ALEXANDER COUNTY NC

SAFETY POLICIES

Effective: July 1, 2026

TABLE OF CONTENTS

ALEXANDER COUNTY SAFETY POLICIES

Alexander County strives for a safe environment and to ensure protection from exposures for employees and the general public. The chapters contained herein provide procedures and guidelines for potential hazards or risks in the workplace.

CHAPTER 1 ACCIDENT PREVENTION SIGNS AND TAGS (29 CFR 1910.145)

SECTION 1. PURPOSE

The goal is to identify situations which could lead and prevent accidents from happening. Employees will be able to recognize the different types of signs and tags and take action based on the messages contained.

SECTION 2. GENERAL SIGNS AND TAG CRITERIA

A. Tags must contain a signal word and a major message.
B. Signal word shall indicate the specific hazardous condition or instructions.
C. Signal word shall be either danger, caution, biological hazard, biohazard, or the biological hazard symbol.
D. Signal word shall be readable at a minimum distance of five (5) feet (1.52m).
E. Sign messages shall be presented in pictographs, written text, or both.
F. Signal words and major messages shall be understandable to all employees.
G. Signs/Tags shall be removed only by the approval of management.

SECTION 3. IDENTIFYING AND DEFINING SIGNS AND TAGS

A. Danger Signs and Tags. Danger signs identify objects as very high risk and an immediate danger. These shall be used when an immediate hazard presents a threat of death or serious injury.

1. The word "Danger" appears in white letters in a red oval on a black background. Additional wording may appear in black letters on a white background below the word DANGER on the sign.
2. Examples of wording are: DANGER – LOOK OUT
    a. For trucks: Danger–Slippery When Wet, Danger–Hazardous
    b. Area: Corrosive Liquids, Wear Eye Protection

B. Caution Signs and Tags. Caution signs identify there are potential hazards and proper precautions which should be taken against unsafe practices. Caution signs shall be used in minor hazardous situations where a non-immediate or potential hazard or unsafe practice presents a lesser threat of injury.

1. The word "Caution" appears in black letters against a yellow background.
2. Examples of wording for "CAUTION" signs are: Caution–No Chemicals in Drains, Use Chemical Waste Containers, Caution–Watch Your Step, or Caution–Wear Your Hard Hat.

C. Safety Instruction Signs and Tags. Safety instruction signs deliver a useful safety instruction, advice, or suggestion for entering or working in a particular area.

1. Safety instructions appears in white letters against a green background.

2. Examples of wording for "SAFETY" signs are: Safety First–Ear Protection Required in this Area, Be Careful– Walk, Don't Run, or Safety First–Keep this Area Safe and Clean.

D. Biological Hazard Signs and Tags. Biohazard signs mean there is a risk of death, injury, or illness. Signs identify equipment, containers, rooms, and the like. which are contaminated with hazardous biological agents.

1. Signs will be displayed with fluorescent orange or orange/red letters with contrasting colors.

2. Examples of messages explaining specific hazardous conditions or precautions are: High Voltage, Do Not Start This Machine, Do Not Use, Hands Off: Do Not Operate.

3. Warning tags may be used when a situation has a hazard level between danger and caution.

E. Exit Signs. The word "Exit" on the sign must be at least six inches high. The sign must be distinctive in color, well-lit, and easy to see in an emergency.

1. Signs are required in any location where there is an exit or a route to take an exit.

2. Any door, stairs, or passage which could be mistaken for an exit shall have a "Not an Exit" sign displayed.

SECTION 4. EMPLOYEE TRAINING

Employees will be trained on how to recognize and define Danger, Caution, Biohazard, and Safety Instruction signs. Department Heads, or designee, shall make employees aware of signs, tags, and unsafe areas designated for specific department where the employee will be working in. Employees shall receive training upon hire, when work environment changes, or at any time deemed necessary by management.

CHAPTER 2 ASBESTOS (29 CFR 1910.1001)

SECTION 1. PURPOSE

This chapter is to manage asbestos and to fully implement the specific requirements, laws, and regulations set forth by the State of North Carolina.

SECTION 2. GUIDANCE

A. Take reasonable steps to determine the location and condition of materials likely to contain asbestos.

B. Presume materials contain asbestos unless there is strong evidence against it.

C. Create and maintain a record of the location and condition of the asbestos containing material (ACM) or presumed ACMs in the premises.

D. Assess the potential risk of exposure to fibers from these materials.
E. Prepare a plan setting out how the risks are managed.
F. Take the necessary steps to put the plan into action.
G. Review and monitor the plan periodically.
H. Provide information on the location and condition of the materials to those who work with or disturb them.

SECTION 3. GENERAL PRECAUTIONS

A. Access to all areas with, or presumed ACM, is prohibited without prior release of an Asbestos Controlled Area Work Permit by the Asbestos Control Officer.
B. All Maintenance staff working in areas containing ACM must have appropriate training in PPE and proper decontamination procedures.
C. Asbestos or asbestos products must not be used in any new work of building, construction, or alteration. Products must not contain 1% or more of asbestos.
D. Equipment containing asbestos should not be purchased. Manufacturers of products containing asbestos are legally required to inform purchasers.

SECTION 4. MAINTENANCE ACTIVITIES (SHORT/LONG DURATIONS)

A. Those working in areas containing ACM must wear approved respirators and protective clothing while work is being performed.
B. Workers must don and doff appropriate PPE upon each entrance and exit of the work site, preventing any further contamination throughout the building.
C. Only those persons engaged in the work activity are permitted to be in the room when the work is being carried out. Any doors and windows must be closed and appropriate warning signs posted.
D. All equipment in the immediate area should be covered by plastic before work begins.
E. Hand tools must be used instead of power tools in work areas.
F. Should an accidental breakage occur releasing fibers, the area concerned, including corridors, must be isolated until an inspection is completed by qualified personnel or an independent lab to determine if asbestos contamination is present.

SECTION 5. PROTECTIVE CLOTHING AND PERSONAL HYGIENE

The following protective clothing must be worn at all times and personal hygiene followed while in the work area:

A. Disposable overalls such as “TYVEK”, close-fitting at the wrist and ankles with integral head covering. Disposable shoe coverings must also be worn.
B. Eye protection such as approved safety glasses.
C. An approved NIOSH half-mask with P100 filters.
D. When personnel are leaving the work area for breaks, etc. all protective clothing must be disposed of and bagged in the area. Washing facilities must be used. New overalls must be donned before re-entering the area.
E. All PPE must be bagged and disposed of as asbestos waste.

F. Should any person become reasonably contaminated, a full decontamination procedure should be performed to prevent further contamination or harm to the person.

SECTION 6. REMOVAL AND DISPOSAL

Alexander County must hire a licensed contractor for the removal of any asbestos containing material. All asbestos waste will be given to a licensed contractor for proper disposal and it must be labeled properly.

SECTION 7. WARNING SIGNS AND LABELS

Warning signs shall be provided and displayed at each regulated area. In addition, warning signs shall be posted in proximity to regulated areas so an employee may read the signs and take necessary protective steps before entering the area. Signs may include the following precautionary warnings:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

In addition, when the use of respirators and protective clothing is required, the warning signs shall include:

WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

SECTION 8. EMPLOYEE INFORMATION AND TRAINING

The County shall also provide, at no cost to employees, annual asbestos awareness training, which shall at a minimum contain the following elements: health effects of asbestos, locations of ACM and PACM in buildings/facilities, recognition of ACM and PACM damage and deterioration, requirements relating to housekeeping, and proper response to fiber release episodes, to all employees who perform housekeeping work in areas where ACM and/or PACM is present.

CHAPTER 3 BLOODBORNE PATHOGENS (29 CFR 1910.1030)

SECTION 1. PURPOSE

This chapter is designed to assist employees in eliminating or minimizing exposure to bloodborne pathogens and other potentially infectious materials. This Chapter outlines steps to prevent occupational exposure and specific procedures to be followed if an inadvertent exposure occurs. This chapter is applicable to all employees, departmental safety responders, and departments at risk of exposure.

The Alexander County Health and Emergency Medical Services Departments maintain a separate Bloodborne Pathogen Policy which serve in addition to this Chapter.

SECTION 2. WORK PRACTICE CONTROLS

Employees shall comply with work practice controls as designated in the Alexander County Health and EMS Departments Bloodborne Pathogen Policies, as well as the controls listed herein.

SECTION 3. PERSONAL PROTECTIVE EQUIPMENT

A. Due to the wide range of hazards caused by the specific circumstances of any situation, an employee must exercise a certain amount of judgment in determining the appropriate level of personal protective equipment (PPE) necessary to provide protection in a specific situation. The following chart shows the minimum mandatory levels of protective equipment for various procedures; the equipment required when performing these procedures under any circumstance.

Procedure	*Gloves*	*Mask & Goggles*	*Gown/Jacket*
Handling of objects in work environment with potential exposure	**Yes**	If needed	No
Administering basic first aid	**Yes**	If needed	No

B. Before performing any procedure, the employee should evaluate whether there is a circumstance which poses an additional exposure hazard and use PPE appropriately.

C. PPE includes disposable gloves, masks, and eye shields maintained in all first aid kits.

D. When personal protective gear is removed, it will be disposed of properly. If PPE is visibly soiled with blood or body fluids, it will be placed in a red or biohazard labeled bag and disposed of properly. Otherwise, equipment may be disposed of with ordinary medical waste.

SECTION 4. EXPOSURE DETERMINATION

A. The Risk Management Specialist maintains a list of all job classifications with occupational exposure to bloodborne pathogens.

B. <u>Exposure Categories and Job Classifications</u>.

1. Classifications where all employees are exposed:
    a. Safety Responders
    b. Emergency Medical Services Department
    c. Solid Waste/Convenience Sites

2. Classifications where some employees are exposed:
    a. Detention Center
    b. Health Department
    c. Public Works

d. Recreation
e. Senior Center
f. Sheriff's Office
g. Social Services

SECTION 5. GENERAL

All employees and volunteers with occupational exposure to bloodborne pathogens are affected.

SECTION 6. PROCEDURES

All departments shall comply with procedures as designated in the Health and EMS Department's Bloodborne Pathogen Policies for the categories listed:

A. Standard Operating Procedures
B. Work Modifications
C. Universal Precautions
D. Hepatitis B Vaccination
E. Housekeeping
F. Medical Waste
G. Contaminated Laundry
H. Recording Keeping (Human Resources)
I. Training Records (Human Resources)
J. Availability

SECTION 7. EXPOSURE DETERMINATION

An exposure determination identifies which employees may incur occupational exposure to blood or other potentially infectious materials (OPIM). The exposure determination is made without regard to the use of PPE since employees are considered to be exposed even if they wear PPE.

SECTION 8. IMPLEMENTATION SCHEDULE AND METHODOLOGY

Appendix (B) is a schedule and method of implementation for the various requirements of the OSHA BBP standard.

A. Compliance Methods. Universal precautions will be observed in order to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious material is considered infectious regardless of the perceived status of the source.

Engineering and work practice controls will be utilized to eliminate or minimize exposure to employees. Engineering controls include the use of safer medical devices, such as needle-less devices, shielded needle devices, and plastic capillary tubes. Medical devices with engineered sharps injury protections and needle-less systems constitute an effective engineering control and must be used when feasible.

Where occupational exposure remains after institution of these controls, personal protective equipment shall also be utilized. These controls are inspected and maintained on a regular schedule. Appendix (B) includes the schedule for reviewing the effectiveness of the control.

Handwashing facilities shall be made available to the employees who incur exposure to blood or other potentially infectious materials. These facilities must be readily accessible after incurring exposure. In the event a handwashing facility is not accessible, an antiseptic cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes must be provided. If this alternative is used, the employee is to wash their hands with soap and water as soon as possible. The location(s) of the nearest hand washing facility should be readily available.

After the removal of personal protective gloves, employees must wash their hands and any other potentially contaminated skin area immediately. If employees incur exposure to their skin or mucous membranes those areas shall be washed or flushed with water as soon as possible.

B. Annual Review Exposure Control Plan. An annual review and update will be conducted to reflect changes in technology which eliminate or reduce exposure to bloodborne pathogens. Medical devices with engineered sharps injury protections and needle-less systems constitute an effective engineering control and will be considered during the review. These devices will be used where feasible to ensure employee safety. Refer to Appendix (D).

The review will evaluate innovations in medical procedures and technology aimed at reducing the risk of exposure; document consideration and use of effective safer devices; and select devices which will limit exposure.

1. Employee Input. Input will be solicited from line staff employees responsible for direct patient care regarding the identification, evaluation, and selection of effective engineering controls, including safer medical devices. The employees providing input will represent the range of exposure situations encountered in the workplace, such as those in the Health Department, substance abuse, EMS, along with others involved in direct patient care.

2. Documentation of Employee Input. Employers are required to document how they received input from employees. The Risk Management Specialist will list the employees involved and describe the process by which input was requested; or present other documentation, including references to the minutes of meetings, copies of documents used to request employee participation, or records of responses received from employees.

C. Needles. Contaminated needles and other contaminated sharps will not be bent, recapped, removed, sheared, or purposely broken. An exception to this is allowed if the procedure would require the contaminated needle be recapped or removed, no alternative is feasible, and the action is required by the medical procedure. If such action is required, the recapping or removal of the needle must be done by the use of a mechanical device or a one-handed technique. Appendix (B) includes a list of procedures where recapping or removal is permitted.

D. Containers for Reusable Sharps. Reusable contaminated sharps are to be placed immediately, or as soon as possible, into appropriate sharps containers. Sharps containers are to be puncture and leak resistant, and labeled with a biohazard label.

E. Work Area Restrictions. In work areas where there is a reasonable likelihood of exposure to blood or other potentially infectious materials, employees are not to eat, drink, apply cosmetics, or handle contact lenses. Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, counter tops, or bench tops where blood or other potentially infectious materials are present.

1. Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

2. All procedures will be conducted in a manner which will minimize splashing, spraying, splattering, and generation of droplets of blood or other potentially infectious materials. Appendix (B) includes methods which will be employed to accomplish this goal.

3. Any specimens which could puncture a primary container will be placed within a secondary container which is puncture resistant.

4. If outside contamination of the primary container occurs, the primary container shall be placed within a secondary container which prevents leakage during handling, processing, storage, transport, or shipping.

F. Contaminated Equipment. Supervisors are responsible for ensuring equipment contaminated with blood or other potentially infectious materials be examined prior to servicing or shipping and be decontaminated as necessary unless it is not feasible.

G. Personal Protective Equipment. Appendix (B) lists which procedures require personal protective equipment, the recommended type of protection required, and who has responsibility for distribution to employees.

1. Provisions. Supervisors are responsible for ensuring the required PPE is available within their respective work sites. All PPE used at the facility will be provided without cost to employees. PPE is considered appropriate if it does not permit blood or other potentially infectious materials to pass through or reach the employee's clothing, skin, eyes, mouth, or other mucous membranes under normal conditions and duration of use.

2. Use. Supervisors shall ensure and enforce employee use of appropriate PPE unless the supervisor shows the employee temporarily and briefly declined to use PPE. In rare and extraordinary circumstances, the employee must use their professional judgment to determine whether the PPE would have prevented the delivery of healthcare or posed an increased hazard to the safety of the worker. When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

3. Accessibility. Supervisors shall ensure appropriate PPE, in the appropriate sizes, are readily accessible without cost to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

4. Cleaning, Laundering and Disposal. All personal protective equipment will be cleaned, laundered, disposed, repaired, or replaced by the employer at no cost to the employees. All PPE will be removed prior to leaving the work area. When PPE is removed, it shall be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.

