and (o)(1))**. Employers must routinely visually inspect the hands, face and forearms of employees potentially exposed to MDA **(§1910.1050(e)(8))**.

Employers must establish a regulated area wherever exposures to airborne concentrations of MDA may exceed the TWA **(§1910.1050(f)(1)(i))**. Regulated areas must be demarcated, access must be limited to authorized persons, and protective clothing and equipment must be worn **(§§1910.1050(f)(2) through (4), and (k)(1)(i))**.

Employers must institute engineering and work practice controls to reduce and maintain employee exposure at or below the TWA and STEL and maintain a written compliance program **(§§1910.1050(g)(1)(i) and (g)(2)(i))**. Employers are not permitted to rotate employees to comply with permissible exposure limits **(§1910.1050(g)(3))**.

Employers must provide each employee with an appropriate respirator that must be used when engineering and work practice controls are infeasible or insufficient to reduce employee exposure to permissible levels and must implement a respiratory protection program **(§§1910.1050(g)(1)(ii) and (h)(1)(iii))**. When employees could have MDA-induced skin or eye irritation, employers must also provide appropriate personal protective clothing and equipment, which must be properly removed, stored, cleaned and replaced, and follow appropriate hygiene and housekeeping practices **(§§1910.1050(i)(1) through (3), and (j))**.

Employers must institute a medical surveillance program for all employees who may be exposed to MDA at or above the action level for at least 30 days a year, who are subject to dermal (skin) MDA exposure for at least 15 days a year, or who show signs or symptoms associated with MDA exposure **(§§1910.1050(m)(1)(i)(A) through (B), and (E))**. Employers must make available medical examinations and consultations before initial assignment, at least annually thereafter, and under other conditions **(§§1910.1050(m)(2)(i), (m)(3)(i), and (m)(5))**.

Employers must develop and implement a written plan for each workplace where there is a possibility of an emergency **(§1910.1050(d)(1)(i))**. The plan must cover respiratory protection for employees engaged in correcting emergency conditions, emergency action procedures, and fire prevention elements **(§§1910.1050(d)(1)(ii) and (iii))**.

Employers must post and maintain legible signs for regulated areas and labels on containers of MDA **(§§1910.1050(k)(1)(i) and (ii))**. Employers must provide affected employees with information and training on MDA at the time of initial assignment and at least annually thereafter **(§1910.1050(k)(4)(i))**.

This standard also contains requirements for medical removal and recordkeeping **(§§1910.1050(m)(9)(v) and (n))**.

Hazard Communication

The purpose of the Hazard Communication standard is to ensure that the hazards of all chemicals produced or imported are classified, and that information concerning the classified hazards is transmitted downstream to employers and employees. OSHA has modified its Hazard Communication standard to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3. This modification to the standard will internationally harmonize OSHA's classification and hazard communication system, establishing uniform pictograms, hazard phrases, label elements, and safety data sheets. This update to the Hazard Communication standard will improve the quality and consistency of information, enhance the effectiveness of hazard communication, ensure that employees are apprised of the chemical hazards to which they may be exposed, and reduce the incidence of chemical-related occupational illnesses and injuries.

Hazard Communication requires chemical manufacturers and importers to evaluate the chemicals they produce or import, and provide hazard information to downstream employers and employees. This transmittal of information is to be accomplished by means of labeling and safety data sheets **(§§1910.1200(f)(1) and (g)(1))**. Label elements, such as signal words, hazard statements, and pictograms have been harmonized, and assigned to each hazard class and category.

In order to classify chemical hazards, the importer or manufacturer is provided with specific criteria and detailed instructions for hazard evaluation and determinations. Additionally, mandatory Appendices A and B provide classification guidance for Health Hazards and Physical Hazards, respectively **(§1910.1200(d)(1))**. Once a chemical has been classified, the label/safety data sheet preparer can obtain the relevant harmonized information from the Appendixes of the standard.

Chemical manufacturers, importers, or distributors must ensure that each container of classified hazardous chemicals leaving the workplace is labeled, tagged, or marked with the following information: a product identifier, signal words, hazard statements, pictograms, precautionary statements, and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party **(§1910.1200(f)(1))**. Chemical manufacturers or importers must ensure that distributors and employers are provided an appropriate safety data sheet with their initial shipment, and with the first shipment after a safety data sheet is updated **(§1910.1200(g)(6)(i))**.The employer must maintain, in the workplace, copies of the required safety data sheets for each hazardous chemical and must ensure that they are readily accessible during each work shift to employees when they are in their work areas **(§1910.1200(g)(8))**.

Employers must develop, implement, and maintain at each workplace a written, comprehensive hazard communication program which at least describes how the criteria for labels and other forms of warnings, safety data sheets, and employee information and training will be met, and which also includes a list of the hazardous chemicals known to be present using a product identifier that is referenced on the appropriate safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas); and, the methods the employer will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels), and the hazards associated with chemicals contained in unlabeled pipes in their work areas **(§§1910.1200(e)(1)(i) and (e)(1)(ii))**.

Employers are required to provide effective information and train employees on the hazards of the hazardous chemicals in the work area. At a minimum, employee training must include: methods and

observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released); the physical and health hazards of the chemicals in the work area; the measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and the details of the hazard communication program developed by the employer, including an explanation of the labels received on shipped containers and the workplace labeling system used by their employer; the safety data sheet, including the order of information and how employees can obtain and use the appropriate hazard information **(§§1910.1200(h)(3)(i) through (iv))**.

Exposure to Hazardous Chemicals in Laboratories

The requirements in 29 CFR 1910.1450 apply to all employers engaged in the laboratory use of hazardous chemicals **(§1910.1450(a)(1))**. "Laboratory use of hazardous chemicals" is defined as the handling or use of hazardous chemicals in which all of the following conditions are met: (i) chemical manipulations are carried out on a "laboratory scale"; (ii) multiple chemical procedures or chemicals are used; (iii) the procedures involved are not part of a production process, nor in any way simulate a production process; and (iv) "protective laboratory practices and equipment" are available and in common use to minimize the potential for employee exposure to hazardous chemicals **(§1910.1450(b))**.

For laboratory uses of OSHA regulated substances, the employer must assure that laboratory employees' exposures to such substances do not exceed the permissible exposure limits specified in 29 CFR part 1910, subpart Z **(§1910.1450(c))**.

Where there is reason to believe that exposure levels of a hazardous substance routinely exceed the action level (or in the absence of an action level, the PEL), employers must conduct initial monitoring to measure each employee's exposure **(§1910.1450(d)(1))**.

If the initial monitoring discloses employee exposure over the action level (or in the absence of an action level, the PEL), the employer must immediately comply with the exposure monitoring requirements of the relevant standard **(§1910.1450(d)(2))**. Termination of monitoring of the particular hazardous substance, requiring periodic monitoring, may only be determined in accord with the requirements under the relevant standard **(§1910.1450(d)(3))**. Within 15 days of receipt of any monitoring results, the employer must notify affected employees of the results in writing either individually or by posting results in an appropriate location that is accessible to employees **(§1910.1450(d)(4))**.

Where hazardous chemicals are used in the workplace (laboratory), the employer must develop a written Chemical Hygiene Plan and carry out its provisions **(§1910.1450(e)(1))**. This plan must be made readily available to employees and their representatives, as well as be capable of protecting employees from health hazards associated with the hazardous chemicals in that laboratory and keeping exposures below the permissible exposure limits specified in 29 CFR part 1910, subpart Z **(§§1910.1450(e)(1)(i) and (ii), and (e)(2))**.

Ionizing Radiation

Employers must be responsible for proper controls to prevent any employee from being exposed to ionizing radiation in excess of acceptable limits **(§1910.1096(c)(1))**. No employer may possess, use, or transfer sources of ionizing radiation in such a manner as to cause any individual to receive a dose in excess of those in Table G-18, below, **(§1910.1096(b)(1))**, with the exception that an employer may permit an individual to receive doses to the whole body greater than those permitted so long as: (1) During the calendar quarter[4] the dose to the whole body must not exceed 3 rems; (2) the dose to the whole body, when added to the accumulated occupational dose must not exceed 5 (N-18) rems, where "N" equals the individual's age in years at his/her last birthday; and (3) the employer maintains adequate past and current exposure records **(§§1910.1096(b)(2)(i) through (iii))**.

[4] Calendar quarter means any 3-month period determined as per §1910.1096(b)(4).

Each radiation area must be conspicuously posted with appropriate signs and/or barriers **(§1910.1096(e))**.

Employers must maintain records of the radiation exposure to all employees for whom personnel monitoring is required **(§§1910.1096(b)(2)(iii) and (n)(1))**.

Table G-18

	Rems[5] per calendar quarter
Whole body: Head and trunk; active blood-forming organs; lens of eyes; or gonads	1.25
Hands and forearms; feet and ankles	18.75
Skin of whole body	7.5

DOT Markings, Placards and Labels

Employers who receive shipments of hazardous materials that are required to be marked, placarded or labeled in accord with the U.S. Department of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 171 through 180) must retain such warnings on the packaging and transport until the hazardous materials are removed **(§1910.1201(a))**.