5. Gloves. Gloves shall be worn where it is reasonably anticipated employees will have hand contact with blood, other potentially infectious materials, non-intact skin, and mucous membranes; when performing vascular access procedures; or when handling or touching

contaminated items or surfaces. Disposable gloves are not to be washed or decontaminated for re-use and are to be replaced as soon as practical.

6. Eye and Face Protection. Masks, in combination with eye protection devices, such as goggles or glasses with a solid side shield, or chin length face shields, are required to be worn whenever splashes, spray, splatter, droplets of blood, or other potentially infectious materials may be generated and eye, nose, or mouth contamination can reasonably be anticipated.

7. Additional Protection. Additional protective clothing (such as lab coats, gowns, aprons, clinic jackets, turnout gear, or similar outer garments) shall be worn in instances when gross contamination can reasonably be anticipated.

H. Housekeeping. All contaminated work surfaces will be decontaminated after completion of procedures and immediately or as soon as possible, as well as at the end of the work shift if the surface may have become contaminated since the last cleaning.

1. All bins, pails, and similar receptacles shall be inspected and decontaminated on a regular scheduled basis.

2. Any broken contaminated glassware should not be picked up directly with the hands. Dustpans and brooms or forceps/tongues are to be used.

3. Reusable sharps shall not be stored or processed in a manner which requires employees to reach into the containers by hand where these sharps were placed.

I. Regulated Waste Disposal. A list of disposable sharps containers, other regulated waste containers, and a list of persons tasked with ensuring they are replaced in a timely manner, is included in Appendix (B).

J. Disposable Sharps.

1. Contaminated sharps shall be discarded immediately in containers which are closable, puncture resistant, leak proof on sides and bottom, and labeled or color-coded.

2. During use, containers for contaminated sharps shall be easily accessible to personnel and located close to the area where sharps are used.

3. The containers shall be maintained upright throughout use and replaced routinely as to not overfill.

4. When moving contaminated sharps containers from the area of use, the containers shall be closed immediately to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

5. The container shall be placed in a secondary container if leakage of the primary container is possible. The second container must meet identical requirements.

6. Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

K. Other Regulated Waste. Other regulated waste shall be placed in containers which are closable, constructed to contain all contents, and prevent leakage of fluids during handling, storage, transportation, or shipping. The waste must be labeled or color-coded. Disposal of all regulated waste shall be in accordance with applicable local, state, and federal regulations.

L. Laundry Procedures. Contaminated laundry should be handled as little as possible. Such laundry will be placed in appropriately marked (biohazard labeled or color-coded red) bags at the location where it was used. Such laundry will not be sorted or rinsed in the area of use.

Whenever Body Substance Isolation or Universal Precautions are used in the handling of all soiled laundry, no labeling or color-coding is necessary as long as all employees recognize the hazards associated with the handling of this material.

Whenever contaminated laundry is shipped off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, contaminated laundry must be placed in bags or containers which are labeled or color-coded.

M. Hepatitis B Vaccine and Post-Exposure Evaluation and Follow-Up. The Hepatitis B vaccine and vaccination series is available to all employees who have occupational exposure and post-exposure follow-up for employees who have had an exposure incident. The vaccine and evaluation is no cost to the employee and with a licensed healthcare professional. Any laboratory tests will be conducted by an accredited laboratory and at no cost to the employee.

1. Hepatitis B Vaccination.

a. The Risk Management Specialist is in charge of the Hepatitis B vaccination program.

b. Hepatitis B vaccination will be made available after the employee receives the training in occupational exposure and within ten (10) working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete Hepatitis B vaccination series, and antibody testing revealed the employee is immune, or the vaccine is contraindicated for medical reasons.

c. Participation in a pre-screening program is not a prerequisite for receiving Hepatitis B vaccination.

d. If the employee initially declines Hepatitis B vaccination but at a later date, decides to accept the vaccination, the vaccination shall then be made available.

e. Each employee who declines the offered Hepatitis B vaccination shall sign a waiver indicating their refusal.

f. If a routine booster dose of Hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster doses shall be made available by Alexander County at no cost to the employee.

2. Post-Exposure Evaluation and Follow-Up. All exposure incidents shall be reported, investigated, and documented. When the employee incurs an exposure incident, it shall be reported to the Risk Management Specialist for investigation.

Following a report of an exposure incident, the exposed employee shall immediately receive a confidential medical evaluation and follow-up, including the following elements:

a. Documentation of the exposure route and the circumstances under which the exposure incident occurred.

b. Identification and documentation of the source individual unless it can be established that identification is not possible or prohibited by state or local law.

c. The source individual shall be tested as soon as practical and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the Risk Management Specialist shall establish that legally required consent cannot be obtained. When the

source individual's consent is not required by law, the source individual blood shall be tested and the results documented.

d. When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

e. Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

3. Collection and testing of blood for HBV and HIV serological status will comply with the following:

a. The exposed employee shall be tested following consent.

b. The employee will be offered the option of being tested for HIV/HBV serological status. The blood sample will be preserved for up to 90 days to allow the employee to decide if the blood should be tested for HIV serological status.

c. Each employee who incurs an exposure incident will be offered post-exposure evaluation and follow-up in accordance with the OSHA standard. All post exposure follow-up will be performed by a licensed healthcare provider.

4. Information Provided to Healthcare Professional. The Risk Management Specialist shall ensure the healthcare professional responsible for the employee's Hepatitis B vaccination is provided with the following:

a. A copy of the OSHA Bloodborne Pathogens Standard 29 CFR 1910.1030.

b. A written description of the exposed employee's duties related to the exposure incident.

c. Written documentation of the route of exposure and circumstances under which exposure occurred.

d. Results of the source individual lab tests, if available.

e. All medical records relevant to the employee’s treatment.

5. Healthcare Professional's Written Opinion. The Bloodborne Pathogens Coordinator shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the evaluation. The healthcare professional's written opinion for HBV vaccination shall be limited to whether HBV vaccination is indicated for an employee and if the employee has received such vaccination.

The healthcare professional's written opinion for post-exposure procedures shall be limited to the following information:

a. A statement the employee has been informed of the evaluation results.

b. A statement the employee was told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment. NOTE: All other findings or diagnosis shall remain confidential and shall not be included in the written report.

N. Labels and Signs. Supervisors shall ensure biohazard labels are affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious

materials, and other containers used to store, transport, or ship infectious materials. The universal biohazard symbol shall be used. The label shall be fluorescent orange or orange-red.

Red bags or containers may be substituted for labels. However, regulated wastes must be handled in accordance with OSHA regulations. Blood products released for transfusion or other clinical use are exempted from these labeling requirements.

O. Information and Training. The Risk Management Specialist shall ensure training is provided to each employee at the time of initial assignment to tasks where occupational exposure may occur, and it shall be repeated annually. Training shall be offered during the normal work shift.

1. The training will be interactive and cover the following:
    a. A copy of the standard and an explanation of the contents.
    b. A discussion of the epidemiology and symptoms of bloodborne diseases.
    c. An explanation of the modes of transmission of bloodborne pathogens.
    d. An explanation of the Bloodborne Pathogen Exposure Control Plan and the method for obtaining a copy.
    e. The recognition of tasks which may involve exposure.
    f. An explanation of the use and limitations of methods to reduce exposure.
    g. Information on the types, use, location, removal, handling, selection, decontamination, and disposal of PPE.
    h. Information on the Hepatitis B vaccination, including efficacy, safety, method of administration, and benefits.
    i. Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
    j. An explanation of the procedures to follow if an exposure incident occurs including the method of reporting and medical follow up.
    k. An explanation of the signs, labels, and color-coding systems.

Additional training shall be provided to employees when tasks or procedures effecting the employee's occupational exposure changes. Employees who received bloodborne pathogens training within the 12 months preceding the effective date of this Chapter shall only receive training in provisions not already covered.

P. Recordkeeping. The Risk Management Specialist is responsible for maintaining medical records as indicated below. The records will be kept in the Human Resources Department.

Medical records shall be maintained in accordance with OSHA Standard 29 CFR 1910.1020. These records shall be kept confidential and must be maintained for at least the duration of employment plus 30 years. The records shall include the following:

1. The name and social security number of the employee.
2. The employee's HBV vaccination status including the dates of vaccination.
3. Results of examinations, medical testing, and follow-up procedures.
4. Information provided to the healthcare professional, including a description of the employee's duties as they relate to the exposure incident and documentation of the routes of exposure and circumstances of the exposure. NOTE: For OSHA log recordkeeping purposes, an

occupational bloodborne pathogens exposure incident shall be classified as an injury since it is usually the result of an instantaneous event or exposure.

Q. Training Records. The Risk Management Specialist is responsible for maintaining training records. These records will be retained in the Human Resources Department. Training records shall be maintained for three years from the date of training. The following information shall be documented:

1. Dates of the training sessions.
2. An outline describing the material presented.
3. Names and qualifications of persons conducting the training.
4. Names and job titles of all personnel attending the training sessions.

R. Sharps Injury Log. The Sharps Injury Log will be maintained in a manner which protects the privacy of our employees. Every Sharps injury will be noted on the log and be maintained for the period required by 29 CFR 1904.

All Sharps injuries will be investigated by the supervisor for accident cause(s) and corrective actions. The corrective action will be noted on a Supervisor's Accident Investigation Report form or other tracking methods. At a minimum, the log will contain the following:

1. Type and brand of device involved in the incident.
2. Location of the incident (e.g., department or work area).
3. Description of the incident.

S. Availability of Records. All employee records shall be made available to the employee in accordance with 29 CFR 1910.1020. Employee records shall also be made available to the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH), upon request.

T. Evaluation and Review. The Human Resources Director is responsible for the annual review, its effectiveness, and updating the written program as needed.

U. Outside Contractors. While the written exposure control plan does not have to address information obtained from and provided to outside contractors, procedures are to be established for situations involving the use of outside contractors.

SECTION 9. POST-EXPOSURE PROCEDURES

Procedures outlined in the Health and EMS Departments Bloodborne Pathogen Policies, as amended, must be followed.

CHAPTER 4 ELECTRICAL SAFETY (29 CFR 1910.1200)

All employees must be protected from electrical hazards. This chapter establishes practices and procedures to protect employees from hazards of use of electrical systems and equipment, as well

as hazards of maintenance, repair, installation, or alteration of live and de-energized electrical systems and equipment.

Only properly trained employees may work on electrical systems and equipment. All terms are defined in OSHA 1910, Subpart S.

SECTION 1. WORK PRACTICES

Safety related work practices shall be utilized to prevent electric shock or contact, when work is performed near or on equipment or circuits which are or may be energized. Before an employee begins work, live parts shall be de-energized unless it can be established that de-energizing is not feasible due to design of equipment or operational limitations. If exposed live parts are not de-energized for the above reasons, other safety practices shall be used to protect employees. Only qualified persons may work on energized circuits or equipment. The employee shall be capable of working safely on energized circuits and be familiar with proper use of special precautions, personal protective equipment, insulating and shielding materials, and insulated tools.

SECTION 2. WORKING ON OR NEAR EXPOSED DE-ENERGIZED PARTS

This applies to work on or near exposed de-energized parts which exposes employees to any electrical hazard present. Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged out shall be treated as energized. Detailed electric safety related work practices for both qualified and unqualified persons working on, near, or with the following installations.

A. Stored non-electrical energy that could re-energize electrical circuits shall be effectively blocked or released. Before any circuits or equipment is re-energized, even temporarily, the following requirements should be met in the order listed below:

1. A qualified person should conduct test and visual inspections, as necessary, to verify all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.
2. Employees exposed to the hazards associated with re-energizing the circuits or equipment should be warned to stay clear of circuits and equipment.
3. Each lock and tag should be removed by the employee who applied it or under direct supervision.
4. If the employee is absent from the workplace, the lock or tag may be removed by a qualified person designated to perform such task provided:
    a. The employee who applied the lock or tag is not at the workplace.
    b. Employee is aware the lock or tag has been removed before resuming work.
5. A qualified person shall use test equipment (volt-ohm meter, etc.) and shall verify the circuit and equipment are de-energized. If the circuit is over 600 volts, the test equipment shall be checked for proper operation immediately before and immediately after this test.

B. <u>De-energizing Equipment</u>. Safe procedures for de-energizing circuits and equipment shall be determined before circuits or equipment is de-energized.

C. The circuits and equipment to be worked on shall be disconnected from all electrical sources. Control circuit devices, such as push buttons, selector switches, and interlocks may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electrical equipment may not be used as a substitute for lockout and tagging procedures.

D. Stored electric energy, which might endanger personnel, shall be released. Capacitors shall be discharged and high-capacity elements shall be short-circuited and grounded if the stored electrical energy might endanger personnel.

E. Stored non-electrical energy in devices that could re-energize electrical circuit parts shall be blocked or relieved by accepted electrical practices so that the circuit parts could not be accidentally energized.

SECTION 3. APPLICATION OF LOCKS AND TAGS

A. A lock and tag shall be placed on each disconnecting means used to de-energized circuits and equipment, except as provided in paragraphs C and E below. The lock shall be attached to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools, (bolt cutter, etc.).

1. Premises wiring. Installation of electric conductors and equipment within or on buildings or other structures, and on other premises such as yards, carnival, parking, other lots, and industrial substations.
2. Wiring for connection to supply. Installations of conductors that connect to the electrical supply.
3. Other wiring. Installation of other outside conductors on the premises.
4. Optical fiber cable. Installation of optical fiber cable where such installations are made along with electric conductors.
5. General electrical safety work practices by employees.

B. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

C. If a lock cannot be applied, a warning tape adhered to the disconnecting means with a tag may be used.

D. A tag used without a lock, as permitted by paragraph C above, shall be supplemented by at least one additional safety measure providing a level of safety equivalent to the use of a lock. Examples of additional safety measures including the removal of a fuse, blocking a controlling switch, or opening an extra disconnect.

E. A lock shall be placed with a tag only under the following conditions:

1. Only one circuit or piece of equipment is de-energized.
2. The lockout period does not extend beyond the work shift.
3. Employees exposed to the hazards associated with re-energizing the circuit or equipment should be familiar with this procedure.

SECTION 4. VERIFICATION OF DE-ENERGIZED CONDITIONS

The parameters in this section shall be met before any circuits or equipment can be worked as de-energized:

A. A qualified person shall operate the equipment controls or otherwise verify the equipment cannot be restarted.

B. A qualified person shall use test equipment on the circuit elements and electrical parts to verify the parts are de-energized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back-feed even though specific parts of the circuit have been de-energized and presumed to be safe. Test equipment shall be checked for proper operation immediately before and immediately after this test.

SECTION 5. RE-ENERGIZING EQUIPMENT

The parameters in this section shall be met, in the order given, before circuits or equipment are re-energized, even temporarily.

A. A qualified person shall conduct tests and visual inspections to verify all tools, electrical jumpers, shorts, grounds, and other such devices were removed, so circuits and equipment can be safely energized.