Other shipments received by freight container, rail freight car, motor vehicle, or transport vehicle that are required to be marked or placarded in accord with the DOT Hazardous Materials Regulations must retain those markings and placards on the freight container, rail freight car, motor vehicle or transport vehicle until the hazardous materials are sufficiently removed **(§1910.1201(b))**.

Personal Protective Equipment

Proper protective equipment, including personal protective equipment (PPE) for eyes, face, head, and extremities, protective clothing, respiratory devices, hearing protection, and protective shields and barriers, must be provided, used, and maintained in

[5] Rem is a measure of the dose of any ionizing radiation to body tissue in terms of its estimated biological effect relative to a dose of 1 roentgen (r) of x-rays (1 millirem [mrem] = 0.001 rem). The relation of the rem to other dose units depends on the biological effect under consideration and upon the conditions for irradiation.

a sanitary and reliable condition whenever there is a hazard from processes or environment, chemical hazards, radiological hazards, or mechanical irritants that may cause injury or illness to employees through absorption, inhalation, or physical contact **(§1910.132(a))**.

The above mentioned PPE, including their replacement, must be provided at no cost to the employee **(§§1910.132(h)(1) and (h)(5))**. However, employer-required payment does not apply to non-specialty safety-toe protective footwear (including steel-toe shoes or steel-toe boots) and non-specialty prescription safety eyewear, provided that the employer permits such items to be worn off the job-site **(§1910.132(h)(2))**.

Where employees provide their own protective equipment, the employer is responsible for assuring its adequacy, proper maintenance, and sanitation **(§1910.132(b))**.

On occasions where the employer provides metatarsal guards and allows the employee, at his or her request, to use shoes or boots with built-in metatarsal protection, the employer is not required to reimburse the employee for the shoes or boots **(§1910.132(h)(3))**. In addition, employers are not required to pay for: logging boots required by **§1910.266(d)(1)(v)**; everyday clothing, such as long-sleeve shirts, long pants, street shoes, and normal work boots; or ordinary clothing, skin creams, or other items used solely for protection from weather, such as winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, ordinary sunglasses, and sunscreen **(§1910.132(h)(4))**.

The employer must assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (head, eye, face, foot, hand, or respiratory protection). If such hazards are present, or are likely to be present, the employer must select and have employees use the type(s) of personal protective equipment (PPE) that will protect them from the hazards identified in the hazard assessment. Employers must also communicate the selection decisions to employees, and ensure that the PPE chosen for them properly fits **(§1910.132(d))**.

The employer must provide training to each employee who is required to use PPE, so they know at least the following: when PPE is necessary; what PPE is necessary; how to properly don (put on), doff (take off), adjust, and wear PPE; the limitations of the PPE; and the proper care, maintenance, useful life, and disposal of PPE **(§1910.132(f))**.

Eye and Face Protection

Employers must ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation **(§1910.133(a)(1))**.

Protective eye and face protection devices must comply with any of the following consensus standards:

- ANSI Z87.1-2003, "American National Standard Practice for Occupational and Educational Eye and Face Protection" **(§1910.133(b)(1)(i))**,
- ANSI Z87.1-1989 (R-1998), "American National Standard Practice for Occupational and Educational Eye and Face Protection" **(§1910.133(b)(1)(ii))**, or
- ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection" **(§1910.133(b)(1)(iii))**.

Protective eye and face protection devices that the employer demonstrates are at least as effective as protective eye and face protection devices that are constructed in accord with one of the above consensus standards will be deemed to be in compliance with the requirements of this section **(§1910.133(b)(2))**.

Eyewash/Drench Shower

Suitable facilities for quick drenching or flushing of the eyes and body must be provided within the work area for immediate emergency use if there is a possibility that an employee might be exposed to injurious, corrosive materials **(§1910.151(c))**.

Foot Protection

Foot protective equipment must be worn when working in areas where there is a danger of foot injuries due to falling or rolling objects or objects piercing the sole, and where employees' feet are exposed to electrical hazards **(§1910.136(a)).** Protective footwear must comply with any of the following consensus standards:

- ASTM F-2412-2005, "Standard Test Methods for Foot Protection," and ASTM F-2413-2005, "Standard Specification for Performance Requirements for Protective Footwear" **(§1910.136(b)(1)(i))**;
- ANSI Z41-1999, "American National Standard for Personal Protection – Protective Footwear" **(§1910.136(b)(1)(ii))**; or
- ANSI Z41-1991, "American National Standard for Personal Protection – Protective Footwear" **(§1910.136(b)(1)(iii)).**

In the logging industry, employers must assure that each employee wears foot protection, such as heavy-duty logging boots that are waterproof or water repellent that covers and provides support to the ankle. The employer must assure that each employee who operates a chain saw wears foot protection that is constructed with cut-resistant material which will protect the employee against contact with a running chain saw. Sharp, calk-soled boots or other slip-resistant type boots may be worn where the employer demonstrates that they are necessary for the employee's job, the terrain, the timber type, and the weather conditions, provided that foot protection otherwise required by this paragraph is met **(§1910.266(d)(1)(v))**.

Electrically conductive shoes should be considered as a required, supplementary form of protection for work activities in which there is a danger of fire or explosion from the discharge of static electricity. Electrical-hazard or dielectric (nonconductive) footwear should be considered as a required, supplementary form of protection when an employee standing on the ground is exposed to hazardous step or touch potential (the difference in electrical potential between the feet or between the hands and feet). Such footwear should also be worn when primary forms of electrical protective equipment, such as rubber insulating gloves and blankets, do not provide complete protection for an employee standing on the ground.

Head Protection

Head protection equipment, such as helmets and hard hats must be worn when there is a possible danger of head injuries from impact, flying or falling objects, or electrical shock and burns **(§§1910.135(a)(1) and (a)(2))**.

Head protection must comply with any of the following consensus standards:

- ANSI Z89.1-2009, "American National Standard for Industrial Head Protection" **(§1910.135(b)(1)(i))**;
- ANSI Z89.1-2003, "American National Standard for Industrial Head Protection" **(§1910.135(b)(1)(ii))**; or
- ANSI Z89.1-1997, "American National Standard for Personnel Protection – Protective Headwear for Industrial Workers – Requirements" **(§1910.135(b)(1)(iii))**.

Head protection devices that the employer demonstrates are at least as effective as head protection devices that are constructed in accord with one of the above consensus standards will be deemed to be in compliance with the requirements of this section **(§1910.135(b)(2))**.

Respiratory Protection

Suitable respirators selected on the basis of the hazard to which the worker is exposed must be provided by the employer as necessary to protect the health of the workers **(§1910.134(a)(2))**.

Where respirators are required, the employer must establish and maintain a respiratory protection program. The program must be regularly evaluated to determine its continued effectiveness **(§§1910.134(a)(2) and (c)(1))**.

The employer must include in the program, as applicable, the procedures for selecting respirators for use in the workplace; medical evaluations of employees required to use respirators; fit testing procedures for tight-fitting respirators; procedures for proper use of respirators in routine and reasonably foreseeable emergency situations; procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators; procedures to ensure adequate air quality, quantity, and

flow of breathing air for atmosphere-supplying respirators; training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations; training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance; and procedures for regularly evaluating the effectiveness of the program **(§§1910.134(c)(1)(i) through (1)(ix))**.

Employers must provide each respirator user with a respirator that is clean, sanitary, and in good working order. Respirators must be cleaned and disinfected as often as necessary to be maintained in a sanitary condition **(§1910.134(h)(1)(i))**.

All respirators must be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they must be packed or stored to prevent deformation of the facepiece and exhalation valve **(§1910.134(h)(2)(i))**.

The employer must ensure that (1) all respirators used in routine situations must be inspected before each use and during cleaning **(§§1910.134(h)(3)(i)(A))**, and (2) all respirators maintained for use in emergency situations must be inspected at least monthly and in accord with the manufacturer's recommendations, and must be checked for proper function before and after each use **(§1910.134(h)(3)(i)(B))**.

When inspecting respirators, the employer must ensure that the equipment is checked for function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; that there are not any signs of deterioration; and that the elastomeric parts are still pliable **(§§1910.134(h)(3)(ii)(A) and (B))**.

Employers must provide effective training to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually and more often if necessary **(§1910.134(k))**.

From the training received, employees must be able to demonstrate knowledge of at least the following: why the respirator is necessary and how improper fit, usage, or maintenance can compromise

the protective effect of the respirator; what the limitations and capabilities of the respirator are; how to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions; how to inspect, put on and remove, use, and check the seals of the respirator; what the procedures are for maintenance and storage of the respirator; how to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and the general requirements of the OSHA Respiratory Protection standard **(§§1910.134(k)(1)(i) through (vii))**.

Training must be provided to employees before requiring them to use a respirator in the workplace and must be conducted in a manner that is understandable to them **(§§1910.134(k)(2) and (3))**.

Fall Protection

Employees on working platforms must be protected by a personal fall arrest system **(§1910.66(j))**. All fall arrest system connectors must be drop forged, constructed with pressed or formed steel, or equivalent materials. Connectors must also have a corrosion-resistant finish, and all surfaces and edges must be smooth to prevent damage to interfacing parts of the system **(§1910.66, Appendix C, paragraph d)**.

OSHA standards **(§1910.66, Appendix C, paragraphs (c)(1) through (c)(11))** also require that:

- Lanyards and vertical lifelines have a minimum breaking strength of 5,000 pounds (22.2 kN);
- Self-retracting lifelines and lanyards that automatically limit free fall distance to two feet (0.61 m) or less have components capable of sustaining a minimum static tensile load of 3,000 pounds (13.3 kN) applied to the device when fully extended;
- Self-retracting lifelines and lanyards that do not limit free fall distance, ripstitch lanyards, and tearing and deforming lanyards be capable of sustaining a minimum tensile load of 5,000 pounds (22.2 kN) applied to the device when fully extended;
- Dee-rings and snap-hooks be capable of sustaining a minimum tensile load of 5,000 pounds (22.2 kN), in addition to being 100 percent proof-tested to a minimum tensile load of 3,600 pounds (16 kN) without cracking, breaking, or taking permanent deformation;

- Snap-hooks be sized to avoid unintentional disengagement due to depression, or be of locking type to prevent disengagement;
- Horizontal lifelines, where used, be designed, and installed as part of a complete personal fall arrest system, with a safety factor of at least two, under the supervision of a qualified person; anchorages be capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or designed, installed, and used as part of a complete personal fall arrest system, with a safety factor of at least two, under the supervision of a qualified person; and
- Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body harnesses, be made from synthetic fibers or wire rope.

Personal fall arrest systems must be rigged so that an employee can neither free fall more than six feet (1.8 m), nor contact any lower level **(§1910.66, Appendix C, paragraph (e)(3))**. When stopping a fall, personal fall arrest systems must be capable of: limiting the maximum arresting force to 1,800 pounds (8 kN); bringing a worker to a complete stop and limit their maximum deceleration distance traveled to 3.5 feet (1.07 m); and having sufficient strength to withstand twice the potential impact energy of the worker **(§1910.66 Appendix C, paragraph (d))**.

Care must be taken to ensure that equipment is appropriately rigged to avoid disengagement. Snap-hooks, unless of a locking type, must not be directly attached to webbing, rope or wire rope; another snap-hook; a dee-ring with another snap-hook or other connector attached; a horizontal lifeline; or any other incompatible object that could cause the snap-hook to depress and release itself **(§1910.66, Appendix C, paragraph (e))**.

Equipment/components used for personal fall arrest systems must only be used for the purpose of employee fall protection **(§1910.66, Appendix C, paragraph (e)(6))**. Such systems must be inspected prior to each use for mildew, wear, damage and other deterioration, and defective components must be removed from service if their strength or function may be adversely affected **(§1910.66, Appendix C, paragraph (f))**. Further, any personal fall arrest systems or

components subjected to impact loading must be immediately removed from service and never used again for employee fall protection, unless inspected and determined by a competent person to be undamaged and suitable for reuse **(§1910.66, Appendix C, paragraph (e)(7))**.

Before using a personal fall arrest system and after any component or system is changed, employees must be trained in the recognition of, and preventive measures for, the safety hazards associated with their individual work tasks; general recognition and prevention of safety hazards associated with the use of working platforms; emergency action plan procedures; work procedures; and personal fall arrest system inspection, care, use and system performance **(§1910.66, Appendix C, paragraphs (i)(1)(ii)(A) through (E), and (e)(9))**.

Medical Services

Medical Records and Employee Exposure Records

Employers must, upon request, make sure that each employee or their designated representative has access to their exposure records **(§1910.1020(e)(2)(i)(A))**. Upon an employee's first entering into employment, and at least annually thereafter, each employer must inform employees of the existence, location, and availability of their medical records; the person responsible for maintaining and providing access to their records; and their right of access to these records **(§§1910.1020(g)(1)(i) through (iii))**.

Medical Services and First Aid

The employer must ensure the ready availability of medical personnel for advice and consultation on matters of occupational health **(§1910.151(a))**.

When a medical facility for treatment of injured employees is not available in near proximity to the workplace, a person or persons must be adequately trained to render first aid. First-aid supplies must be well maintained and readily available for use by trained first-aid personnel **(§1910.151(b))**.

Fire Protection

Only approved portable fire extinguishers must be used **(§1910.157(c)(2))**. If portable fire extinguishers are provided for employee use, the employer must mount, locate, and identify them so they are readily accessible to employees without subjecting the employees to possible injury. These fire extinguishers must be maintained in a fully charged and operable condition and kept in their designated places at all times except during use **(§1910.157(c))**.

Employers must ensure that the appropriate types of portable fire extinguishers are selected and appropriately distributed in the workplace **(§1910.36(d))**. Extinguishers must also be visually checked monthly, maintenance checked annually, and hydrostatically tested at the intervals indicated **(§1910.157(e) and (f))**.

Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer also must provide educational and training programs to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage firefighting **(§1910.157(g)(1))**.

Welding, Cutting and Brazing

Welding General Requirements

Arc welding cables with damaged insulation or exposed, bare conductors must be replaced **(§1910.254(d)(9)(iii))**.

For special considerations when welding operations require fluxes, coverings, coatings, or alloys involving fluorine compounds, zinc, lead, beryllium, cadmium, or mercury, employers should refer to **§§1910.252(c)(5) through (12)**.

Mechanical ventilation must be provided when welding or cutting is performed either:

- In a space of less than 10,000 cubic feet (284 cubic meters) per welder **(§1910.252(c)(2)(i)(A))**;
- In a room having a ceiling height of less than 16 feet (5 m) **(§1910.252(c)(2)(i)(B))**; or

- In confined spaces or where the welding space contains partitions, balconies, or other structural barriers to the extent that they significantly obstruct cross ventilation **(§1910.252(c)(2)(i)(C))**.

Proper shielding and eye protection to prevent exposure of personnel from welding hazards must be provided **(§§1910.252(b)(2)(i)(B) through (D) and (F) through (H))**.

Where the work permits, the welder should be enclosed in an individual booth painted with a finish of low reflectivity such as zinc oxide (an important factor for absorbing ultraviolet radiations) and lamp black, or must be enclosed with noncombustible screens similarly painted. Booths and screens must permit circulation of air at floor level. Workers or other persons adjacent to the welding areas must be protected from the rays by noncombustible or flameproof screens or shields or must be required to wear appropriate goggles **(§1910.252(b)(2)(iii))**.

Proper precautions (isolating welding and cutting, removing fire hazards and combustibles, and providing a fire watch) for fire prevention must be taken in areas where welding or other "hot work" is being done **(§1910.252(a))**.

Welding in Confined Spaces

All welding and cutting operations that are performed in confined spaces (such as a tank, boiler, or a pressure vessel) must be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency **(§1910.252(c)(4)(i))**.

In such circumstances where it is impossible to provide such ventilation, airline respirators approved by the National Institute for Occupational Safety and Health (NIOSH) for this purpose must be used **(§1910.252(c)(4)(ii))**.

In areas immediately hazardous to life, full-facepiece, pressure-demand, self-contained breathing apparatus or a combination full-facepiece, pressure-demand supplied-air respirator with an auxiliary, self-contained air supply must be used. The breathing equipment must be approved by NIOSH under 42 CFR part 84 **(§1910.252(c)(4)(iii))**.

Where welding operations are performed in confined spaces and where welders and helpers are provided with airline respirators or self-contained breathing equipment, a worker must be stationed on the outside of such confined spaces to ensure the safety of those working within **(§1910.146(d)(6) and §1910.252(c)(4)(iv))**.

Oxygen must never be used for ventilation **(§1910.252(c)(4)(v))**.

Materials Handling and Storage

Chains, Cables, Ropes and Hooks

Hooks and chains used with overhead or gantry cranes must be visually inspected daily. Monthly inspections must be done with a certification record, dated, and signed by the inspector and kept on file readily available to appointed personnel. Running ropes must be thoroughly inspected at least monthly and a certification record kept on file and readily available to appointed personnel. A certification record must include: the date of inspection, the signature of the person who performed the inspection, and the serial number, or other identifier **(§§1910.179(j)(1)(ii)(a) and (b), (j)(2), and (m)(1))**. All U-bolt clips on hoist ropes on overhead and gantry cranes must be installed so that the U-bolt is in contact with the dead end (short or nonload carrying end) of the rope. Clips must be installed in accord with the clip manufacturer's recommendation. All nuts on newly installed clips must be tightened after 1 hour of use **(§1910.179(h)(2)(v))**.

Hoist ropes on crawler, locomotive, and truck cranes must be free from kinks or twists and must not be wrapped around the load **(§§1910.180(h)(2)(i) and (h)(3)(ii)(a))**.

Slings and their fastenings and attachments must be inspected daily before use. Damaged or defective slings must be immediately removed from service **(§1910.184(d))**.

Hooks that have been opened more than 15 percent of the normal throat opening measured at the narrowest point or hooks that are twisted more than 10 degrees out of alignment are to be evaluated before use to determine if they are safe for the intended load **(§1910.180(d)(3)(v) and §1910.184(e)(9)(ii))**.