B. Employees exposed to the hazard of re-energizing the circuits or equipment shall be warned to stay clear of circuits, equipment, and use of the following:

1. Employees working in areas where there are potential electrical hazards should be provided with, and should use, electrical protective equipment appropriated for the specific parts of the body to be protected. Such items include rubber protective equipment such as insulating gloves, blankets, hoods, line hose, sleeves, and matting for use around electrical apparatus. (29 CFR 1910.137)
2. Employees should wear protective equipment for the eyes or face wherever there is danger of injury from electric arcs, flashes, or from flying objects.
3. When working near exposed energized conductors or circuit parts, each employee should use insulated tools. If the insulating capability of insulated tools or handling equipment is subject to damage, the insulating material shall be protected.
4. When normally enclosed live parts are exposed for maintenance or repair, they should be guarded to protect from contact with said parts.

C. Each lock and tag shall be removed by the employee who applied it or under direct supervision. If this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that the:

1. County ensures the employee who applied the lock or tag is not available at the workplace.
2. County ensures the employee is aware the lock or tag has been removed by a qualified person before resuming work at the workplace.

SECTION 6. SAFEGUARDS FOR PERSONNEL PROTECTION

A. Employees working in areas where there are potential electrical hazards shall be provided with, and shall use, electrical protective equipment appropriate for the specific parts of the body to be protected and for the work to be performed.

B. Protective equipment shall be maintained in a safe, reliable condition and shall be periodically inspected or tested, as required by 29 CFR 1910.137.

C. If the insulating capability of protective equipment may be subject to damage during use, the insulating material shall be protected. (For example, an outer covering of leather is sometimes used for the protection of rubber insulating material.)

D. Employees shall wear non-conductive head protection wherever there is a danger of injury from electric shock or burns due to contact with exposed energized parts.

E. Employees shall wear protective equipment for the eyes or face wherever there is danger of injury from electric arcs, flashes, or flying objects resulting.

F. When working near exposed energized conductors or circuit parts, each employee shall use insulated tools or handling equipment when the tools might make contact with such conductors or parts. If the capability of insulated tools or handling equipment is subject to damage, the insulating material shall be protected.

1. Fuse handling equipment, insulated for the circuit voltage, shall be used to remove or install fuses when the fuse terminals are energized.
2. Ropes and hand lines used near exposed energized parts shall be non-conductive.

G. Protective shields, protective barriers, or insulating materials shall be used to protect each employee from shock, burns, or other electrically related injuries while the employee is working near exposed energized parts which might be accidentally contacted; or where dangerous electric heating or arcing might occur. When normally enclosed live parts are exposed for maintenance or repair, they shall be guarded to protect from contact with the live parts.

SECTION 7. TRAINING

A. Once an evaluation of jobs and areas is performed, training will be conducted for employees who face a risk of electric shock that is not reduced to a safe level by the existing source.

B. Employees in occupations listed in Table S-4 (29 CFR 1910.332) face such a risk and are required to be trained. Other employees who also may reasonably be expected to face risk of injury due to electric shock or other electrical hazards must also be trained. These employees will be identified based upon their job title and/or area(s) they are exposed to.

C. Content.

1. General Electrical Safety Policy. The Risk Management Specialist will develop a facility wide electrical policy detailing general electrical safety.

2. Employee Job Specific Training (unqualified). Employees who are classified as unqualified persons shall be trained in, and familiar with, any electrically related safety practices inherent to their jobs. First line supervisors in coordination with the Public Works Director will develop a training outline detailing the electrical hazards associated with a work area or job when an initial evaluation reveals a risk of electrocution.

3. Employee Job Specific Training (qualified). Employees who are classified as qualified persons shall be trained in, and familiar with, the safety-related work practices pertaining to their respective job assignments. First line supervisors in coordination with the Public Works Director will develop a training outline detailing the electrical hazards associated with a work area or job when an initial evaluation reveals a risk of electrocution. Qualified persons shall at a minimum be trained in, and familiar with, the following:

a. Skills and techniques necessary to distinguish exposed live parts from other electric equipment parts.

b. Skills and techniques necessary to determine the nominal voltage of exposed live parts.

c. The clearance distances specified in 29 CFR 1910.333(c) and the corresponding voltages to which the qualified person will be exposed.

D. Qualified persons whose work on energized equipment involves either direct contact or contact by means of tools or materials must also have the training needed for safe exposure to energized part.

1. The training required shall be of the classroom or on-the-job type. The degree of training provided shall be determined by the evaluated risk to the employee.

2. The County will provide training to ensure the electrical hazards associated with their job are understood by employees and the knowledge and skills required for the safe application, usage, of work place equipment, and removal of the energy controls are acquired by employees. The training shall include the following:

a. Authorized employees shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

b. Effected employees shall be instructed in the purpose and use of the energy control procedure.

c. All other employees whose work operations are, or may be, in an area where energy control procedures may be utilized, shall be instructed about the procedure and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out. Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices provided by a lock. Non-legible or missing tags should be reported to the Safety Coordinator immediately.

E. Refresher Training. Retraining shall be provided for all authorized and effected employees whenever there is a change in their job assignments, a change in machines or equipment, processes presenting a new hazard, when work includes hazardous areas, or when there is a change in the energy control procedures.

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever the employer has reason to believe, there are deviations from or inadequacies in the employee's knowledge of known hazards or use of the energy control procedures. The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

F. Certification. The County shall certify employee training was completed and is continued. The certification shall contain each employee's name and dates of training.

SECTION 8. RESPONSIBILITIES

A. Department Head. The Department Head or designee shall:

1. Immediately notify the Maintenance Supervisor if any electrical system or equipment is found to be defective and (if safe to do so) immediately place the equipment or system out of service.

2. Lock-out/tag-out must be followed, and barriers or other appropriate safeguards used to protect personnel. The Department Head or designee shall communicate the status to all affected employees.

B. Maintenance Supervisor. The Maintenance Supervisor shall:

1. Obtain proper permits from the Building Inspections Department before any electrical work begins and all required inspections are performed during the course of the project.

2. Ensure all qualified and unqualified employees are aware of the risks inherent with electrical work, including risks associated with arc flash, arc blast, electric shock, burns, and electrocution.

3. Confirm attendance of training and implementation.

4. Verify only properly trained individuals perform work on electrical systems and equipment.

5. Verify only qualified employees are involved in the maintenance or repair of energized electrical systems or equipment.

6. Issue an Energized Electrical Work Permit for any work on energized systems. Permits shall be issued in writing and granted on a case-by-case basis. Permits shall only be issued to qualified employees, and only after the Maintenance Supervisor and the qualified employee determine de-energizing the system is not feasible.

C. Employees. Employees are primarily responsible for proper use, care, maintenance, and inspection of their assigned equipment.

1. Any electrical equipment or systems found to be defective shall be immediately reported to the Maintenance Supervisor, and placed out of service using proper lock-out/tag-out procedures, guarding, barricading, and signage as appropriate.

2. Proper use of required PPE.

3. Do not perform any electrical work for which they are not qualified.

4. Obtain an energized electrical work permit from the Maintenance Supervisor before commencing any work on energized electrical systems or equipment.

5. Establish a safe work environment, including proper safeguarding, communication to affected employees, and lock-out/tag-out procedures.

D. Safety Committee. The Risk Management Specialist is responsible for assisting in the development of appropriate safety policies, providing technical guidance in the implementation of policies, and assisting with employee training.

E. Training. Each employee assigned to perform work on electrical systems or equipment must be properly trained to recognize hazards, and procedures to follow to minimize those hazards. Employees shall be trained in the following areas:

1. Proper equipment safeguarding and de-energizing procedures.
2. Providing and maintaining a safe working environment.
3. Proper selection of PPE.
4. Minimum approach areas.
5. Risks involved with working on and around electrical systems and equipment.
6. Differences between qualified employees and unqualified employees.
7. NFPA 70E requirement standards.
8. Complete and pass all portions of the training and exams.
9. Proper emergency response, first-aid, and CPR.
10. Unqualified employees must successfully complete and pass all portions of the prescribed unqualified employees training and exams before being approved to assist with work on any electrical systems or equipment.
11. A training record shall be maintained for each employee. The record shall contain the name of employee, date of training, and signature of person conducting training session.
12. If any electrical work-related injury or accident occurs, or if any employee is found to have violated any of the requirements of this policy, all involved employees shall be required to complete retraining before they may continue work on electrical systems and equipment.

F. Guidelines. Each employee involved in the maintenance, repair, or installation of electrical systems and equipment shall abide by this policy, NFPA 70e, and all applicable regulations contained in OSHA 29 CFR 1910.301 – 1910.399 (Subpart S).

1. Electrical permits shall be obtained from the Building Inspections Department and all required inspections shall be performed.
2. All affected employees must be notified in advance of work being performed and adequate barriers shall be in place throughout the entire duration of the project.
3. All necessary portions of electrical systems and equipment shall be de-energized before beginning any electrical work. Applicable lock-out/tag-out procedures must be followed.
4. All de-energized electrical systems shall be locked-out by the responsible qualified employee. Any system that cannot be locked-out must be tagged-out. All panels and covers shall be in place, and all tools and materials put away before locks/tags are removed and energy restored to systems.
5. All tools shall be appropriate for the task. Only electrically insulated tools and non-conductive ladders shall be used.
6. Electrically conductive jewelry and other nonessential belongings shall be removed prior to working on electrical systems. Clothing should be of natural fibers such as cotton, wool, or leather. Shoes shall have an insulating rubber sole and be without steel toes or shanks.
7. Damp or wet areas shall be made dry before any electrical work begins.
8. All electrical work performed by unqualified employees shall be under the direct supervision of a qualified employee.

9. Only qualified employees may work on energized electrical systems, and may only do so after obtaining an energized electrical work permit from the Maintenance Supervisor.

10. A minimum of two (2) qualified employees are required at all times when work is being performed on energized electrical systems and equipment.

G. Energized Electrical Work Permit. Energized electrical work permits shall be required for any work on energized systems or equipment. No permit shall be issued for, nor any work performed on, electrical systems greater than 250V. Work shall only be performed on energized systems when de-energizing is deemed unreasonable, and shall only be used after exhausting all alternatives. The energized electrical work permit shall contain, as a minimum, the following information:

1. Justification of need for system remaining energized.
2. Exact system(s) and system voltage(s) to be covered by permit.
3. Applicable boundary distances from NFPA 70E.
4. Required PPE.
5. Signature of person authorizing work.
6. Signature of employees performing work.
7. Date and time for which permit is valid.

H. Contractors. It is the responsibility of the County to make contractors aware of any known electrical hazards which might pose a danger to the contractor or the contractor's employees. A complete list of known hazards shall be continuously maintained and updated, and the current copy will be available from the Maintenance Supervisor or the Risk Management Specialist. Contractors shall:

1. Abide by this chapter and inform the County of their specific lock-out/tag-out procedures before any work begins.
2. Maintain safety and work training records for their employees, and make those records available to the County prior to being contracted for any work.
3. Not begin any work until all required permits are secured.

CHAPTER 5 EQUIPMENT OPERATIONS (29 CFR 1926.600)

This chapter establishes practices and procedures to protect employees from hazards working with motorized equipment such as tractors, loaders, and pans. An employee must be protected and exercise the utmost caution when operating or working around motorized equipment.

SECTION 1. RESPONSIBILITIES

A. Department Heads or Designees.

1. Ensure the attendance of training sessions and continuation in the program.
2. Ensure only trained individuals are assigned to operate motorized equipment.

B. Employees. Employees are responsible for proper care, use, and inspection of their assigned equipment.

C. Safety Committee.
1. Assists departments in developing appropriate motorized equipment policies.
2. Provides technical guidance and assists with employee training.

SECTION 2. TRAINING

A. Each employee who may be assigned to operate motorized equipment will be trained to recognize and follow hazards and procedures in order to minimize hazards.

B. Each employee must be trained in the following areas:
1. Proper equipment inspection.
2. Proper additional equipment, including but not limited to, goggles and ear plugs.

C. A training record must be maintained for each employee. The record shall contain the employee's name, date of training, and a signature from the person conducting the training.

D. Retraining shall be conducted when there is a change or replacement of equipment.

SECTION 3. OPERATIONS

The employee shall follow these instructions prior to and during the operation of motorized equipment:

A. Review the owners' operation manual.

B. Demonstrate knowledge of equipment inspection referring to fluids, bottles, lights, and warning devices.

C. Perform a pre-operation inspection of the equipment.

D. Demonstrate competence and the ability to request proper repair of detective equipment.

E. Demonstrate ability to properly use a fire extinguisher.

F. At no time operate outside the established guidelines with respect to speed, slope, reach, and lift capacity.

G. If another individual comes within 50 feet of the work area, the employee shall bring the motorized equipment to a safe stop and remain stationary until the work area is clear.

CHAPTER 6 FIRE EXTINGUISHERS (29 CFR 1910)

SECTION 1. SAFETY RESPONDER FUNCTIONS

Employees trained in the use of portable fire extinguishers may attempt to extinguish a fire if the following conditions exist:

A. All occupants are evacuated.
B. Emergency response personnel have been notified.
C. The appropriate type of extinguisher is available.
D. The fire is small and contained to the area of origin.

E. The employee is able to avoid smoky environments and is able to fight the fire with their back to the exit.
F. If an employee has not attended fire extinguisher training or if they are in doubt that all of the above conditions exist, the employee is not to attempt to fight the fire and shall evacuate the area immediately.

SECTION 2. TRAINING OUTLINE

Emphasize a portable fire extinguisher can be a useful firefighting tool but proper training is required in order for people to use extinguisher safely and effectively.

A. Discuss the fire tetrahedron.
B. Discuss the different types of fires (Classes A, B, C, D, & K).
C. Discuss the proper type of extinguisher to use on each type of fire.
D. Discuss firefighting decision criteria (hazards).
E. Explain fire extinguisher use (P.A.S.S.).
F. Show video or presentation.
G. Conduct quiz/answer questions (if required).
H. Conduct hands-on extinguisher training.
I. Training and record keeping requirements
    1. Safety Responders are required to attend annual training.
    2. Training will be offered to all employees.
    3. A minimum of one (1) person per building location is required to be trained.
    4. Documented training records with employee signatures will be maintained by the Risk Management Specialist.

CHAPTER 7 FIRST AID (29 CFR 1910)

SECTION 1. GENERAL STATEMENT

It is the policy of the County to have a safe work environment for employees, visitors, and those conducting business in Alexander County Offices. Emphasis is placed on the prevention of accidents and injuries. When accidents do occur, prompt and knowledgeable treatment of injured employees will, in many cases, prevent minor injuries from becoming major ones. Alexander County will train personnel in basic first aid and blood-borne pathogens exposure. Trained individuals will respond to medical problems or medical emergencies.

SECTION 2. FIRST AID GUIDELINES

In the absence of an infirmary, clinic, or hospital in or near proximity to the workplace, Safety Responders will be adequately trained to render first aid.

A. First aid kits will be maintained in all buildings and will be inventoried on a routine basis.

B. Treatment for cuts, scratches, and other minor injuries should be given by the Safety Responder.

C. There may be cases when injured employees who need professional medical attention can be transported to the hospital by car. There may be other cases, however, when injured employees should be transferred by ambulance. If there is any doubt about the mode of transportation, an ambulance should be called. For example, the following conditions would definitely indicate ambulance service:

1. Employee is unconscious or in shock.
2. Hemorrhaging.
3. Severe abdominal cramps and/or vomiting.
4. Any apparent fracture.
5. Other symptoms of internal injury.

D. All animal bites, because of the possibility of rabies, should receive prompt medical attention by a physician. Every attempt should be made to confine the animal.