Cranes (Overhead and Mobile), Hoists and Derricks

All functional operating mechanisms, air and hydraulic systems, chains, ropes, slings, hooks, and other lifting equipment must be visually inspected daily **(§1910.179(j)(2), §1910.180(d)(3), and §1910.184(d))**.

Complete inspection of the crane must be performed at 1-month to 12-month intervals depending on its activity, severity of service, and environmental conditions. The inspection must include the following areas: identification of deformed, cracked, corroded, worn, or loose members or parts; the brake system; limit indicators (wind, load); power plant, and electrical apparatus **(§1910.179(j)(3), §1910.180(d)(4), and §1910.181(d)(3)(i))**.

Unsafe conditions disclosed by the inspection requirements must be corrected before the operation is resumed and the crane must not be operated until all guards have been reinstalled **(§1910.179(l)(3)(i), §1910.180(f), and §1910.181(f)(3)(i))**.

Overhead cranes must have stops at the limits of travel of the trolley. Bridge and trolley bumpers or equivalent automatic devices must be provided. Bridge trucks must have tail sweeps **(§§1910.179(e)(1) through (4))**.

The rated load of the crane must be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist must have its rated load marked on it or its load block, and this marking must be clearly legible from the ground or floor **(§1910.179(b)(5))**.

Pendant control boxes must be clearly marked for identification of functions **(§1910.179(g)(1)(v))**.

There must be no hoisting, lowering, or traveling while any employee is on the load or hook **(§1910.179(n)(3)(v), §1910.180(h)(3)(v), and §1910.181(i)(3)(v))**.

Storage

All stored materials (containers, bags, bundles, etc.) stacked in tiers must be stacked, blocked, interlocked, and limited in height so that they are secure against sliding or collapse **(§1910.176(b))**. Storage areas must be kept free from accumulation of materials that

constitute hazards from tripping, fire, explosion or pest harborage. Vegetation control will be exercised when necessary **(§1910.176(c))**. Where mechanical handling equipment is used, sufficient safe clearance must be allowed for aisles, at loading docks, through doorways, and whenever turns or passage must be made. Aisles and passageways must be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways must be appropriately marked **(§1910.176(a))**.

Hazardous Equipment and Machinery

Air Receivers

All new air receivers installed must be designed and constructed to meet the standards of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section VIII, 1968 **(§1910.169(a)(2)(i))**.

Drain pipes and valves must be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water, which must be done frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver. Adequate automatic traps may be installed in addition to drain valves **(§1910.169(b)(2))**.

All air receivers must be equipped with an indicating pressure gauge (so located as to be readily visible) and with one or more spring-loaded safety valve(s) **(§1910.169(b)(3)(i))**. All safety valves must be tested frequently and at regular intervals to determine whether they are in good operating condition **(§1910.169(b)(3)(iv))**.

Belt Sanding Machines

Belt sanding machines used for woodworking must be provided with guards at each nip point where the sanding belt runs on to a pulley. These guards must effectively prevent the operator's hands and fingers from coming into contact with the nip points. Also, the unused run of the sanding belt must be guarded to prevent accidental contact **(§1910.213(p)(4))**.

Use of Compressed Air

Compressed air must not be used for cleaning purposes unless the pressure does not exceed 30 pounds (13.5 kilograms) per square inch (6.5 square centimeters) when the nozzle end is obstructed or dead-ended, and then only with effective chip guarding and personal protective equipment **(§1910.242(b))**.

Fan Blades

When the periphery of the blades of a fan is less than 7 feet (2.1 meters) above the floor or working level, the blades must be guarded. The guard must have openings no larger than 1/2 inch (12.7 millimeters) **(§1910.212(a)(5))**.

Forklift Trucks (Powered Industrial Trucks)

If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck must be taken out of service until it has been restored to safe operating condition **(§1910.178(p)(1))**.

High Lift Rider trucks must be equipped with substantial overhead guards unless operating conditions do not permit **(§1910.178(e)(1))**.

Forklift trucks must be equipped with vertical-load, backrest extensions when the types of loads present a hazard to the operators **(§1910.178(e)(2))**.

The brakes of trucks must be set and wheel blocks (i.e., chocks) must be placed under the rear wheels to prevent the movement of trucks, trailers, or railroad cars while loading or unloading **(§1910.178(m)(7))**.

Only a trained and authorized operator must be permitted to operate a powered industrial truck. Methods must be devised to train operators in the safe operation of powered industrial trucks **(§1910.178(l))**. Further, workers under 18 years of age are not permitted to operate forklift trucks or powered industrial trucks **(29 CFR 570.58, Order 7)**. For more information on youth-worker requirements see OSHA Safety and Health Information Bulletin, SHIB 03-09-30.

Hand Tools

Portable electric equipment must be handled in a manner that will not cause damage. When the cord and plug connected tools are relocated they must be visually inspected before use on any shift for external defects (such as loose parts, deformed and missing pins, or damage to outer jacket or insulation) and for evidence of possible internal damage (such as pinched or crushed outer jacket) **(§§1910.334(a)(1) and (a)(2))**.

Each employer must be responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees **(§1910.242(a))**.

Portable electrical tools and equipment, except when UL approved double insulated construction (and distinctively marked as such), must be properly grounded **(§1910.304(g)(6)(vii)(B))**.

All hand tools must be kept in a serviceable condition. Handles and guards of tools must be kept tight in the tool and wooden handles must be free of splinters and sharp edges. Heads of shock, impact-driven and driving tools must be properly shaped, free of mushroomed heads, and are sufficiently sharp. If the cutting edge of a tool becomes dull, it must be sharpened in accord with manufacturer's specifications. When the head of any shock, impact-driven or driving tool begins to chip, it must be repaired or removed from service **(§1910.266(e)(1))**.

All non-current-carrying metal parts of portable equipment and fixed equipment including their associated fences, housings, enclosures, and supporting structures must be grounded **(§§1910.304(g)(6)(vi), (g)(6)(vii), and (g)(8)(i))**.

For construction-like activities, any 125-volt, single-phase, portable electric tool or equipment and its associated extension cord set that is connected to a 15-, 20-, or 30-ampre outlet must be protected by a ground-fault circuit interrupter **(§1910.304(b)(3)(ii)(A))**.

Machine Guarding

Machine guarding must be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts,

flying chips, and sparks. The guard must be such that it does not pose an accident hazard in itself. Some examples of guarding methods include barrier guards, two-hand tripping devices, and electronic safety devices **(§§1910.212(a)(1) and (2))**.

The point of operation of machines whose operation exposes an employee to injury must be guarded. The guarding device must be so designed as to prevent the operator from having any part of his body in the danger zone during the operating cycle **(§1910.212(a)(3)(ii))**. Special handtools for placing and removing material must permit easy handling of material without the operator placing a hand in the danger zone. However, such tools must only be used to supplement protection provided and not replace the use of other required guarding as listed above **(§1910.212(a)(3)(iii))**.

Some of the machines that usually require point of operation guarding are guillotine cutters, shears, alligator shears, power presses, milling machines, power saws, jointers, portable power tools, forming rolls, and calenders **(§§1910.212(a)(3)(iv)(a) through (i))**.

Fixed Machinery

Machines designed for a fixed location must be securely anchored to prevent walking or moving during operation **(§1910.212(b))**.

Mechanical Power Presses

The employer must provide and ensure the usage of point-of-operation guards or properly applied and adjusted point-of-operation devices to prevent entry of hands or fingers into the point of operation by reaching through, over, under, and around the guard on every operation performed on a mechanical power press. This requirement does not apply when the point-of-operation opening is 1/4 inch (6 mm) or less **(§§1910.217(c)(1)(i) and (ii), and (c)(2)(i)(a))**. A point-of-operation guard must also be designed, constructed, and adjusted so that no pinch points between the guard and moving machine parts are created; the possibility of misuse or removal of essential parts is minimized through the utilization of fasteners not readily removable by operator; maximum visibility of the point of operation is provided; and easy inspection can be performed **(§§1910.217(c)(2)(i) and (c)(2)(i)(c) through (f))**.

Hand and foot operations must be provided with guards to prevent inadvertent activation of the press **(§§1910.217(b)(4)(i) and (b)(5)(i) through (ii))**.

The employer must provide and enforce the use of safety blocks whenever dies are being adjusted or repaired in the press. Brushes, swabs, lubricating rolls, and automatic or manual pressure guns, or other tools must be provided for lubrication so that operators and diesetters must not be required to reach into the point of operation or other hazard areas **(§§1910.217(d)(9)(iv) and (v))**.

Presence sensing devices must only be used for normal production operations. Operations that involve full revolution mechanical power presses; mechanical power presses configured so that a person could enter, pass through, and become clear of the sensing field; and die-setting and maintenance procedures must not be done in the presence sensing device initiation (PSDI) mode **(§1910.217(h))**.

Machines using full revolution clutches must incorporate a single-stroke mechanism. If the single-stroke mechanism is dependent upon spring action, the spring(s) must be of the compression type, operating on a rod or guided within a hole or tube, and designed to prevent interleaving of the spring coils in event of breakage **(§§1910.217(b)(3)(i) and (ii))**.

A main disconnect switch capable of being locked in the OFF position must be provided with every power press control system **(§1910.217(b)(8)(i))**.

To ensure safe operating conditions and to maintain a record of inspections and maintenance work, the employer must establish a program of periodic and regular inspections of power presses to ensure the safe operating condition and adjustment of all their parts, auxiliary equipment, and safeguards. The employer must maintain a certification record of inspections that includes the date of inspection, the signature of the person who performed the inspection, and the serial number, or other identifier, of the power press that was inspected **(§1910.217(e)(1)(i))**.

Portable Power Tools (Pneumatic)

For portable tools, a tool retainer must be installed on each piece of utilization equipment which, without such a retainer, may eject the tool **(§1910.243(b)(1))**.

Hose and hose connections used for conducting compressed air to utilization equipment must be designed for the pressure and service to which they are subjected **(§1910.243(b)(2))**.

Power Transmission Equipment Guarding

All belts, pulleys, sprockets and chains, flywheels, shafting and shaft projections, clutches, and couplings, or other rotating or reciprocating parts, or any portion thereof, within 7 feet (2.1 meters) of the floor or working platform must be effectively guarded **(§§1910.219(b)(1), (c)(2)(i), (c)(3), (d)(1), (e)(1)(i), (e)(2)(i), (e)(2)(ii), (f)(3), and (k)(1))**.

Under standard conditions, guards must be manufactured of the following materials: expanded metal, perforated or solid sheet metal, wire mesh on a frame of angle iron, or iron pipe securely fastened to the floor or to the frame of machine **(§1910.219(m)(1)(i))**. All metal should be free from burrs and sharp edges **(§1910.219(m)(1)(ii))**.

All guards must be rigidly braced every 3 feet or fractional part of their height to some fixed part of machinery or building structure. Where a guard is exposed to contact with moving equipment, additional strength may be necessary **(§1910.219(o)(1)(i)(a))**.

Wood guards may be used in the woodworking and chemical industries, in industries where the presence of fumes or where manufacturing conditions would cause the rapid deterioration of metal guards. Also, wood guards may be used in construction work and in locations outdoors, where extreme cold or extreme heat make metal guards and railings undesirable. In all other industries, wood guards must not be used **(§1910.219(o)(2)(i))**.

All guards for inclined belts must be arranged in such a manner that a minimum clearance of 7 feet (2.1 meters) is maintained between the belt and the floor at any point outside the guard **(§1910.219(e)(3)(ii))**.

Flywheels located so that any part is 7 feet (2.1 meters) or less above the floor or platform must be guarded with an enclosure of sheet, perforated, or expanded metal or woven wire **(§§1910.219(b)(1) and (b)(1)(i))**.

Flywheels protruding through a working floor must be entirely enclosed or surrounded by a guardrail and toeboard **(§1910.219(b)(1)(iii))**.

Where both runs of horizontal belts are 7 feet (2.1 meters) or less from the floor level, the guard must extend to at least 15 inches (37.5 centimeters) above the belt or to a standard height, except that where both runs of a horizontal belt are 42 inches (1.05 meters) or less from the floor, the belt must be fully enclosed **(§1910.219(e)(1)(i))**.

Gears, sprocket wheels, and chains must be guarded, unless they are more than 7 feet (2.1 meters) above the floor, or unless the mesh points are guarded. This requirement does not apply to manually operated sprockets **(§§1910.219(f)(1) through (3))**.

Couplings with bolts, nuts, or set screws extending beyond the flange of the coupling must be guarded by a safety sleeve **(§1910.219(i)(2))**.

Powered Platforms for Building Maintenance

All completed building maintenance equipment installations must be inspected and tested in the field before being placed in service. A similar inspection and test must be made following any major alteration to an existing installation. No hoist must be subjected to a load in excess of 125 percent of its rated load **(§1910.66(g)(1))**.

Structural supports, tie-downs, tie-in guides, anchoring devices, and any affected parts of a building included in the installation must be designed by or under the direction of a registered, professional engineer experienced in such design. Exterior installations must be capable of withstanding prevailing climatic conditions. The building installation must provide safe access to, and egress from, the equipment and sufficient space to conduct necessary maintenance. Affected parts of the building must have the capability of sustaining all the loads imposed by the equipment. The affected parts of the building must be designed to allow the equipment to be used without exposing employees to a hazardous condition **(§§1910.66(e)(1)(i) through (v))**.

Repairs or major maintenance of those building portions that provide primary support for the suspended equipment must not affect the capability of the building to meet OSHA requirements **(§1910.66(e)(10))**.

The equipment power circuit must be an independent electrical circuit that must remain separate from all other equipment within or on the building, other than power circuits used for hand tools that will be used in conjunction with the equipment. If the building is provided with an emergency power system, the equipment power circuit may also be connected to this system **(§1910.66(e)(11)(iii))**.

Equipment installations must be designed by or under the direction of a registered professional engineer that is experienced in such design. The design must provide for a minimum live load of 250 pounds (113.6 kg.) for each occupant of a suspended or supported platform. Equipment that is exposed to wind when not in service must be designed to withstand forces generated by winds of at least 100 mph (44.7 m/s) at 30 feet (9.2 meters) above grade and when in service able to withstand forces generated by winds of at least 50 mph (22.4 m/s) at all elevations **(§§1910.66(f)(1)(i) through (iv))**.

Each suspended unit component, except suspension ropes and guardrail systems, must be capable of supporting, without failure, at least four times the maximum intended live load applied or transmitted to that component **(§1910.66(f)(5)(i)(A))**.

Portable Circular Saws

All portable, power driven circular saws (except those used for cutting meat) having a blade diameter greater than 2 inches (5 centimeters) must be equipped with guards above and below the base plate or shoe. The upper guards must cover the saw to the depth of the teeth, except for the minimum arc required to permit the base plate to be tilted for bevel cuts. The lower guard must cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard must automatically and instantly return to the covering position **(§1910.243(a)(1))**.

All cracked blades must be removed from service **(§1910.243(a)(4))**.

Woodworking Machinery

All woodworking machinery – such as table saws, swing saws, radial saws, band saws, jointers, tenoning machines, boring and mortising machines, shapers, planers, lathes, sanders, veneer cutters, and other miscellaneous woodworking machinery – must be enclosed or guarded, except that part of the blade doing the actual cutting, to protect the operator and other employees from hazards inherent to the operation **(§§1910.213(c) through (r))**.

Power control devices must be provided on each machine to make it possible for the operator to cut off the power to the machine without leaving his/her position at the point of operation. Power controls and operating controls should be located within easy reach of the operator while at his/her regular work location, making it unnecessary for the operator to reach over the cutter to make adjustments. This does not apply to constant pressure controls used only for setup purposes **(§§1910.213(b)(1) and (b)(4))**.

Restarts

In operations where injury to the operator might result if motors were to restart after power failures, provision must be made to prevent machines from automatically restarting upon restoration of power (**§1910.213(b)(3)**).

Band saw blades must be enclosed or guarded except for the working portion of the blade between the bottom of the guide rolls and the table. Band saw wheels must be fully encased. The outside periphery of the enclosure must be solid. The front and back must be either solid or wire mesh or perforated metal **(§1910.213(i)(1))**.

Circular Table Saws

Circular saws must have a hood over the portion of the saw above the table mounted so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut (**§§1910.213(c)(1), (d)(1), and (e)(1)**). In addition, circular table saws must be furnished with a spreader to prevent material from squeezing the saw or being thrown back on the operator. The spreader must be made of hard tempered steel, or its equivalent. The spreader must be attached so that it will remain in true alignment with the saw even when either the saw or table is tilted. The provision of a spreader in connection with grooving, dadoing, or rabbeting is not required. Each circular resaw (other

than self-feed saws with a roller or wheel at back of the saw) must be provided with a spreader fastened securely behind the saw. The spreader must be slightly thinner than the saw kerf and slightly thicker than the saw disk (§§1910.213(c)(2) and (e)(2)).

Circular table saws used for ripping must have nonkickback fingers or dogs. **(§1910.213(f)(2)).**

Rip Saws

Rip saws must have a spreader aligned with the blade and must be no thinner than the blade. The provision of a spreader in connection with grooving, dadoing, or rabbeting is not required (§**§1910.213(c)(2) and (e)(2)**).

Rip saws must have nonkickback fingers or dogs **(§1910.213(c)(3))**.

Inverted Swing or Sliding Cut-off Saws

Inverted swing or sliding cut-off saws must be provided with a hood that will cover the part of the saw that protrudes above the top of the table or material being cut **(§1910.213(g)(4))**.

Radial Saws

Radial saws must have an upper guard that completely encloses the upper half of the saw blade. The sides of the lower exposed portion of the blade must be guarded by a device that will automatically adjust to the thickness of and remain in contact with the material being cut **(§1910.213(h)(1))**.

Radial saws used for ripping must have non-kickback fingers or dogs **(§1910.213(h)(2))**.

Radial saws must have an adjustable stop to prevent the forward travel of the blade beyond the position necessary to complete the cut in repetitive operations **(§1910.213(h)(3))**.

Radial saws must be installed so that the cutting head will return to the starting position when released by the operator **(§1910.213(h)(4))**.