SECTION 3. OBJECTIVES

Personnel will be trained in CPR, basic first aid, and blood-borne pathogens exposure:

A. CPR. Includes one-person, two-person, child, and infant CPR along with foreign airway body obstruction. Training may also include rescue breathing.

B. First Aid. Consists of hemorrhage control and stabilization of a fracture or possible fracture.

C. Blood-borne Pathogen Exposure. Includes proper cleaning procedures, disposal of contaminated materials, medical condition cleaning, and disposal of contaminants.

SECTION 4. FIRST AID CLASS OUTLINE

A. Introduction of the instructor and students.
B. Hemorrhage Control – explanation of direct pressure and how it is to be applied.
C. Elevation – when and how to elevate the injured area.
D. When and how to use pressure points, pressure dressing, and tourniquets.
E. Stabilization – how to manually stabilize cervical spine until help arrives.
F. Fractures – describe potential fractures and how to support or stabilize the area.
G. PPE – describe when to use, proper use, and steps to follow after exposure.

CHAPTER 8 HAZARD COMMUNICATIONS (29 CFR 1910.1200)

SECTION 1. GENERAL INFORMATION

This chapter is designed for use with chemical operations and exposures. The County may have the following chemical hazards (list is not exhaustive):

A. Solvents, grease, lubricants, and chlorine-based materials used in repair work for vehicle engine maintenance.

B. Sulfuric acids, caustics, chlorine gases, and other strong irritants.

C. Pesticides, herbicides, fungicides, and other fumigants for insect and rodent control.

D. Solvents, lubricants, and oils used to clean firearms.

E. Inks, dyes, toner, and other materials associated with copiers and printers.

G. Fuels, such as kerosene, gasoline, diesel fuels for vehicle use, and belting units.

H. Organic solvents and chemicals such as ammonia, ethers, alcohols.

I. Soaps, detergents, waxes, window cleaners, ammonia-based products, and other agents used in cleaning services.

J. Paints and paint thinner solvents used throughout county operations.

K. Chemicals/substances used by Emergency Medical Services and the Health Department, such as compressed gases, anesthetics, acids, caustics, etc. These departments maintain separate hazardous communication policies.

All departments will be evaluated to determine if other non-routine jobs create hazardous chemical/substance exposures that management has not previously identified.

SECTION 2. HAZARD COMMUNICATION STANDARD SUMMARY

A. Scope and Application. This standard applies to all departments and employees of Alexander County. Suppliers of hazardous chemicals are required to transmit hazard information to their customers. The comprehensive Hazardous Communication Program will inform and train employees about the following:

1. Hazardous chemicals used in the workplace.
2. Where the chemicals are located.
3. Physical and health hazards associated with the chemicals.
4. Protective measures which must be taken to prevent exposure.
5. Procedures for chemical exposure.

B. Exempt Substances. The rule does not cover potentially hazardous chemicals brought into the work place for the personal use of employees such as foods, prescription drugs, cosmetics, or tobacco products. The rule also does not apply to:

1. Articles (finished products).
2. Hazardous waste, most pesticides, and certain toxic substances defined by the Toxic Substances Control Act.
3. Alcoholic beverages.
4. Food, drugs, and cosmetics intended for personal use.
5. Consumer products or hazardous substances.
6. Medicine in final form such as pills or tablets.
7. Wood or wood products.

C. Specific Requirements.

1. Hazard Determination. Chemical manufacturers are required assess the hazard of chemicals which they produce or import. All employers are required to provide information to their employees about potential hazards by means of the Hazardous Communication Program. Written procedures used by Alexander County to determine the hazards of chemicals are available to employees upon request.

2. Written Hazard Communication Program. A written hazard communication program is developed for work places describing how the requirements for labels and other forms of warning, SDS, employee information, and training are met.

3. Labels and Other Forms of Warning. The chemical manufacturers shall ensure each container of hazardous material is labeled, tagged, or marked with the following information:

a. Identity of the hazardous chemical/material.
b. Appropriate hazard warning.
c. Name and address of the manufacturer or responsible party.

The County must meet the first two (2) requirements if it is incomplete from the manufacturer. The County may use signs, placards, process sheets, etc., instead of affixing labels to individual stationery process containers, as long as the method identifies the containers accurately. Employer is not required to label portable containers into which hazardous chemicals are transferred and intended only for immediate use by the individual making the transfer.

D. Safety Data Sheets (SDS).

Chemical manufacturers and users must obtain or develop a Safety Data Sheet (SDS) for each hazardous chemical used. The SDS must be provided with the first shipment and the employer must maintain SDS for all materials used by employees. The SDS must be readily available for critical information and must be readily accessible to employees in every job location. A master copy of all SDS is kept in the Risk Management Office (excluding EMS and the Health Dept.). Specific information on how to read an SDS is contained in this chapter.

E. Employee Information and Training. Employees have a right to information and training on hazardous materials. This basic information includes:

1. Physical and health hazards of chemicals in any operation in the work area including the location and availability of the written hazard communication program in each department, a required list of hazardous chemicals, and SDS.

2. Methods, observations, and monitoring data used to detect and measure the presence or release of hazardous chemicals.

3. Measures protect the employee from chemical hazards, including personal protective equipment, work practices, and emergency procedures.

4. Details of the Hazard Communication Program including labeling and SDS.

5. Questions can be answered by contacting the Safety Coordinator or Risk Management Specialist.

SECTION 3. HAZARD COMMUNICATION PROGRAM

The program was established to meet the OSHA requirements for Hazard Communication Standard (29 CFR 1910.1200). The purpose of this program and standard is to ensure employees are made aware of the chemical hazards found in their work environment. This information is to be transmitted by means of a written hazard communication program, container labeling, safety data sheets, employee education, and training programs. A copy of the program is available in each department, and at the Risk Management Department, for review.

SECTION 4. SAFETY DATA SHEETS (SDS)

The Risk Management Specialist, in consultation with the Safety Committee, is responsible for maintaining the data sheet system for all county departments. This individual will review incoming data sheets for new and significant health/safety information.

SDS is available to all employees in their work area for review during each work shift. If SDS are not available or new chemicals in use do not have an SDS, immediately contact the assigned Safety Coordinator.

SECTION 5. CONTAINER LABELING

The Department Head or designee will verify all containers received for use are clearly labeled as to their contents, note the appropriate hazard warning, and list the name and address of the manufacturer.

The Department Head or designee will ensure all secondary containers are labeled with either an extra copy of the original manufacturer's label or a generic label noting chemical identity and appropriate hazard warnings. For help with container labeling, please contact the Department Head or Safety Coordinator. Unless absolutely necessary, chemicals shall be used and maintained in original container.

SECTION 6. EMPLOYEE TRAINING AND EDUCATION

The Safety Committee is responsible for the employee training program. The Committee will ensure all elements specified below are carried out.

A. Prior to starting work, each new employee will attend a health and safety orientation and will receive information and training on the following:

1. An overview of the requirements contained in the Hazard Communication Standard.
2. Chemicals present in their workplace operations.
3. Location and availability of written Hazard Program.
4. Physical and health effects of the hazardous chemicals.
5. Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
6. How to lessen or prevent exposure to the hazardous chemicals through usage of control/work practices, personal protective equipment, and good personal hygiene practices.
7. Steps the County followed to lessen or prevent exposure to these chemicals.
8. Emergency procedures to follow for exposure to these chemicals or if there is a chemical spill.
9. How to read labels and review SDS to obtain appropriate hazard information.
10. Location of SDS file and location of hazardous chemical list.

After attending the training class, each employee will sign an acknowledgment form to verify training attendance, receipt of written materials, and understanding of Alexander County's policies on hazard communication. Prior to a new chemical hazard being introduced into any department, each employee will be given information as outlined above.

SECTION 7. HAZARDOUS NON-ROUTINE TASKS

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information about hazardous chemicals to which they may be exposed during such activity.

This information will include specific chemical hazards, protective/safety measures the employee will take to prevent over-exposures, and measures the County followed to lessen the hazards including ventilation, respirators, presence of another employee, and emergency procedures.

A. Unlabeled Pipes. Employees will be informed of the chemical hazards in unlabeled pipes. In areas where chemicals in unlabeled pipes may pose a risk, employees will be informed of procedures should a leak or rupture occur. The Department Head or designee in each department should be contacted if questions arise regarding any unlabeled pipes within their area.

SECTION 8. INFORMING CONTRACTORS

It is the responsibility of Department Heads or designee to provide employees and/or contractors with the following information:

A. Hazardous chemicals to which they may be exposed to while on the job site.

B. Precautions the employees may take to lessen the possibility of exposure by usage of appropriate protective measures.

C. Training for employees to understand the facility labeling systems.

D. Contact each contractor before work is started to gather and disseminate any information concerning chemical hazards.

E. Notify each contractor regarding safety data sheets for the products. Copies will be made available or kept in a central location for the duration of time the contractor is on site.

F. Communicate hazardous chemicals on-site and ones received from contractors. Copies of all information on all hazards and hazardous communications shared between the department and the contractor shall be submitted to Risk Management.

SECTION 9. HAZARD COMMUNICATION TRAINING

A hazard communications workshop shall be conducted with the following subjects:

A. General information including workplace safety, health hazards, and a hazardous chemicals or materials list.

B. Safety Data Sheets. Sheets should be available on hazardous chemicals and the location of the sheets should be available to any employee. The sheets should contain the following information: product name, hazardous ingredients and primary entry to the body, physical data, fire and explosion data, health hazards, reactivity, spill or leak procedures, and any special protection information.

C. Labels and other warnings. Labels should include identity information and appropriate hazard warnings, manufacturer contact information, as well as symbols and rating systems. Labels are not required on portable containers and should not be removed or defaced. Labels should be readable at all times.

D. Employees will sign a training acknowledgement form.

CHAPTER 9 HAZARDOUS ENERGY CONTROL - LOCK OUT/TAG OUT
(29 CFR 1910.147)

SECTION 1. GENERAL REQUIREMENTS

This chapter addresses the servicing and maintenance of machines and equipment in which the unexpected energization or startup of the machines or equipment, or release of stored energy, could cause injury to employees.

A. Application. This applies to the control of energy during servicing and/or maintenance of machines and equipment. Energy control in the course of normal operation is not covered. Servicing and/or maintenance which takes place during normal production operations is covered if an employee is required to:

1. Remove or bypass a guard or other safety device.
2. Place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

B. Exception. Minor tool changes, adjustments, and other minor servicing activities, which take place during normal production operations, are not covered if they are routine, repetitive, and integral to the use of the equipment for production. Work is performed using alternative measures which provide effective protection in accordance with company operational procedures.

C. This instruction does not apply to:

1. Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or startup of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.
2. Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water or petroleum products when they are performed on pressurized pipelines, provided it is demonstrated that:
    a. Continuity of service is essential.
    b. Shutdown of the system is impractical.
    c. Documented company procedures are followed.
    d. Special equipment is used which will provide proven effective protection.

SECTION 2. PROGRAM IMPLEMENTATION

The program utilizes procedures for affixing appropriate lock-out devices or tag-out devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy.

A. Energy Control Program. Employees will train and conduct periodic inspections to ensure the machine or equipment shall be isolated from the energy source and rendered inoperative.

1. Tag-out. If an energy-isolating device is not capable of being locked out, the energy control program shall utilize a tag-out system.
2. Lockout. If an energy isolating device is capable of being locked out, the energy control program shall utilize lockout, unless it can be demonstrated the utilization of a tag-out system will provide full employee protection.
3. Future requirements. 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 shall be designed to accept a lockout device.

B. Full Employee Protection.

1. Tag-out location. When a tag-out device is used on an energy-isolating device, the tag-out device shall be attached at the same location that the lockout device would have been attached, and the tag-out program will provide a level of safety equivalent to using a lockout program.

2. Lockout equivalency demonstration. The employer shall demonstrate full compliance with all tag-out related provisions 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 shall include where possible the implementation of additional safety measures such as the:

a. Removal of isolating circuit elements.
b. Blocking of controlling switches.
c. Opening of extra disconnecting devices.
d. Removal of valve handles reducing possible inadvertent energization.

C. Energy Control Procedure Exceptions. Once a facility evaluation is accomplished, documented procedures will not be developed when the following conditions exist:

1. The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down.

2. The machine or equipment has a single energy source, which can be readily identified and isolated.

3. The isolation and locking out of the energy source will completely de-energize and deactivate the machine or equipment.

4. The machine or equipment is isolated from the energy source and locked out during servicing or maintenance.

5. A single lockout device will achieve a locked-out condition.

6. The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.

7. The servicing or maintenance does not create hazards for other employees.

8. The County has no history of accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance. In the event of such occurrence, energy control procedures will be developed.

D. Energy Control Procedures.

1. Once evaluation is accomplished, procedures shall be developed, documented, and utilized for the control of potentially hazardous energy.

2. Procedural format. The procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to, the following:

a. A specific statement of the intended use.
b. Steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy.
c. Steps for the placement, removal, and transfer of lockout devices or tag-out devices and the person(s) responsible.
d. Requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tag-out devices, and other energy control measures.

E. Facility/Department Evaluation. The Safety Committee shall evaluate each department to determine which machines or pieces of equipment require steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy.

F. Protective Materials and Hardware. Appropriate lockout devices such as locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided for isolating, securing, or blocking of machines or equipment from energy sources.

G. Selection Criteria.

1. Lockout/tag-out devices shall be singularly identified as the only devices(s) used for controlling energy and meet the following requirements:

a. Devices shall be capable of withstanding the expected exposure time.

b. Devices shall be constructed and printed so exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

c. Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

2. Standardization within the facility. Lockout and tag-out devices shall be standardized within the facility in at least color, shape, or size; and additionally, in the case of tag-out devices, print and format shall be standardized.

3. Removal requirements.

a. Lockout devices. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

b. Tag-out devices. Tag-out devices, and their attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tag-out device attachments shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

4. Identification requirements.

a. Devices shall indicate the identity of the employee applying the device(s).

b. Devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate, etc.

H. Periodic Inspections and Certifications.

1. Inspections. Periodic inspections of the energy control procedure will be conducted for each machine or piece of equipment at least annually to ensure the procedure and the requirements are being followed.

a. The periodic inspection shall be performed by an authorized employee other than the ones(s) utilizing the energy control procedure.

b. Inspections will be conducted by the personnel authorized to evaluate lockout/tag-out requirements including the Risk Management Specialist and Safety Coordinators.

2. Tag-out Inspections. The periodic inspection shall include a review, between the inspector and each authorized and affected employee.

3. Certifications. The County shall certify the periodic inspections were performed. The certification shall at a minimum identify:

a. Machine or equipment on which the procedure was utilized.
b. Date of the inspection.
c. Employees included in the inspection.
d. Person performing the inspection.

SECTION 4. TRAINING

The County will provide training to ensure the purpose and functions of the energy control program are understood by employees and the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees.

A. The training shall include the following:

1. Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

2. Each affected employee shall be instructed in the purpose and use of the energy control procedure.

3. All other employees whose operations are in an area where energy control procedures may be utilized, shall be instructed about the procedure and the prohibition related to attempts to restart or reenergize tagged/locked out machines or equipment.

B. When tag-out systems are used, employees shall be trained in the following limitations:

1. Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint provided by a lock.

2. When a tag is attached to an energy isolating means, it is not to be removed without authorization of the person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

3. Tags must be legible and understandable by all authorized employees, affected employees, and all other employees work in the area. Non-legible or missing tags will be reported to the Safety Coordinator immediately.

4. Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

5. Tags may evoke a false sense of security and their meaning needs to be understood as part of the overall energy control program.

6. Tags must be securely attached to energy isolating devices so they cannot be inadvertently or accidentally detached during use.

C. Refresher Training.

1. Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments; a change in machines, equipment, or processes that present a new hazard; or when there is a change in the energy control procedures.

2. Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever management has reason to believe, there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

3. The retraining shall re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary.

D. Certification. The County will certify the employee training was accomplished and current. The certification shall contain names and dates of training.

E. Energy Isolation. Lock-out or tag-out is performed only by authorized employees.

F. Notification of Employees. Affected employees shall be notified of the application and removal of lockout devices or tag-out devices. Notification shall be given before the controls are applied and after they are removed from the machine or equipment.

G. Application of Control. The lockout or tag-out procedures shall cover the following elements and actions and shall be done in the following sequence:

1. Preparation for shutdown. Before an authorized or affected employee turns off equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

2. Machine or equipment shutdown. The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

3. Machine or equipment isolation. All energy isolating devices needed to control the energy shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

4. Lockout device application.

a. Lockout or tag-out devices shall be affixed to each energy-isolating device by authorized employees.

b. Lockout devices, where used, shall be affixed in such a manner as will hold the energy isolating devices in a "safe" or "off" position.

c. Tag-out devices shall be affixed in such a manner as will clearly indicate the operation or movement of energy isolating devices from the "safe" or "off" position.

5. Tag-out device application.

a. The tag attachment shall be fastened at the same point at which the lock would have been attached.

b. Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

6. Stored energy.

a. Following the application of lockout or tag-out devices, all hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

b. If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

7. Verification of isolation. Prior to starting work on locked out or tagged out machines or equipment, the authorized employee shall verify that isolation and de-energization of the machine or equipment were accomplished.

H. Release from Lockout or Tag-out.

1. Before lockout or tag-out devices are removed and energy is restored to the machine or equipment, the authorized employee shall ensure the work area is:

a. Clear from nonessential items and equipment components are intact.

b. Checked so all employees have been safely positioned or removed.

2. After lockout or tag-out devices are removed and before a machine or equipment is started, affected employees shall be notified the lockout or tag-out device(s) have been removed.

3. Each lockout or tag-out device shall be removed from each energy-isolating device by the employee who applied the device. When the authorized employee who applied the lockout or tag-out device is not available to remove it, the device may be removed under the direction of authorized manager, provided that specific procedures and training for such removal were developed, documented, and incorporated into the energy control program. The employee shall demonstrate the specific procedure provides equivalent safety to the removal of the device. The specific procedure shall include at least the following elements:

a. Verification the employee who applied the device is not at the facility.

b. Make all reasonable efforts to contact the employee to notify them the lockout or tag-out device was removed.

c. Ensuring the employee is aware before resuming work at the facility.

I. Testing of Machines, Equipment, or Components. In situations in which lockout or tag-out devices must be temporarily removed from the device and the machine or equipment energized to test or position the machine, equipment, or component thereof, the following sequence of actions shall be followed:

1. Clear the machine or equipment of tools and materials.

2. Remove employees from the machine or equipment area.

3. Remove the lockout or tag-out devices as specified in the machine procedures.

4. Energize and proceed with testing or positioning.

5. De-energize all systems and reapply energy control measures in accordance with machine procedures and continue the servicing and/or maintenance.

J. Other Personnel. Whenever non-county personnel are engaged in activities covered by the scope and application of this instruction, the County and the outside employer shall inform each other of their respective lockout or tag-out procedures. Alexander County shall ensure his/her employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program.

K. Group Lock-out or Tag-out. When servicing and/or maintenance is performed by a crew, craft, department, or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to one provided by the implementation of a personal lockout or tag-out device. Group lockout or tag-out devices shall be used in accordance with the procedures required by this instruction governing individual procedures which shall include, but not necessarily limited to, the following specific requirements:

1. Primary responsibility will be vested in an authorized employee for a set number of employees working under the protection of a group lockout or tag-out device.
2. Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tag-out of the machine or equipment will be made.
3. When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tag-out control responsibility will be vested to an authorized employee designated to coordinate affected work forces and ensure continuity of protection.
4. Each authorized employee shall affix a personal lockout or tag-out device to the group lockout device, lockbox, or comparable mechanism when individual begins work, and shall remove those devices when said individual stops working on the machine or equipment.

L. Personnel Changes. Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tag-out protection, including provision for the orderly transfer of lockout or tag-out device protection between off-going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

CHAPTER 10 HEARING CONSERVATION (29 CFR 1910.95)

Under the current OSHA Standard for Occupational Noise Exposure, all workers exposed to 85 dBA Time Weighted-Average (TWA) are to be included in a hearing conservation program. It is important to note for work shifts in excess of 8 hours, the 85 dBA TWA is reduced. For example, exposures in excess of 83.4 dBA for a 10-hour work shift and exposures in excess of 82.1 dBA for a 12-hour work shift necessitate inclusion in a hearing conservation program.

An effective hearing conservation program is defined to include:

A. An assessment of noise exposure.
B. Annual audiometric tests of exposed workers.
C. Maintenance of noise and hearing data records.
D. Noise abatement and/or administrative controls.
E. Availability of hearing protectors.
F. Employee training and education.
G. Monitoring shall be repeated whenever a change in production, process, equipment or control increases noise exposure to the extent that:

1. Additional employees may be exposed at or above the action level; or
2. The attenuation provided by the hearing protectors being used may be rendered inadequate." A complete sound survey is recommended at least every two (2) years.

H. If the noise level is 85 dBA TWA, it is required for employers to provide:

1. Annual hearing tests.
2. Annual hearing conservation training.
3. Hearing protection.
4. The OSHA Noise Standard (29 CFR 1910.95) posted.
5. Notification of the results of the sound survey.

I. If the Noise level exceeds 90 dBA, the OSHA Noise Standard requires engineering and administrative control measures be investigated, evaluated and where feasible, utilized to reduce employee exposures. It is important any measure investigated, utilized, or evaluated to reduce the noise levels be documented. Engineering measures to reduce noise include:

1. Contact the manufacturer for noise abatement suggestions.
2. The purchase of quieter equipment or routine maintenance to reduce noise levels.
3. Reduction of noise level at the source.
4. Substitution of materials (i.e., plastic for metal).
5. Dampening or reducing surface vibration.
6. Increasing the distance between the employee and the noise source.
7. Enclosures or sound insulation material.
8. Relocation of job tasks which may be completed out of high noise areas.
9. Administrative methods to reduce noise may be used to minimize employee exposure such as worker rotation from high noise levels to quiet areas.

J. Managing the Hearing Conservation Program. All employees who are exposed to a noise level of 85 dBA or above will be in the hearing conservation program and have their hearing checked annually by a licensed health care physician. All results of the hearing tests are retained by the Risk Management Specialist. Employees will be scheduled for testing one (1) year from the date of the baseline testing and annually thereafter. The Risk Management Specialist will provide a file for the audiograms which is separate from other medical or personnel files and will be kept confidential.

It is the responsibility of Alexander County to ensure contractors are providing hearing tests to employees and the tests meet OSHA requirements. It will be the responsibility of Human Resources/Risk Management to obtain and file the following documentation annually from the contractor providing the hearing tests including current audiometer calibration check records, last audiometer check, both background noise level records, and current audiometer technician certification. If a mobile van used for testing cannot provide these records, then another testing center will be used.

K. Hearing Conservation Training. Hearing conservation training is required annually for all employees with noise exposures of 85 dBA TWA or greater. The goal of the training is to orient employees to the purpose of hearing protection. The following topics will be included in the employee training of the hearing conservation program:

1. The effects of loud noise. The effects can take many years to occur and the employee may not realize the gradual hearing loss. The loss occurs without any pain and cannot be corrected by any known medical or surgical treatment. A good rule of thumb to remember is if a person has to raise their voice at a distance of three feet, they are in an area with a possible hazardous noise level. Repeated unprotected noise exposure will cause a permanent hearing loss.

The hearing conservation program was established to ensure if a person ever has a standard threshold shift, the noise exposure can be lessened by using engineering or administrative controls or more effective hearing protection. Thus, the problem can be controlled.

2. Monitoring. Periodic audiometric testing provides an "early warning" of hearing disability. Factors such as noisy hobbies, ear infections, diseases of the ear, as well as general illness may also cause hearing loss. The hearing of all potentially exposed employees will be notified of any changes in their hearing. An employee cannot "fail" the test and will not lose their job due to the results of the test.

3. Purpose of hearing protection. The proper use of hearing protection will prevent many types of hearing loss. An employee must wear the required hearing protection properly and regularly to reap the benefits of the protection. Anyone issues with the fit of hearing protectors should contact their Department Head or Risk Management.

L. How to Properly Wear Required Protectors. It is an OSHA requirement for the employer ensure the proper initial fitting and provide training in the use and care of all hearing protectors. Employee hearing protection training is required annually during Hearing Conservation Training and each time an employee shows a standard threshold shift change in hearing.

To prevent hearing loss, hearing protection must be worn correctly and taken care of. Keep the ear plugs clean by washing them in warm soapy water and make sure they are completely dry before use. Inspect the devices regularly and if they become damaged, hard, or worn out, they will be replaced.

Due to the fact that everyone has different size ear canals, each individual will be fitted for accuracy. Each employee will be instructed on how to put their personal hearing protectors in and also be given the chance to practice inserting the hearing protectors into the ear canal. Two different types of hearing protectors will be provided to employees. If there is a problem with the fit comfort of your hearing protectors, see department head or Risk Management and you will be given a different type of protection.

1. Life span of hearing protection.
    a. Sponge plugs: 1 or 2 days
    b. Custom plugs: 18-24 months
    c. Insert plugs: 4-6 months

The life of the hearing protector is dependent upon the care it is given. A sponge type hearing protector is disposable. But, as long as it is clean, it may be used until it no longer expands. How long the hearing protection lasts is unique to each employee.

2. Steps to Inserting Earplugs. Put your left arm over your head and with your left hand pull up on your right ear. With your right hand insert the ear plug. Switch hands and insert the other plug in the same manner. Remember, both plugs must be worn for complete protection.

M. Recordkeeping. Records are an important part of any effective hearing conservation program. The information contained in the records reflects the quality and effectiveness of the program. A number of documents are required to be maintained under the OSHA Noise Standard once the "Action Level" is initiated. Some of these records must be retained for specified periods.

It is also required for these records be provided, upon request, to employees, former employees, representatives designated by the individual employee, and the NC Department of Labor.

1. The following documentation is required by OSHA:
    a. Sound Survey – retain at least two (2) years.
    b. Employee notification on the results of the sound survey.
    c. Posted OSHA Noise Standard.
    d. Hearing Testing – retain for at least the duration of employment.
        1. Baseline
        2. Annual
    e. Audiogram Evaluation Requirements.
        1. Standard Threshold Shift Requirements
        2. Physician review
    f. Hearing Protection.
    g. Hearing Conservation Training.
    h. Audiometer Records.
        1. Acoustic calibration check
        2. Exhaustive calibration check
        3. Biological calibration check
        4. Self-listening check
    i. Recording hearing loss on the OSHA 300 log.

N. Employee Notification on the Results of the Sound Survey. Employees must be notified of the results of the sound survey. Whether written or verbal notification is used, documentation must be maintained. It is recommended the results of the survey be posted in a central location. Records are to be kept for two years.

O. Posted OSHA Noise Standard. It is an OSHA requirement the OSHA noise standard be permanently posted in a central location.

P. Hearing Testing. The two (2) types of hearing tests are annual hearing tests and baseline hearing tests. Annual hearing testing is required for employees with 85 dBA TWA or higher noise exposures. Testing can be done anytime during the day. Baseline hearing testing is done when an employee is initially hired. The baseline is extremely important because it is the reference against which future audiograms are compared to determine the extent to which an employee's hearing is deteriorating. OSHA says a baseline test must be completed within six (6)months. However, the employee must wear protection for any period exceeding six months until the baseline is attained. (North Carolina Worker's Compensation Law has a 90-working day "grace period".) If the County gives the baseline before the grace period is up, then the County may be liable only for subsequent hearing loss. It is required the baseline audiogram be preceded by at least 14 hours without exposure to workplace noise. Time that hearing protection is worn may be included as part of the 14 hours without exposure to noise. The employer shall also notify the employee that they need to avoid non-occupational noise exposure during the 14 hours prior the audiometric test. Documentation of this notification will be maintained with the Risk Management Specialist.

1. A retest audiogram can be conducted to verify or confirm a hearing threshold result. Times when a retest may be needed:

a. If an employee suffered a standard threshold shift, the employer may obtain a retest within 30 days and use the results of the retest as the annual audiogram.

b. The audiologist or physician can request a retest to confirm test results.

c. When problems are suspected by the test administrator.

CHAPTER 11 HOT WORKS (29 CFR 1910)

SECTION 1. GENERAL

It is the policy of Alexander County to establish minimum requirements for practice and procedure to protect employees and property from hazards created by Hot Works (welding, brazing, cutting and grinding) operations. An employee must wear proper PPE, be properly trained, and exercise the utmost caution when involved in welding, brazing, cutting, or grinding operations.

SECTION 2. APPLICATION

This chapter applies to Maintenance, Solid Waste, and County Garage staff. No other departments are currently authorized to perform any Hot Works operations.

SECTION 3. RESPONSIBILITIES

A. Management. Department Heads or designees are responsible for ensuring the training, attendance, and implementation of the Hot Works program, and must assure only trained individuals are involved in the Hot Works processes of welding, brazing, cutting, or grinding.

B. Employees. Employees must be familiar with and understand the guidelines set forth in OSHA 1910.252 through 1910.255, be properly trained and competent in the proper care, use and inspection of the equipment, and maintain a safe working environment.

C. Safety Committee. Safety Committee and the Risk Management Specialist are responsible for assisting departments in developing appropriate equipment policies, selecting appropriate PPE, providing technical guidance, and assisting with employee training.

SECTION 4. TRAINING

An employee who participates in a welding, brazing, cutting, or grinding operation, including fire watch, will be trained to recognize hazards and in procedures to follow to minimize these hazards. A competent person shall train employees in the following areas:

A. Proper equipment inspection.
B. Proper PPE necessary for particular equipment and operations.
C. Recognizing hazards.
D. Correct operation of equipment and fire extinguishers.
E. Procedures to request repair of equipment.
F. OSHA standards 1910.252 through 1910.255.

A training record shall be maintained for each employee. The record shall contain the name of employee, date of training, and signature of person conducting training session. Retraining shall be conducted on an as needed basis.

SECTION 5. OPERATION GUIDELINES

Each employee shall do the following prior to beginning of any hot works operation:

A. Review operation manual for each piece of equipment.

B. Perform pre-operation inspection of equipment and area.

C. Demonstrate knowledge of proper equipment use, care, and inspection, as well as proper selection and use of PPE.

D. Demonstrate competence and ability to request proper repair of defective equipment. Repair of equipment shall be made only by qualified personnel.

E. Any damaged or defective equipment shall immediately be removed from service and reported to the Department Head.

F. When a hot works operation is in progress and an individual enters within 35 feet of the work area, the operation shall immediately cease and shall not continue until work area is clear.