Self-feed Circular Saws

Self-feed circular saws, feed rolls and blades must be protected by a hood or guard to prevent the hand of the operator from coming into contact with the in-running rolls at any point **(§1910.213(f)(1))**.

Swing or Sliding Cut-off Saws

Swing or sliding cut-off saws must be provided with a hood that will completely enclose the upper half of the saw **(§1910.213(g)(1))**.

Swing or sliding cut-off saws must be provided with limit stops to prevent the saws from extending beyond the front or back edges of the table **(§1910.213(g)(3))**.

Swing or sliding cut-off saws must be provided with an effective device to return the saw automatically to the back of the table when released at any point of its travel **(§1910.213(g)(2))**.

Abrasive Blasting

Blast cleaning nozzles must be equipped with an operating valve which must be held open manually. A support must be provided on which the nozzle may be mounted when not in use **(§1910.244(b))**.

Blast-cleaning enclosures must be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure during the abrasive blasting operation **(§1910.94(a)(3))**.

Abrasive Grinding

Abrasive wheels must be used only on machines provided with safety guards with the following exceptions:

- Wheels used for internal work while within the work being ground **(§1910.215(a)(1)(i) and §1910.243(c)(1)(i)(a))**;
- Mounted wheels, used in portable operations, 2 inches (5 centimeters) and smaller in diameter **(§1910.215(a)(1)(ii) and §1910.243(c)(1)(i)(b))**; and
- Type 16, 17, 18, 18R, and 19 cones, plugs, and threaded hole pot balls where the work offers protection **(§1910.215(a)(1)(iii) and §1910.243(c)(1)(i)(c))**.

Abrasive wheel safety guards must cover the spindle end, nut, and flange projections. Safety guards must also be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings must exceed the strength of the guard, except:

- Safety guards on all operations where the work provides a suitable measure of protection to the operator may be so constructed that the spindle end, nut, and outer flange are exposed **(§1910.215(a)(2)(i) and §1910.243(c)(1)(ii)(b))**;

- Where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted **(§1910.215(a)(2)(i) and §1910.243(c)(1)(ii)(b))**; and
- The spindle end, nut, and outer flange may be exposed on portable machines designed as portable saws, as well as on other machines designed for, and used with, type 6, 11, 27, and 28 abrasive wheels, cutting off wheels, and tuck pointing wheels **(§1910.215(a)(2)(ii) and §1910.243(c)(1)(ii)(c))**.

Work rests on offhand grinding machines must be used to support the work. They must be of rigid construction and designed to be adjustable to compensate for wheel wear. Work rests must also be kept adjusted closely to the wheel with no more than a 1/8 inch (3.2 millimeters) opening. This will prevent the work from being jammed between the wheel and the rest, which may cause wheel breakage. Further, during any wheel adjustments the wheel must be motionless and wheel rests must be securely clamped after each adjustment **(§1910.215(a)(4))**.

Abrasive wheel safety guards for bench and floor stands and for cylindrical grinders must not expose the grinding wheel periphery for more than 90 degrees or ¼ of the periphery (bench and floor stands) and 180 degrees (cylindrical grinders). The exposure must begin at a point not more than 65 degrees above the horizontal plane of the wheel spindle. The protecting member must be adjustable for variations in wheel size so that the distance between the wheel periphery and adjustable tongue (tongue guard) or end of the peripheral member at the top must never exceed ¼ inch (6 millimeters) **(§§1910.215(b)(3) through (4), and (b)(9))**.

Machines designed for a fixed location must be securely anchored to prevent "walking," or designed in such a manner that prevents movement **(§1910.212(b))**.

Grain Handling Facilities

Entry into Grain Bins

Workers should not enter a grain storage bin unless it is absolutely necessary. If a worker enters a grain storage bin, employers must implement the following hazard control measures:

- De-energize and disconnect, lockout and tag, or block off all mechanical, electrical, hydraulic and pneumatic equipment that presents a danger **(§1910.272(g)(1)(ii))**.
- Prohibit workers from walking down grain and similar practices where walking on grain is intended to make it flow **(§1910.272(g)(1)(iv))**.
- Prohibit and prevent worker entry below a bridging condition, or where grain is built up on the side of the bin **(§1910.272(g)(6))**.
- Train workers at least annually and when changes in job assignment will expose workers to new hazards **(§1910.272(e))**.
- Provide each worker who enters a grain structure and who may be exposed to an engulfment hazard, with a body harness or boatswain's chair. The body harness must have a lifeline that is positioned and is of sufficient length to prevent a worker from sinking further than waist-deep in grain **(§1910.272(g)(2))**.
- Provide workers with rescue equipment, such as winch systems, that are specifically suited for bin rescue **(§1910.272(g)(4))**.
- Station an observer who is equipped to provide assistance and perform rescue operations outside the bin **(§1910.272(g)(3))**.
- Ensure that communications (visual, voice or signal line) are maintained between the observer and the workers who entered the bin **(§1910.272(g)(3))**.
- Test the air within a bin for oxygen content and the presence of hazardous gases (when there is a reason to believe they may be present) before entry **(§1910.272(g)(1)(iii))**.
- Provide and continue ventilation until any unsafe atmospheric conditions are eliminated. If toxicity or oxygen deficiency cannot be eliminated, workers must be provided with and wear appropriate respirators **(§1910.272(g)(1)(iii)(A) and (B))**.
- Issue a permit each time a worker enters a bin, unless the employer is present during the entire entry operation. The permit must certify that the precautions contained in **§1910.272(g)** have been implemented before workers enter the bin **(§1910.272(g)(1)(i))**.

Control of Grain Dust Fires and Explosions

The employer must develop and implement a written housekeeping program that establishes the frequency and method(s) determined best to reduce accumulations of fugitive grain dust on ledges, floors, equipment and other exposed surfaces **(§1910.272(j)(1)).**

For grain elevators, any fugitive grain dust accumulations that exceed 1/8 inch (.32 cm) at priority housekeeping areas must be immediately removed **(§1910.272(j)(2)(ii)).**

Compressed air can be used to blow dust from ledges, walls, and other areas only when all machinery that presents an ignition source in the area has been shut down, and all other known potential ignition sources in the area are removed or controlled **(§1910.272(j)(3)).**

Filter Collectors

All fabric dust filter collectors which are a part of a pneumatic dust collection system must be equipped with a monitoring device that will indicate a pressure drop across the surface of the filter **(§1910.272(l)(1)).**

Filter collectors installed after March 30, 1988 must be located:

- Outside the facility **(§1910.272(l)(2)(i))**;
- In an area inside the facility protected by an explosion suppression system **(§1910.272(l)(2)(ii))**; or
- In an area inside the facility that is separated from other areas of the facility by construction having at least a one hour fire-resistance rating. Filter collectors located inside these one hour rated rooms must be adjacent to an exterior wall and vented to the outside, as well as vent and ductwork designed to resist rupture due to deflagration **(§1910.272(l)(2)(iii)).**

Preventive Maintenance

The preventive maintenance must include regularly scheduled inspections of at least mechanical and safety control equipment associated with dryers, grain stream processing equipment, dust collection equipment, including filter collectors, and bucket elevators **(§1910.272(m)(1)).**

Any dust collection systems determined to be malfunctioning or operating below designed efficiency, must be promptly corrected. Additionally, overheated bearings and slipping or misaligned belts associated with inside bucket elevators must be promptly corrected or removed from service until repaired or replaced **(§1910.272(m)(2)).**

A certification record of each inspection performed must be maintained and contain the date of the inspection, the name of the person who performed the inspection, and the serial number, or other identifier, of the equipment that was inspected **(§1910.272(m)(3)).**

Inside Bucket Elevators

Bucket elevators shall not be jogged to free a choked leg **(§1910.272(q)(1))**.

Employers must mount bearings externally to the leg casing or provide devices to monitor the condition of bearings **(§1910.272(q)(4)).**

At facilities with a storage capacity of greater than one million bushels, employers must equip bucket elevators with a motion detector that will shut down the bucket elevator when belt speed is reduced by no more than 20% of the normal operating speed, as well as a means to keep the belt tracking properly or an alignment monitoring device that will initiate an alarm to employees when the belt is not tracking properly **(§§1910.272(q)(5), (6) and (7)).**

Hot Work Permit

Employers must issue a permit for all hot work unless the operations are conducted:

- In the presence of the employer or the employer's authorized representative who would otherwise issue the permit **(§1910.272(f)(1)(i))**;
- In an employer authorized welding shop **(§1910.272(f)(1)(ii))**; or
- Outside and away from the grain handling structure **(§1910.272(f)(1)(iii))**.

The permit shall certify that requirements contained in **§1910.252(a)** have been implemented and the permits shall be kept on file until the completion of hot work operations **(§1910.272(f)(2)).**

Emergency Action Plans

Due to the potential for fires and explosions existing in grain handling operations, employers must develop and implement an emergency action plan that meets the requirements in **§1910.38 (§1910.272(d)).**

The minimum elements of the plan must include:

- Procedures for reporting a fire or other emergency **(§1910.38(c)(1))**;
- Procedures for emergency evacuation, including type of evacuation and exit route assignments **(§1910.38(c)(2))**;
- Procedures to be followed by employees who remain to operate critical plant operations before they evacuate **(§1910.38(c)(3))**;
- Procedures to account for all employees after evacuation **(§1910.38(c)(4))**;
- Procedures to be followed by employees performing rescue or medical duties **(§1910.38(c)(5))**; and
- The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan **(§1910.38(c)(6)).**

Employer must have and maintain employee alarm system. The alarm system must comply with **§1910.165** requirements **(§1910.38(d)).**

Employers must train employees to recognize and prevent fire and explosion hazards including dust accumulations and ignition sources. This includes initial and refresher training for existing, new, and reassigned employees **(§1910.272(e)).**

At least two means of emergency escape must be provided from galleries (bin decks) **(§1910.272(o)(1))**.

For tunnels of grain elevators constructed before 1988, at least one means of emergency escape is required **(§1910.272(o)(2)).**

All tunnels of grain elevators constructed in 1989 or after must be provided with at least two means of emergency escape **(§1910.272(o)(2)).**

General Electrical Safety

Electrical equipment must be free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment must be determined using the following considerations: (1) suitability for installation and use in conformity; (2) mechanical strength and durability, including parts designed to enclose and protect other equipment; (3) wire-bending and connection space; (4) electrical insulation; (5) heating and arcing effects when in use; (6) classification by type, size, voltage, current capacity, and specific use; and (7) any other factors that contribute to the practical safeguarding of persons using or likely to come into contact with the equipment **(§§1910.303(b)(1)(i) through (viii))**.

Electrical equipment and installations, including building electrical system components, and tools that use electrical power, that have been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes are deemed "accepted." They are, in addition, deemed "acceptable" to the Assistant Secretary of Labor **(§1910.399)**.

If no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines the electrical equipment or its installation safe, another federal agency, state, municipal, or other local authority responsible for enforcing occupational safety provisions of the National Electrical Code may perform the inspection. If such equipment and its installation are found to be in compliance with the provisions of the National Electrical Code, they will be determined "acceptable" to the Assistant Secretary of Labor **(§1910.399)**.

Custom-made equipment or related installations that are designed, fabricated for, and intended for the use by a particular customer may be deemed "acceptable" as long as they are determined to be safe for their intended use by their manufacturer on the basis of test data. This test data must be kept and made available by the employer **(§1910.399)**.

Flexible Cords and Cables (Extension Cords)

Flexible cords and cables must be protected from accidental damage **(§1910.305(a)(2)(x))**. Unless specifically permitted, flexible cords and cables may not be used as a substitute for the fixed wiring of a structure, where attached to building surfaces, where concealed or where run through holes in walls, ceilings, or floors, or where run in raceways or through doorways, windows, or similar openings **(§1910.305(g)(1)(iv))**. Flexible cords must be equipped with an attachment plug and be energized from an approved receptacle outlet **(§1910.305(g)(1)(iii))**.

Grounding/Grounded

For a grounded system, a grounding electrode conductor must be used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode. Both the equipment grounding conductor and the grounding electrode conductor must be connected to the grounded circuit conductor on the supply side of the service disconnecting means or on the supply side of the system disconnecting means or overcurrent devices if the system is separately derived **(§1910.304(g)(4)(i))**.

For an ungrounded service-supplied system, the equipment grounding conductor must be connected to the grounding electrode conductor at the service equipment. For an ungrounded separately derived system, the equipment grounding conductor must be connected to the grounding electrode conductor at, or ahead of, the system disconnecting means or overcurrent devices **(§1910.304(g)(4)(ii))**.

The path to ground from circuits, equipment, and enclosures must be permanent and continuous, and effective **(§1910.304(g)(5))**.

Examination

Electrical equipment must be free from recognized hazards that are likely to cause death or serious physical harm to employees **(§1910.303(b)(1))**.

Guarding

Except as elsewhere required or permitted by 29 CFR 1910, subpart S, live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact by use of approved cabinets or other forms of approved enclosures or by any of the approved means **(§1910.303(g)(2))**.

Identification

Each disconnecting means, required by 29 CFR 1910, subpart S, for motors and appliances must be legibly marked to indicate its purpose, unless it is located and arranged so the purpose is evident **(§1910.303(f)(1))**.

Listing and Labeling

Listed or labeled equipment must be used or installed in accord with any instructions included in the listing or labeling **(§1910.303(b)(2))**.

Electrical Openings

Unused openings in electrical cabinets, boxes, and fittings must be effectively closed **(§1910.305(b)(1)(i))**.

Safety-Related Work Practices

Safety-related work practices must be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits that are or may be energized **(§1910.333(a))**.

Electrical safety-related work practices cover both qualified persons (those who have training in avoiding the electrical hazards of working on or near exposed energized parts) and unqualified persons (those with little or no such training) **(§1910.331(a))**.

Live parts that an employee may be exposed to must be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or it is infeasible due to equipment design or operational limitations **(§1910.333(a)(1))**.

Employers must develop and implement written lockout and/or tagout procedures that must be maintained and made available for inspection. **(§§1910.333(b)(2) and (b)(2)(i))**.

Overhead power lines must be deenergized and grounded by the owner or operator of the lines or other protective measures must be provided before work performed near them is started. Protective measures, such as guarding or insulating the lines, must be designed to prevent employees from contacting the lines **(§1910.333(c)(3))**.

Unqualified employees and mechanical equipment must be at least 10 feet (305 centimeters) away from overhead power lines. If the voltage to ground exceeds 50,000 volts (50kV), the minimum clearance distance should be increased by 4 inches (10 centimeters) for each additional 10,000 volts (10kV) **(§1910.333(c)(3)(i)(A))**.

OSHA requires portable ladders to have nonconductive side rails if used by employees who would be working where they might contact exposed energized circuit parts **(§1910.333(c)(7))**.

Splices

Conductors must be spliced or joined with splicing devices identified for such use or by brazing, welding, or soldering with a fusible alloy or metal. All splices, joints, and free ends of conductors must be covered with an insulation equivalent to that of the conductor or with an insulating device suitable for the purpose **(§1910.303(c)(3)(i))**.

Hazardous Workplace Complaints: Worker Rights

Workers have the right to a safe workplace. The *Occupational Safety and Health Act of 1970* (OSH Act) was passed to prevent workers from being killed or seriously harmed at work. The law requires employers to provide their employees with working conditions that are free of known dangers. Workers may file a complaint to have OSHA inspect their workplace if they believe that their employer is not following OSHA standards or that there are serious hazards. Further, the OSH Act gives complainants the right to request that their names not be revealed to their employers. It is also against the law for an employer to fire, demote, transfer, or retaliate in any way against a worker for filing a complaint or using other OSHA rights.

If a workplace has unsafe or unhealthful working conditions, workers may want to file a complaint. Often the best and fastest way to get a hazard corrected is to notify a supervisor or employer.

Workers or their representatives may file a complaint online or by phone, mail, email or fax with the nearest OSHA office and request an inspection. A worker may also ask OSHA not to reveal his or her name. To file a complaint, call 1-800-321-OSHA (6742) or contact the nearest OSHA regional, area, state plan, or consultation office listed at www.osha.gov. The teletypewriter (TTY) number is (877) 889-5627.

Written, signed complaints submitted to OSHA area offices are more likely to result in an on-site OSHA inspection. Most online or unsigned complaints are resolved informally over the phone with the employer. Complaints from workers in states with an OSHA-approved state plan will be forwarded to the appropriate state plan for response.

Workers can call 1-800-321-OSHA (6742) to request a complaint form from their local OSHA office or visit www.osha.gov/pls/osha7/eComplaintForm.html to submit the form online. Completed forms can be faxed or mailed to the local OSHA office (provided at the end of this guide). Include your name, address and telephone number so that OSHA can contact you.

OSHA Assistance, Services and Programs

OSHA has a great deal of information to assist employers in complying with their responsibilities under OSHA law. Several OSHA programs and services can help employers identify and correct job hazards, as well as improve their injury and illness prevention program.

Establishing an Injury and Illness Prevention Program

The key to a safe and healthful work environment is a comprehensive injury and illness prevention program.

Injury and illness prevention programs are systems that can substantially reduce the number and severity of workplace injuries and illnesses, while reducing costs to employers. Thousands of employers across the United States already manage safety using injury and illness prevention programs, and OSHA believes that all employers can and should do the same. Thirty-four states have requirements or voluntary guidelines for workplace injury and illness prevention programs. Most successful injury and illness prevention programs are based on a common set of key elements. These include management leadership, worker participation, hazard identification, hazard prevention and control, education and training, and program evaluation and improvement. Visit OSHA's Injury and Illness Prevention Programs web page at www.osha.gov/dsg/topics/safetyhealth for more information.

Compliance Assistance Specialists

OSHA has compliance assistance specialists throughout the nation located in most OSHA offices. Compliance assistance specialists can provide information to employers and workers about OSHA standards, short educational programs on specific hazards or OSHA rights and responsibilities, and information on additional compliance assistance resources. For more details, visit www.osha.gov/dcsp/compliance_assistance/cas.html or call 1-800-321-OSHA (6742) to contact your local OSHA office.