G. Assess area for unsafe situations and fire hazards.

H. An appropriate and operational fire extinguisher shall be in reach of fire watch personnel during the entire fire watch period.

I. Fire watch shall continue for at least 30 minutes after the completion of the hot works operation.

CHAPTER 12 HOUSEKEEPING

Housekeeping is an important element of every health and safety program. Facilities with poor housekeeping generally have poor safety results, while facilities with superior housekeeping typically have very few injuries.

Many painful and sometimes disabling injuries are caused when employees are struck by falling objects or by striking against or tripping over objects. Many injuries and property damage losses stem from fires caused by poor housekeeping practices and improper storage of flammable materials. The best protection against these hazards is good housekeeping.

When materials are stored properly with adequate space to move through or within the storage area, accidents can be avoided. With some pre-planning, tripping hazards can be avoided and many other sprains, fractures, and bruises resulting from falls can be prevented.

Aside from the accident prevention benefits, good housekeeping means efficient performance. When materials, tools, and equipment all have a place for orderly storage, and are returned to the proper place after use, they are easier to find and easier to inspect for damage and wear.

The following housekeeping safety procedures apply:

1. Keep work areas and storage facilities clean, neat, and orderly.

2. Keep all aisles, stairways, passageways, exits, and access ways to buildings free from obstructions at all times. Remove all grease and water spills from traffic areas immediately.
3. It is everyone's responsibility to pick up and clean up.
4. Do not place supplies on top of lockers, hampers, boxes, or other moveable containers at a height not visible from the floor.
5. When piling materials for storage, make sure the base is firm and level. Cross tie each layer. Keep piles level and do not stack piles too high. Keep aisles clear and maintain adequate space to work in them.
6. When storing materials suspended from racks or hooks, secure them from falling and route walkways a safe distance from the surface beneath.
7. When storing materials overhead on balconies or mezzanines, provide adequate toe boards to keep objects from rolling over the edge.
8. Do not accumulate materials and supplies that are no longer needed.
9. Maintain tools, equipment, machinery, and work areas in a clean and safe manner. Defects and unsafe conditions must be reported to the Safety Coordinator.
10. Return tools and equipment to the proper place when not in use.
11. Lay out extension cords, air hoses, water hoses, ladders, pipes, tools, etc., in such a way as to minimize tripping hazards or obstructions to traffic.
12. Clean up spills immediately. In the event the removal cannot be done immediately, the area must be appropriately guarded, signed, or roped off.
13. Nail points, ends of loop or tie wires, etc., must not be left exposed when packing and unpacking boxes, crates, barrels, etc. Nails are to be removed as soon as lumber is disassembled.
14. Store sharp or pointed articles to keep co-workers from coming in contact with the sharp edges or points.
15. Dispose of all packing materials properly to reduce the chance of fire.
16. Empty wastebaskets daily into approved containers.
17. Put oily and greasy rags in a metal container; dispose of properly and frequently.
18. Maintain adequate lighting in obscure areas for the protection of both employees and the public. Keep landscaping well-manicured to minimize hiding places.
19. Do not handle food with residue from any lead-based product, such as leaded gasoline. Consumption of food and beverages is prohibited in areas where hazardous substances are stored or used.
20. Employees whose hands are cut or scratched are not to handle any lead-based products.
21. All switches or drives on machinery must be shut down and locked out before cleaning, greasing, oiling, making adjustments, or repairs.
22. Circuit breakers and fuse boxes should be kept closed at all times and must maintain a minimum clearance of 36 inches.
23. Flammables (kerosene, gasoline) and combustible materials (coats, rags, cleaning supplies) should not be stored in mechanical rooms or around electrical boxes.
24. Extension cords should not be run across aisles, through oil, or water. Inspect cords for kinks, worn insulation, and exposed strands of wire before use.
25. When fuses blow continually it is an indication of an overload or short. Report this condition to a Safety Coordinator immediately.
26. Keep electrical equipment properly maintained and free of grease and dirt.
27. To prevent static sparks, keep drive belts dressed. Also check belts for proper tension to prevent overloading motors.

28. Maintain fire inspections and other fire prevention measures.
29. Observe all safety warning signs, including locks and tags.

CHAPTER 13 MOBILE ELECTRONIC DEVICES

SECTION 1. PURPOSE

This policy is written to help ensure the safety of employees and the public when employees are driving and using mobile electronic devices.

SECTION 2. GUIDELINES

A. Become acquainted with the device features and use these features to avoid a distraction while driving.

B. Always use hands-free devices, such as ear/mic accessory, speaker phone, or phone cradle. Accessories will be provided for county owned devices only. It is the responsibility of the employee to provide accessories for personal cell phones.

C. Position the devices within easy reach. A phone should be installed as near as possible to the driver's line of vision so eyes are diverted from the road for the least amount of time.

D. If possible, place phone calls before moving or before pulling into traffic or ask a passenger to dial numbers for you.

E. Assess the traffic situation before placing or receiving calls, being fully aware of road and vehicle distractions.

CHAPTER 14 MOTOR VEHICLES

Conducting County business requires employees to operate County-owned vehicles and/or use personally owned vehicles for County business. From a safety standpoint, motor vehicle use creates some of the greatest risks for serious injury and property damage. Accidents result in injuries to employees, injuries to the public, and extensive property damage.

There are many considerations in controlling the risks associated with the operation of motor vehicles. While public entities have many specialized fleet exposures, the same basic principles are fundamental to the safety of any motor vehicle operations:

- Senior management commitment and employee involvement.
- Vehicle selection, maintenance, and inspection.
- Driver selection procedures.
- Driver training and communication.
- Safe driving habits and safe vehicle operation.

This chapter is designed to give guidance in developing controls related to these fundamental requirements and address specialized operations, such as law enforcement and emergency vehicle operations.

SECTION 1. MAINTENANCE

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

SECTION 2. DRIVER SELECTION

A. County vehicles are to be operated only by employees authorized by the Department Head to do so. County vehicles are not to be operated by persons who are not County employees with exception of first responders.

B. Employees must be properly licensed to operate a County vehicle. Operating a County vehicle with an expired or revoked driver's license is grounds for disciplinary action up to and including termination.

C. The Risk Management Specialist is to review the driver's license of every authorized employee. Any identified problems must be forwarded to the Human Resources Director.

D. The Human Resources Director, under the direction of the County Manager, is to be advised of any record showing the following and a decision will be made as to whether or not to allow the employee to continue to operate a County vehicle or personal vehicle for County business:

1. Suspension, revocation, or expiration of license.
2. Driving while intoxicated or under the influence, 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 law enforcement official.
3. Any other traffic violations including but not limited to expired inspection sticker, expired license plate, warning tickets, parking tickets, improper equipment, etc.
4. The reporting of charges/convictions as outlined in the Criminal Background Check Policy and Procedures must be followed in conjunction with this motor vehicle policy.
5. The departments exempted from this subsection include the Register of Deeds and Sheriff's Office employees and shall report incident(s) to their Department Head.

E. Careful driver selection is the key to overall fleet safety. No applicant or employee in a safety sensitive position may be hired or authorized to operate a County vehicle whose driving record shows the following during the preceding 24 months. This list is not all inclusive:

1. Two or more moving violation convictions.
2. Two or more chargeable accidents.
3. A combination of two or more moving violations and chargeable accidents.
4. Driving while intoxicated or under the influence, 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 law enforcement official.

SECTION 3. VEHICLE USE

A. Careful driving habits will reduce the chances of an accident more than any other factor. Drivers are to abide by all traffic regulations, laws, and ordinances while driving for the County.

B. Seat belts shall be worn when driving or riding in any County vehicle or in a personal vehicle on County business. The full restraining system provided for the seating positions must be worn properly. Placing the shoulder belt behind the back or under the arm is not allowed. Exceptions to the seat belt rule:

1. Drivers of non-commercial motor vehicles with a professionally certified medical condition (medical certification required).
2. EMS employees shall be exempt during patient medical care. As soon as the patient is stabilized, all parties must be properly secured in seat belts.

C. Department Heads who are responsible for County vehicle(s) are also responsible for maintaining the following information in a storage compartment of each vehicle:

1. Accident report forms and reporting procedures.
2. Mileage travel log.
3. Insurance policy card and vehicle registration information.
4. Vehicle maintenance checklist forms.

D. Drivers will not operate a motor vehicle after having consumed alcohol, illegal drugs, or prescription drugs that may impair their driving ability. Alcoholic beverages are not permitted in County vehicles at any time; however, law enforcement personnel may transport lawfully confiscated alcoholic beverages.

E. County vehicles shall be used for official County business only. Employees authorized by the County Manager shall have the ability to use County-owned vehicles to travel to and from work. The Sheriff shall have the authority to authorize vehicles to be used to travel to and from work for Sheriff's Office employees.

G. The use of tobacco, in any form, is prohibited in County-owned vehicles.

SECTION 4. GENERAL SAFETY RULES

A. The following safety procedures apply to the operation of all County vehicles:

1. Employees are required to complete a weekly safety check on any assigned vehicle. Vehicle safety checks include:

- windshield wipers and washer fluid
- directional signals
- power steering fluid level
- anti-freeze/coolant level
- brake operation and brake fluid
- lights
- check tire pressure and tread
- horn and mirrors
- motor oil level
- interior and exterior appearance
- transmission fluid and hydraulics (where applicable)
- current state inspection
- 5,000-mile maintenance

2. Test brakes by putting the vehicle in gear and applying brakes to bring the vehicle to a stop.

3. Adjust the seat, inside and outside mirrors, and steering wheel tilt for safe driving before putting the vehicle into gear.

4. Employee assigned to County vehicles shall take proper care of the interior and exterior appearance and servicing of County-owned vehicles at the scheduled times and/or every 5,000 miles.

5. Department Heads are responsible for upholding maintenance requirements.

6. Any item not passing inspection shall be brought to the attention of the Department Head immediately, a garage work order created, the vehicle repaired, and the vehicle returned to service as soon as possible.

7. No vehicle should be operated if any unsafe conditions are found.

8. Checklists should be submitted to Public Works Department for each vehicle on the 5th day of each month for the prior month.

B. Emergency vehicles. An employee operating an emergency vehicle is not exempt from civil or criminal liability for the consequences of 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 caution.

C. Parking vehicles. Except when working conditions require otherwise, parked vehicles must have the motor stopped, key removed, emergency brakes set, and be left in gear or in park depending on the type of transmission.

1. If parked on a downgrade, turn front wheels towards the curb. If parked on an upgrade, turn front wheels away from the curb.

2. Vehicles are not to be parked on the wrong side of the street facing traffic except in cases of emergency.

3. When trucks or vehicles must be stopped on streets or highways, adequate warning signals must be used.

4. Use a flagman when traffic warrants.

5. Do not use turn signals as a parking warning.

6. Before pulling away from the curb, look to see there are no vehicles approaching from either direction and signal your intention.

7. When backing a vehicle, be sure the way is clear. Get out of the vehicle when necessary and inspect the area you will be backing into. Back up slowly. Sound horn while backing if necessary. If there is another employee in the vehicle, he or she should get out and direct the backing.

8. Emergency personnel shall operate County vehicles with due regard to the public.

9. Never leave the vehicle with the engine running. It is illegal, as well as an unsafe practice. Always remove the keys from the ignition.

10. Drivers must be particularly alert while driving near children.

11. Stay within posted speed limits. Slow down when conditions warrant.

12. Do not assume the right-of-way. Use defensive driving and yield even if you legally have the right of way.

13. Keep a safe distance behind other vehicles and avoid tailgating. Do not allow others to tailgate. Slow down, pull over to the side, and let the tailgater pass.

14. Signal intentions at least 100 feet in advance, including change in lanes and turns. Avoid sudden braking.

15. Turn on low beam headlights during dark periods of the day, such as rainstorms or fog. Turn headlights on at sunset until after sunrise. Parking lights designate a vehicle is parked – do not drive utilizing only parking lights.

16. Filling Tanks:
    a. Shut off the engine.
    b. Do not smoke near gasoline pumps.
    c. Keep the nozzle against the edge of the filler pipe.
    d. Do not fill the tank too fast or too full.

SECTION 5. ACCIDENT REPORTING

In the event of an accident involving County-owned vehicles or a personal vehicle being used for County business, the following procedures apply:

A. Drivers are to report any incident to their supervisor immediately. Any incident involving the use of a car or other vehicle while working, regardless of injury, damage, or fault must be reported immediately. The Supervisor is to report the accident to the Risk Management Specialist as soon as possible but within 24 hours.

B. Employees involved in a motor vehicle accident which causes injury or discernable damage must immediately be drug and alcohol tested.

C. The reporting of injury procedures as outlined in Article IX-Worker's Compensation of the Alexander County Personnel Policy must be followed. Failure to do so may result in disciplinary action up to and including termination.

D. Render first aid, if qualified to do so, and arrange for medical help if necessary.

E. Notify law enforcement officials immediately. The vehicle should not be moved until authorized by law enforcement. If the accident does not result in a personal injury, operable vehicles may be moved to the shoulder of the street or highway pending investigation.

F. No passenger should leave the scene of an accident unless seeking temporary assistance or remaining at the scene would place the passenger or others at significant risk of an injury.

SECTION 6. TRAINING GUIDELINES

New hires in a safety sensitive position or those hired who are required to drive as an essential function of their job will be required to attend a County approved defensive driving course within their first year of employment. Certifications within a two-year period prior to beginning work with Alexander County may be acceptable with the appropriate documentation and approved by the Risk Management Specialist.

Recertification driver training classes will be held every year for law enforcement and EMS personnel. Recertification for all other positions will occur every five years.

County personnel involved in an on-the-job accident will be required to attend the next available driver training class.

SECTION 7. RECORDKEEPING

Log books will be maintained in all County vehicles. Information such as driver, date, mileage, and destination will be recorded daily for trips taken in all County vehicles. Vehicles are for County business and are not to be used for personal errands.

Submit log books to the Maintenance Department by the 5th day of each month for the prior month.

SECTION 8. DISCIPLINE AND PENALTIES

A. Violations, citations, fines, and other actions taken by any law enforcement officer against any employee while driving a County vehicle or on County business shall be the responsibility of the employee and may be cause for disciplinary action, up to and including termination.

B. Failure to comply with guidelines set forth in this chapter may be subject to disciplinary action up to and including termination.

C. Should disciplinary action arise out of and in the course of employment, the disciplinary action procedures as outlined in the Alexander County Personnel Policy Article X – Discipline and Dismissal for Just Cause shall be followed. The Register of Deeds Office and Sheriff's Office employees are exempt from this subsection.

CHAPTER 15 OFFICE SAFETY

SECTION 1. BEST PRACTICES

Office work can be more hazardous than is commonly thought since many accidents occur during ordinary office routines. Listed below are several best practices to help make office areas safe.

A. Every employee should have clean and orderly desk and work area. Pick up items such as pencils or paper clips and wipe up any spilled liquids.

B. Slips, trips, and falls are some of the most common causes of injuries to office workers. Keep an eye open for loose or rough floor covering, tiles, or carpeting which can create a tripping hazard. Clean up spills immediately or put-up wet floor signs until maintenance can respond.

C. Be extra cautious when approaching a door that can be pushed toward you. Take it easy when pushing one open. Also, slow down when coming to a blind corner.

D. Haste when walking between desks can result in bruises and falls. Watch out for electrical cords and keep them out of the walkways. If a cord needs to cross through walkways, utilize a cord cover. Never cross electrical cords through doorways as it creates a pinch point which can alter the cord's integrity.

E. All files, desk, and table drawers should be kept closed when not in use. If you open them, close them. Never open more than one file drawer at a time.

F. Overloading the top drawers of unsecured file cabinets can cause bodily injuries and damage to the file cabinet if they tip over. Cabinets should be loaded evenly and should be secured to adjacent cabinets or to walls so they cannot fall over. File cabinets should have an interlocking device that allows only one drawer to be opened at a time, and drawers should have stops so they cannot inadvertently be pulled all the way out of the cabinet.

G. Furniture such as tables, desks, and chairs must be maintained in good condition and free from sharp corners, projecting edges, wobbly legs, etc.

H. Maintain tilted chairs in good condition to prevent hazards.

I. Never use chairs, desks, or other office furniture as a makeshift ladder. Use a stepladder or step stool and don't over-reach.

J. Keep the blades of a paper cutter closed when not in use. All paper cutters should be guarded.

K. Pencils are safest when carried point down in shirt pockets.

L. Scissors, paper cutters, glass, and razor blades can cause painful injuries. Report and treat such injuries at once to protect from infection.

M. To avoid injury with paper, use a sponge or other wetting device for envelopes and similar items. Use rubber finger guards when working with stacks of paper.

N. Keep paper clips, thumb tacks, and pins in a place where the risk of puncture is lessened.

O. Be sure all electric office equipment is grounded and the cord is in good condition. If a machine gives you an electric shock or starts smoking, unplug it, and report it.

P. For computers, use surge protectors to protect equipment from electrical power surges. Outlet strips may also allow more electrical equipment to be plugged in safely at one outlet/location, but be sure to review the device rating and do not overload the circuit.

Q. Store heavy office supplies at a height between your knees and shoulders. Use proper lifting techniques for moving supplies.

SECTION 2. ERGONOMICS

With the increased use of computers in every line of work, it is important to review computer workstation setup. If the majority of time is spent in front of a computer, then be aware of basic ergonomic principles which will improve comfort and minimize stress caused from repetitive motion and poor posture.

A. Computer Workstations.

1. Adjust the chair height and keyboard to achieve a neutral wrist position, with the forearms roughly parallel to the floor, with a keyboard or other work within a range of two inches above or below the seated elbow height. If a non-adjustable work surface must be used, adjust the chair height to achieve a neutral wrist position and use a footrest, if needed, to make the workstation more comfortable.
2. Select a sturdy chair with adjustable arms, and a back that is firm and adjusts vertically and horizontally. By adjusting the backrest to support the lower back, it helps support and improve posture, which will ultimately improve comfort. Use a chair that swivels to avoid unnecessary twisting and reaching. The base should have five legs for greater stability.
3. Place the computer monitor so the screen is 18 to 30 inches away. The top of the screen should be at seated eye level or below to help prevent head and neck strain.
4. Organize the desk or worktable to accommodate the needed materials and equipment. Place the regularly needed things such as a telephone or calculator within easy reach.

CHAPTER 16 PERSONAL PROTECTIVE EQUIPMENT (29 CFR 1910.132-134, 140)

SECTION 1. PROTECTIVE EQUIPMENT

When it is impractical or impossible to place a guard over the source of the hazard, then it becomes necessary to place the guard on the worker. This is done by wearing approved personal protective equipment (PPE) such as hard hats, safety belts, safety goggles, face shields, gloves, aprons, toe guards, respirators, etc. Department Heads must ensure all their employees are properly protected.

Dress codes may be established within a particular department, or work area, and each employee is expected to know and follow these codes where applicable. Every possible effort will be made by management to select protective clothing and equipment that is acceptable for comfort, appearance, utility, and still provide the desired protection.

SECTION 2. PPE HAZARD ASSESSMENT PROCEDURES

Each County facility shall be assessed of hazards which may require the use of personal protective equipment. Where hazards are identified that requires use of PPE management shall:

A. Select appropriate types of PPE to protect the employees from identified hazards.
B. Communicate selection decisions to each affected employee.
C. Select PPE that properly fits each affected employee.
D. Require each affected employee to wear the selected PPE.

SECTION 3. PPE TRAINING

Each employee who is required to use PPE must be trained in the following aspects of PPE:

A. What type and when PPE is necessary.
C. How to properly don, doff, adjust, and wear the PPE.
D. PPE limitations.
E. Proper care, maintenance, life, and disposal.

Each employee must demonstrate an understanding of the items specified above and the ability to use the equipment properly, before being allowed to perform work requiring the use of PPE. Retraining is necessary whenever the required PPE changes, or when the employee demonstrates lack of knowledge concerning use of the equipment

SECTION 4. PPE DEPARTMENTAL ASSESSMENTS

A. Emergency Services (Emergency Management, EMS, and Fire Marshal).

1. Personal Protective Equipment is needed when:
    a. Working with, around, or a chance of contact with bodily fluids.
    b. In or near the "*hot zone"* of a motor vehicle accident or hazardous incident.
    b. During or near the area of confined space incidents.
    c. Air quality hazards around or near the incident.
    d. Around or with a patient with an airborne condition.
    e. Performing unit housekeeping or decontamination after patient contact.
    f. Performing fire suppression and investigation duties.

2. The type of Personal Protective Equipment (PPE) needed is:
    a. Gloves for all patient interactions, housekeeping, or decontaminating a unit.
    b. Face shields for bodily fluids to safeguard face, eyes, etc.
    c. N95 masks when in or near patient contact with airborne pathogens.
    d. Gowns for patient contact with the potential for bodily fluids to get on uniforms or other parts of exposed skin.

e. Turn out gear when working in or near the "*hot zone.*", including jacket, pants, helmets with proper shield, boots, and gloves. Reflective vests are required where subject to traffic.

f. Turn out gear during or near the area of a confined space, exposure to heat, falling objects, and hazardous atmospheres. This includes jackets, pants, helmets with proper shield, boots, gloves, hood, and self-contained breathing apparatus.

g. Self-contained breathing apparatus during or near the area of a confined space incident or where air quality is poor.

B. Health Department.

1. Personal Protective Equipment is needed when:
   a. Working with, around, or a chance of contact with bodily fluids.
   b. Around or with a patient with an airborne condition.
   c. Performing unit housekeeping or decontamination after patient contact.

2. The type of Personal Protective Equipment needed is:
   a. Gloves for all patient interactions, housekeeping or decontaminating a unit.
   b. Face shields for bodily fluids to safeguard face, eyes, etc.
   c. N95 masks when in or near patient contact with airborne pathogens.
   d. Gowns for patient contact with potential exposure to bodily fluids.
   e. Gloves for unit housekeeping or decontamination after patient contact.

C. Animal Services.

1. Personal Protective Equipment is needed when:
   a. There is exposure to potentially harmful fluids or hazardous chemicals.
   b. When handling and/or euthanizing animals.

2. The type of Personal Protective Equipment needed is:
   a. Gloves, masks, and eye protection are required when making contact with or the cleaning of chemical spills.
   b. Leather or heavy material gloves and/or catch stick when handling animals.
   c. Face shield, eye protection, gloves, and disposable coveralls when euthanizing animals.

D. Sheriff's Office and Detention.

1. Personal Protective Equipment is needed when:
   a. Working with, around, or a chance of contact with bodily fluids.
   b. When qualifying with firearms.

2. The type of Personal Protective Equipment needed is:
   a. Gloves, masks, and eye protection are required when making contact with or the cleaning of chemical spills.
   b. Eye and ear protection when qualifying with firearms.

c. Gloves for contact with open wounds or exposure to bodily fluids.
d. Face shields for patients with potential for bodily fluids to get in face, eyes.

E. Public Buildings/Maintenance.

1. Personal Protective Equipment is needed when:
   a. Working on or near roadway.
   b. Using chemicals including the preparation and spraying of chemicals.
   c. Noise levels are 85 decibels or greater.
   d. Working on roofs or other high levels.
   e. Working with plumbing issues.

2. The type of Personal Protective Equipment needed is:
   a. Eye protection while mowing, weed eating, clearing of brush, and the general maintenance of equipment.
   b. Gloves, masks, and eye protection with chemicals including the preparation and spraying of chemicals.
   c. Hearing protection includes ear plugs or ear muffs.
   d. Chainsaw chaps must be worn while using a chainsaw or any other equipment used to cut wood, shrubs, etc.
   e. Proper footwear and long pants must be worn when using mowers, string trimmers, leaf blowers, and similar equipment.
   f. Fall protection harness, ladder, or other approved fall protection device/procedure should be used when at risk for falling.
   g. Highly reflective clothing or vest when working near or on roadway.

F. Landfill and Convenience Sites.

1. Personal Protective Equipment is needed when:
   a. Handling or near materials contaminated with bodily fluids.
   b. Handling materials which may cut, scratch, or penetrate the skin.
   c. Exposures to noise levels of 85 decibels or higher.
   d. Using welder or torch.

2. The type of Personal Protective Equipment needed is:
   a. Gloves for handling material contaminated with fluids.
   b. Leather or heavy material gloves for prevention of lacerations or punctures.
   c. Protective glasses for a chance of foreign objects into the eyes.
   d. Hearing protection for noise level exposures.
   e. Welding mask and glasses when operating the welder or torch.

G. Garage.

1. Personal Protective Equipment is needed when:
   a. There is a chance to get a foreign object in an eye.
   b. Handling fluids which may make contact with the skin or eyes.

2. The type of Personal Protective Equipment needed is:
   a. Gloves and eye protection for handling fluids.

   b. Protective glasses for a chance of foreign objects into the eyes.
   c. Eye and face protection for welding and torch cutting operations.

H. Soil & Water Conservation/Cooperative Extension.

1. Personal Protective Equipment is needed when:
   a. There is exposure to potentially harmful fluids.

2. The type of Personal Protective Equipment needed is:
   a. Gloves for contact or prolonged contact with an herbicide.
   b. Eye protection for potential contact with herbicide.

I. Building Inspections.

1. Personal Protective Equipment is needed when:
   a. Climbing on roofs and other high areas during inspections.
   b. Inspecting sites while contractors are performing their duties.

2. The type of Personal Protective Equipment needed is:
   a. Binoculars in an effort to avoid climbing.
   b. Harness, ladder, or another approved fall protection device when climbing.
   c. Eye protection and ear plugs or muffs when entering a work area.

J. All Departments Requiring PPE.

1. Limitations of the Personal Protective Equipment. If PPE is put on and used appropriately, the employee should have no limitations. The improper donning or wearing of PPE can cause dangerous problems if contact is made with fluids.

2. Proper care, maintenance, and disposal of the PPE. All disposable PPE must be taken off and disposed of properly. If contaminated, it should be placed in biohazard bag. The employee is to wash their hands with antibacterial soap as soon as possible.

All issued PPE needs to be kept clean, properly stored, and carried on the unit employee is working on. If any piece of issued PPE is contaminated, the employee should first bag the contaminated article, contact the supervisor, and fill out an incident report. The supervisor must then make arrangements to properly get PPE cleaned or replaced as soon as possible. The supervisor is also to follow the departmental structure and notify their supervisor.

K. Guideline for Evaluating Need for Personal Protective Equipment.

1. PPE Evaluation. Review of PPE should take place annually. The purpose of the evaluation is to identify sources of hazards.

2. Injury/Accident Data. Review previous accident, injury, and occupational illness data to identify any problem areas. Consideration should be given to the basic hazard categories of impact, saturation, compression, chemicals, heat, harmful dust, and light. During the evaluation, observe for these potential hazards:

a. Sources of motion in tools, machine elements, or particles.
b. Movement of personnel which could result in collision with objects.
c. Sources of contact with temperature extremes or flash burns.
d. Types of chemical exposures.
e. Sources of harmful dust.
f. Sources of light radiation. (Welding, cutting, furnaces, etc.)
g. Sources of falling objects or the potential for dropping objects.
h. Sources of sharp objects which might pierce the feet or cut the hands.
i. Sources of rolling or pinching objects which could crush the feet.
j. Layout of workplace and location of co-workers.
k. Electrical hazards.

3. Observe for exposures to the eyes and face including flying particles, molten metal, liquid chemicals, chemical gases or vapors, and light radiation.

4. Observe for exposures to the feet including the potential for falling, dropped or rolling objects, sharp objects which could be stepped on, and electrical hazards.

5. Observe for hazards to the hands including skin absorption of harmful substances, sharp objects, chemical contact exposures, and extreme temperatures.

6. Organize the data and information in the assessment of hazards and the selection of personal protective equipment.

L. Prescription Safety Glasses.

1. Requirements. Prescription safety glasses must be ANSI approved. Detachable side shields are acceptable, but they must also be ANSI approved and provide protection substantially equivalent to integrated side shields. While performing duties requiring safety glasses, the employee is required to have side shields appropriately attached at all times. Side shields may not be altered in color such as spray painting, tinting, etc.

2. Costs. The employee is responsible for the cost of the eye exam and the County will reimburse a maximum of $75.00 once per calendar year for ANSI approved glasses with detachable side shields. To be reimbursed, receipt must be submitted within 30 days of purchase to the Risk Management Specialist. The County will not be responsible for replacement of prescription safety glasses due to prescription changes, damaged, or lost glasses, etc. The prescription reimbursement plan will only be available to those departments who are required to regularly wear safety glasses for the majority of the workday.

4. The County will provide shields that go over the glasses for any employees who opt not to wear ANSI approved prescription safety glasses.

SECTION 5. RESPIRATORY PROTECTION

Some employees may be exposed to respiratory hazards, including biological agents, during routine work-related operations. When engineering controls are not capable of reducing exposure to acceptable levels or are not feasible, the use of personal respiratory protective equipment becomes necessary. The purpose of the Respiratory Protective Program is to ensure employees are protected from exposure to these respiratory hazards.

A. Scope and Application.

This chapter applies to all employees who may be required to wear respirators during normal work operations and while performing duties within the scope of their job description. Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations, and respiratory protection equipment will be the responsibility of the County.

B. Responsibilities.

1. EMS and Health Department. These departments are responsible for implementing the Respiratory Protection Program. Department Heads and the Risk Management Specialist shall be responsible for the following:

a. Identifying work areas, processes, or tasks which require workers to wear respirators and evaluating hazards.

b. Selection of respiratory protection.

c. Monitoring respirator use to ensure respirators are used in accordance with their certification.

d. Arranging or conducting training.

e. Ensuring proper storage and maintenance of equipment.

f. Administering the medical surveillance.

g. Maintaining records.

2. Employees. Each employee has the responsibility to wear their respirator when and where it is required and in the manner in which they were trained. Employees must also:

a. Care for and maintain their respirators as instructed and store them in a clean, sanitary location.

b. Inform the Department Head if the respirator no longer fits well and request a new one which fits properly.

c. Inform the Department Head of any respiratory hazards which are not adequately addressed in the performance of their work duties and of any other program concerns.

d. Inform Human Resources of any changes in their medical condition which may impact their ability to wear a respirator.

C. Program Elements.

1. Selection Procedures. EMS and Health Department, in conjunction with Risk Management, will select respirators for personnel. Only respirators, filters, cartridges, and

canisters certified by the National Institute for Occupational Safety and Health (NIOSH) will be chosen. The selection is based upon the physical and chemical properties of the air contaminant and the concentration level likely to be encountered by the employee. The Fire Marshal's Office will conduct a hazard evaluation for each operation where an airborne contaminant may be present in routine operations or during an emergency. The hazard evaluation includes:

a. A list of hazardous substances that employees may encounter.
b. Review work processes to determine where potential exposures may occur.
c. Exposure monitoring to quantify potential hazardous exposures.