Free On-site Safety and Health Consultation Services for Small Business

OSHA's On-site Consultation Program offers free and confidential advice to small and medium-sized businesses in all states across the country, with priority given to high-hazard worksites. Each year, responding to requests from small employers looking to create or improve their safety and health management programs, OSHA's On-site Consultation Program conducts over 29,000 visits to small business worksites covering over 1.5 million workers across the nation.

On-site consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing safety and health management programs.

For more information, to find the local On-site Consultation office in your state, or to request a brochure on consultation services, visit www.osha.gov/consultation, or call 1-800-321-OSHA (6742).

Under the consultation program, certain exemplary employers may request participation in OSHA's **Safety and Health Achievement Recognition Program (SHARP)**. Eligibility for participation includes, but is not limited to, receiving a full-service, comprehensive consultation visit, correcting all identified hazards and developing an effective safety and health management program. Worksites that receive SHARP recognition are exempt from programmed inspections during the period that the SHARP certification is valid.

Cooperative Programs

OSHA offers cooperative programs under which businesses, labor groups and other organizations can work cooperatively with OSHA. To find out more about any of the following programs, visit www.osha.gov/dcsp/compliance_assistance/index_programs.html.

Strategic Partnerships and Alliances

The OSHA Strategic Partnerships (OSP) provide the opportunity for OSHA to partner with employers, workers, professional or trade associations, labor organizations, and/or other interested stakeholders. OSHA Partnerships are formalized through unique agreements designed to encourage, assist, and recognize partner efforts to eliminate serious hazards and achieve model workplace safety and health practices. Through the Alliance Program, OSHA works with groups committed to worker safety and health to prevent workplace fatalities, injuries and illnesses by developing compliance assistance tools and resources to share with workers and employers, and educate workers and employers about their rights and responsibilities.

Voluntary Protection Programs (VPP)

The VPP recognize employers and workers in private industry and federal agencies who have implemented effective safety and health management programs and maintain injury and illness rates below the national average for their respective industries. In VPP, management, labor, and OSHA work cooperatively and proactively to prevent fatalities, injuries, and illnesses through a system focused on: hazard prevention and control, worksite analysis, training, and management commitment and worker involvement.

Occupational Safety and Health Training

The OSHA Training Institute in Arlington Heights, Illinois, provides basic and advanced training and education in safety and health for federal and state compliance officers, state consultants, other federal agency personnel and private sector employers, workers, and their representatives. In addition, 27 OSHA Training Institute Education Centers at 42 locations throughout the United States deliver courses on OSHA standards and occupational safety and health issues to thousands of students a year.

For more information on training, contact the OSHA Directorate of Training and Education, 2020 Arlington Heights Road, Arlington Heights, IL 60005; call 1-847-297-4810; or visit www.osha.gov/otiec.

OSHA Educational Materials

OSHA has many types of educational materials in English, Spanish, Vietnamese and other languages available in print or online. These include:

- Brochures/booklets that cover a wide variety of job hazards and other topics;
- Fact Sheets, which contain basic background information on safety and health hazards;
- Guidance documents that provide detailed examinations of specific safety and health issues;
- Online Safety and Health Topics pages;
- Posters;
- Small, laminated QuickCards™ that provide brief safety and health information; and
- *QuickTakes*, OSHA's free, twice-monthly online newsletter with the latest news about OSHA initiatives and products to assist employers and workers in finding and preventing workplace hazards. To sign up for *QuickTakes* visit www.osha.gov/quicktakes.

To view materials available online or for a listing of free publications, visit www.osha.gov/publications. You can also call 1-800-321-OSHA (6742) to order publications.

OSHA's website also has a variety of eTools. These include utilities such as expert advisors, electronic compliance assistance, videos and other information for employers and workers. To learn more about OSHA's safety and health tools online, visit www.osha.gov.

OSHA Advisory Committees

OSHA sponsors advisory committees to advise the Secretary of Labor and the Assistant Secretary of Labor for Occupational Safety and Health on workplace safety and health issues.

All of OSHA's advisory committees have membership balanced between representatives of workers and employers, and most also include other qualified individuals such as government officials, safety and health professionals and members of the public. All committees accept comments from interested individuals.

Transcripts and minutes of the meetings are also available to the public on the committee web pages at www.osha.gov/osha-advisory-committee.html.

The five current advisory committees are:

- The National Advisory Committee on Occupational Safety and Health (NACOSH), which advises, consults with and makes recommendations to the U.S. Secretaries of Labor and Health and Human Services (HHS) on matters regarding the OSH Act;
- The Advisory Committee on Construction Safety and Health (ACCSH), which advises the Secretary of Labor on construction safety and health standards and other matters;
- The Federal Advisory Council on Occupational Safety and Health (FACOSH), which advises the Secretary of Labor on all aspects of federal agency safety and health; and
- The Maritime Advisory Committee for Occupational Safety and Health (MACOSH), which advises the Secretary of Labor on workplace safety and health programs, policies and standards in the maritime industry.
- The Whistleblower Protection Advisory Committee (WPAC), which advises, consults with and makes recommendations to the Secretary of Labor on ways to improve the fairness, efficiency, effectiveness, and transparency of OSHA's administration of whistleblower protections.

In addition, OSHA may form short-term advisory committees to advise the agency on specific issues.

NIOSH Health Hazard Evaluation Program

Getting Help with Health Hazards

The National Institute for Occupational Safety and Health (NIOSH) is a federal agency that conducts scientific and medical research on workers' safety and health. At no cost to employers or workers, NIOSH can help identify health hazards and recommend ways to reduce or eliminate those hazards in the workplace through its Health Hazard Evaluation (HHE) Program.

Workers, union representatives and employers can request a NIOSH HHE. An HHE is often requested when there is a higher than expected rate of a disease or injury in a group of workers. These situations may be the result of an unknown cause, a new hazard, or a mixture of sources. To request a NIOSH Health Hazard Evaluation go to www.cdc.gov/niosh/hhe/request.html. To find out more about the Health Hazard Evaluation Program:

- Call (513) 841-4382, or to talk to a staff member in Spanish, call (513) 841-4439; or
- Send an email to HHERequestHelp@cdc.gov.

OSHA Regional Offices

Region I
Boston Regional Office
(CT*, ME, MA, NH, RI, VT*)
JFK Federal Building, Room E340
Boston, MA 02203
(617) 565-9860 (617) 565-9827 Fax

Region II
New York Regional Office
(NJ*, NY*, PR*, VI*)
201 Varick Street, Room 670
New York, NY 10014
(212) 337-2378 (212) 337-2371 Fax

Region III
Philadelphia Regional Office
(DE, DC, MD*, PA, VA*, WV)
The Curtis Center
170 S. Independence Mall West
Suite 740 West
Philadelphia, PA 19106-3309
(215) 861-4900 (215) 861-4904 Fax

Region IV
Atlanta Regional Office
(AL, FL, GA, KY*, MS, NC*, SC*, TN*)
61 Forsyth Street, SW, Room 6T50
Atlanta, GA 30303
(678) 237-0400 (678) 237-0447 Fax

Region V
Chicago Regional Office
(IL*, IN*, MI*, MN*, OH, WI)
230 South Dearborn Street
Room 3244
Chicago, IL 60604
(312) 353-2220 (312) 353-7774 Fax

Region VI
Dallas Regional Office
(AR, LA, NM*, OK, TX)
525 Griffin Street, Room 602
Dallas, TX 75202
(972) 850-4145 (972) 850-4149 Fax
(972) 850-4150 FSO Fax

Region VII
Kansas City Regional Office
(IA*, KS, MO, NE)
Two Pershing Square Building
2300 Main Street, Suite 1010
Kansas City, MO 64108-2416
(816) 283-8745 (816) 283-0547 Fax

Region VIII
Denver Regional Office
(CO, MT, ND, SD, UT*, WY*)
Cesar Chavez Memorial Building
1244 Speer Boulevard, Suite 551
Denver, CO 80204
(720) 264-6550 (720) 264-6585 Fax

Region IX
San Francisco Regional Office
(AZ*, CA*, HI*, NV*, and American Samoa,
Guam and the Northern Mariana Islands)
90 7th Street, Suite 18100
San Francisco, CA 94103
(415) 625-2547 (415) 625-2534 Fax

Region X
Seattle Regional Office
(AK*, ID, OR*, WA*)
300 Fifth Avenue, Suite 1280
Seattle, WA 98104
(206) 757-6700 (206) 757-6705 Fax

*These states and territories operate their own OSHA-approved job safety and health plans and cover state and local government employees as well as private sector employees. The Connecticut, Illinois, New Jersey, New York and Virgin Islands programs cover

public employees only. (Private sector workers in these states are covered by Federal OSHA). States with approved programs must have standards that are identical to, or at least as effective as, the Federal OSHA standards.

Note: To get contact information for OSHA area offices, OSHA-approved state plans and OSHA consultation projects, please visit us online at www.osha.gov or call us at 1-800-321-OSHA (6742).

How to Contact OSHA

For questions or to get information or advice, to report an emergency, report a fatality or catastrophe, order publications, sign up for OSHA's e-newsletter *QuickTakes*, or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

For assistance, contact us.
We are OSHA. We can help.


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For more information

www.osha.gov (800) 321-OSHA (6742)