2. Medical Surveillance. Employees who are either required to wear respirators, or who choose to voluntarily wear respirator protection, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician or qualified licensed health care provider determines they are medically able to do so. An employee who refuses the medical evaluation will not be allowed to work in an area or operation which requires respirator use.

A physician or other licensed health care professional will provide the medical screening by utilizing the questionnaire provided in accordance with Appendix A. Follow-up medical exams will be granted to employees as required by the standard, or if the employee experiences medical difficulties when wearing the respirator.

All examinations and questionnaires are to remain confidential between the employee and physician.

D. Fit Testing.

Before an employee uses a respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size respirator. This applies to air purifying and SCBA respirators. Employees volunteering to wear a respirator may ask to be fit tested. Appendix B outlines the fit-testing procedures. The Saccharin fit test will be used first and if the employee fails to detect the sensitivity solution, the Bitrex fit test procedures will serve as a second option.

E. General Use Procedures.

Employees will use their respirators under conditions specified herein and in accordance with the training received on the use of each model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer. Employees should also:

1. Conduct user seal checks by conducting a positive/negative pressure check.
2. Clean the respirators and change the filter/cartridges/canisters when required.
3. Refrain from wearing tight-fitting respirators if they have a skin or medical condition which prevents a good seal.
4. Inform the Department Head if the respirator is no longer performing properly.
5. Operate using the buddy system for supplied air respirators. Buddies shall assist workers who experience a malfunction.

F. Cleaning.

Respirators are to be regularly cleaned and disinfected after each use. The following procedure is to be used when cleaning and disinfecting respirators:

1. Disassemble respirator and remove the filter.
2. Wash the facepiece and related parts in a mild detergent with warm water.
3. Rinse completely in clean, warm water.
4. Wipe the respirator with disinfectant wipes to kill germs.
5. Air-dry in a clean area.
6. Reassemble the respirator and replace any defective parts.
7. Place in a clean, dry plastic case or other airtight container.

The Department Head or designee will ensure an adequate supply of appropriate cleaning and disinfectant material is available. If supplies are low, employees should contact the same.

G. Maintenance.

Respirators are to be properly maintained at all times to ensure they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use; however, no components will be replaced or repairs made beyond those recommended by the manufacturer. Respirator will be inspected after each use utilizing the form in Appendix C.

H. Storage.

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean, inspect, and then store their own respirators in a clean bag, labeled with their name. The assigned department will store the supply of respirators.

I. Change Schedules.

Employees wearing PAPRs with a high efficiency particulate cartridge for protection against a biological agent, shall change the cartridge when they first begin to experience difficulty breathing (resistance) while wearing the respirator or when they come into contact with a biological agent.

J. Employee Training.

No employee will be permitted to work with a respirator on until he or she has received training in respiratory protection. The training will be provided or coordinated with the Risk Management Specialist and will cover the following topics:

1. Explanation of the hazard and what happens if respiratory protection was not used.
2. Elements of the program and the employee's responsibility.
3. Selection of respiratory protection and who is authorized to modify the selection.
4. Medical surveillance program and the respiratory fitting form.
5. Function, capabilities, and limitations of the selected respiratory protection.

6. Explanation respiratory protection operation, including how to check the fit and properly wear the respirator.

7. Respirator maintenance, including cleaning, inspection, and storage.

8. Recognition and handling of emergency situations.

K. Program Evaluation.

The Risk Management Specialist will conduct periodic evaluations of the workplace and operating conditions to ensure program provisions are implemented. The evaluation will include regular consultations with employees who use respirators, sampling results, and review of records.

L. Documentation and Recordkeeping.

For each employee who is assigned a respirator, the following records will be maintained by the Risk Management Specialist:

1. Medical records, including copies of the respirator fitting form and results of physical examinations.

2. Training and fit testing records.

CHAPTER 17 WALKING-WORKING SURFACES AND LADDER SAFETY
(29 CFR 1910)

SECTION 1. GENERAL

This chapter establishes minimum requirements for practice and procedures to protect employees from fall hazards. Fall protection can be in the form of ladders, guardrails, personal fall arrest systems, or under specific conditions, warning line systems.

An employee must be protected from falling when working on a surface with an unprotected side or edge, working from bucket trucks, or other personnel lifts with articulating booms. In each of these cases, fall hazards must be evaluated to determine the preferable method to protect the employee.

SECTION 2. RESPONSIBILITIES

A. Department Heads or their designee have primary responsibility for ensuring attendance of training and implementation of the Fall Protection Program in their work area. The Department Head should ensure responsibility for the competent person by assigning them to a qualified individual within the work group. Department Heads must also ensure only trained individuals are assigned work which requires use of fall protection systems.

B. Employees are responsible for proper care, use, and inspection of their assigned fall protection equipment.

C. Risk Management is responsible for ensuring employees attend training.

D. The Safety Committee is responsible for assisting departments in developing appropriate fall protection plans, providing technical guidance, and assisting with employee training.

SECTION 3. TRAINING

Each employee who may be exposed to fall hazards will be trained to recognize the hazards and procedures to follow in order to minimize hazards.

A. The competent person must train employees in the following areas:
   1. Fall hazards.
   2. Correct procedures for erecting, maintaining, and disassembling.
   3. Inspecting the fall protection system.
   4. Use and operation of the fall protection system.
   5. Role of employees in fall protection plans.
   6. Rescue procedures to follow in case of a fall.
   7. Overview of the OSHA fall protection standards.

B. A training record will be maintained for each employee. The record will contain the employee's name, date of training, and the signature of the person who conducted the training.

C. Retraining should be done if there is a change in the fall protection system being used or if an employee's actions demonstrate the understanding or skills important to fall protection were not retained.

SECTION 4. FALL PROTECTION SERVICES

One of the following systems shall be in place whenever an employee is exposed to a fall greater than four (4) feet.

A. Guardrail systems. Guardrails are needed at the edge of work areas which are four (4) feet or more in height to protect employees from falling. This includes the edge of excavations greater than four feet in depth. Guardrail systems need to meet the following criteria:

1. Top rail is 42 inches, +/- three (3) inches above the walking/working level.
2. Mid rail is located midway between the top rail and the walking/working level. It is important to remember the working level is the level where the work is being done. Someone working a stepladder next to an edge may raise the working surface well above the walking surface.
3. Both top and mid rails should be constructed of materials at least one-quarter inch in thickness or diameter. If wire rope is used for top rails, it needs to be flagged with a high-visibility material at least every six (6) feet and can have no more than three (3) inches of deflection.
4. The top rail needs to withstand a force of 200 pounds when applied in any downward or outward direction.
5. The mid rail needs to withstand a force of 150 pounds applied in any downward or outward direction.
6. The system should be smooth to prevent punctures, lacerations, or snagging of clothing.

7. The ends of the top rail should not overhang the terminal posts, except when such overhang does not present a projection hazard.

8. When a hoisting area is needed, a chain, gate, or removable guardrail section must be placed across the access opening when hoisting operations are not taking place.

SECTION 5. PERSONAL FALL ARREST SYSTEM

Personnel requiring the use of personal fall protection equipment shall employ the "Buddy System" or have an observer to render assistance when and if required. There are three (3) main components to the personal fall arrest system. This includes the personal protective equipment the employee wears, the connecting devices, and the anchorage point. Prior to tying off to perform, the means of rescue in the event of a fall must be immediately available. The system needs to meet the following criteria for each component:

A. Personal Protective Equipment.

1. Full body harnesses are required. The use of body belts is prohibited.
2. The attachment point of the body harness is the center D-ring on the back.
3. Employees must always tie off at or above the D-ring of the harness except when using lanyards three (3) feet or less in length.
4. Harnesses or lanyards subjected to an impact load shall be destroyed.
5. Load testing shall not be performed on fall protection equipment.

B. Connecting Devices. The device can be a rope or web lanyard, rope grab, or retractable lifeline.

1. Only locking snap hooks may be used.
2. Horizontal lifelines will be designed by a qualified person and installed in accordance with the design requirements.
3. Lanyards and vertical lifelines need a minimum breaking strength of 5,000 pounds.
4 Lanyards may not be clipped back to itself (e.g. around an anchor point) unless specifically designed to do so.
5. If vertical lifelines are used, each employee will be attached to a separate lifeline.
6. Lifelines need to be protected against being cut or abraded.

C. Anchorage. Secure anchor points are the most critical component when employees must use fall arrest equipment. UF buildings may have existing structures (e.g., steel beams that may meet the criteria for a secure anchor point). Other work locations and assignments may require the installation of a temporary or permanent anchor. At a minimum, the following criteria must be considered for each type of anchor point:

1. Structure must be sound and capable of withstanding a 5,000 lb. static load/person attached.
2. Structure/anchor must be easily accessible to avoid fall hazards during hook up.
3. Direct tying off around sharp-edged structures can reduce breaking strength by 70% therefore; chafing pads or abrasion resistant straps must be used around sharp-edged structures to prevent cutting action against safety lanyards or lifelines.

4. Structures used as anchor points must be at the worker's shoulder level or higher to limit free fall to 6 feet or less and prevent contact with any lower level (exception – when self-retracting lifelines and or 3-foot lanyards are used.)

5. Choose structures for anchor points that will prevent swing fall hazards. Potentially dangerous "pendulum" like swing falls can result when a worker moves horizontally away from a fixed anchor point and falls. The arc of the swing produces as much energy as a vertical free fall and the hazard of swinging into an obstruction becomes a major factor. Raising the height of the anchor point can reduce the angle of the arc and the force of the swing. Horizontal lifelines can help maintain the attachment point overhead and limit the fall vertically. A qualified person must design a horizontal lifeline.

D. Permanent Anchor Requirements. In addition to all the criteria listed above, the following points must be considered:

1. Environmental factors and dissimilarity of materials can degrade exposed anchors.
2. Compatibility of permanent anchors with employee's fall arrest equipment.
3. Inclusion of permanent anchors into a preventive maintenance program with scheduled annual re-certification.
4. Visibly label permanent anchors.
5. Anchors must be immediately removed from service and re-certified if subjected to fall arrest forces.

E. Reusable Temporary Anchors. Reusable temporary roof anchors must be installed and used following the manufacturer's installation guidelines.

1. Roof anchors must be compatible with employee's fall arrest equipment.
2. Roof anchors must be removed from service at the completion of the job and inspected prior to reuse following the manufacturer's inspection guidelines.
3. Roof anchors must be immediately removed from service and disposed of if subjected to fall arrest forces.

F. Complete System.

1. If a fall occurs, the employee should not be able to free fall more than 6 feet nor contact a lower level. To ensure this, add the height of the worker, the lanyard length, and an elongation length of 3.5 feet. Using this formula, a six-foot (6') worker with a six-foot (6') lanyard would require a tie-off point at least 15.5 feet above the next lower level.
2. A personal fall arrest system subjected to an impact needs to be removed from service immediately.
3. Personal fall arrest systems need to be inspected prior to each use and damaged or deteriorated components must be removed from service.
4. Personal fall arrest systems should not be attached to guardrails or hoists.

G. Work from Aerial Lifts and Self-Powered Work Platforms. Body harnesses must be worn with a shock-absorbing lanyard (preferably not to exceed 3 feet in length) and must be worn when working from an elevated work platform (exception: scissor lifts and telescoping lifts that can move only vertically do not require the use of a harness and lanyard as long as the work platform is protected by a guardrail system). The point of attachment must be the lift's boom or work platform. Personnel cannot attach lanyards to adjacent poles, structures, or equipment while they

are working from the aerial lift. Personnel cannot move an aerial lift while the boom is in an elevated working position and the operator is inside of the lift platform.

H. Inspection. The employee will inspect the entire personal fall arrest system prior to every use. The competent person will inspect the entire system in use at the initial installation and weekly thereafter. The visual inspection of a personal fall arrest system periodically will follow the manufacturer's recommendations. An example of a complete inspection is in Appendix A.

I. Warning Line Systems and Controlled Access Zones. Warning line systems and work in controlled access zones must be developed in accordance with OSHA regulation 1926.502 and must be approved by ***the S***afety ***C***ommittee before employees are exposed to fall hazards.

J. Monitoring System. OSHA emphasizes that safety-monitoring systems are a last resort and may only be used when other systems are infeasible or present a greater hazard. Monitoring systems must be developed in accordance with OSHA 1926.502 and must be approved by EH&S or their designee before employees are exposed to fall hazards.

SECTION 6. LADDER SYSTEMS AND SAFETY

A. Requirements. The ladder must only be used for their designated purpose.

1. Employees must face the ladder and use one hand to grasp the ladder when climbing up or down.
2. Ladder rungs, steps, and cleats are parallel, level, and uniformly spaced when the ladder is being used. Spacing requirements are detailed in 29 CFR 1910.23(b).
3. Portable metal ladders are to be corrugated, dimpled, or otherwise treated to minimize the possibility of slipping.
4. Ladders should only be used on stable and level surfaces unless they are otherwise secured.

APPENDIX A DEFINITIONS

ACGIH. American Conference of Governmental Industrial Hygienists is an organization of professional personnel in governmental agencies or educational institutions engaged in occupational safety and health programs. ACGIH establishes recommended occupational exposure limits for chemical substances and physical agents.

Acid. A chemical that undergoes dissociation in water with the formation of hydrogen ions. Acids have a sour taste and may cause severe skin burns. Acids have pH values of 0 to 6.

Acute Effect. An adverse effect on a human or animal with severe symptoms developing rapidly and coming quickly to a crisis.

Acute Toxicity. Acute effects resulting from a single dose of, or exposure to, a substance.

Adenosis. A disease of a gland.

Adhesion. A union of two surfaces which are normally separate.

Aerial Lift. An elevated work platform on a vehicle.

Aerosol. An aerial suspension of fine particles sufficiently small in size to confer some degree of stability from sedimentation.

Affected Employee. An employee whose job requires him/her to service or maintain a machine under lockout or tag-out, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Air-line Respirator. A respirator connected to a compressed breathable air source by a hose of small inside diameter.

Air-Purifying Respirator. A respirator which uses chemicals to remove specific gases and vapors from the air; or uses a mechanical filter to remove particulate matter.

Alkali (bases). A chemical substance that forms soluble soaps with fatty acids. Alkalis have pH values from 8 to 14.

Allergic Reaction. An abnormal physiological response to chemical or physical stimuli.

Anesthetic. A chemical which causes a total or partial loss of sensation. Overexposure can cause impaired judgment, dizziness, drowsiness, headache, unconsciousness, and death.

ANSI. American National Standards Institute is a privately funded, voluntary membership organization that identifies industrial and public needs for national consensus standards and coordinates development of the same.

Appearance. A description of a substance at normal room temperature and normal atmospheric conditions. Appearance includes the color, size, and consistency of a material.

Asphyxiant. A vapor or gas that can cause unconsciousness or death by suffocation. Most are harmful to the body when they become so concentrated, they reduce oxygen in the air to dangerous levels. Asphyxiation is one of the principal hazards of working in confined and enclosed spaces.

Asymptomatic. Showing no symptoms.

Atmosphere-Supplying Respirator. A respirator providing breathable air from a source independent of the surrounding atmosphere. The two types include air-line and self-contained breathing apparatus.

Authorized Employee. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment.

Base. A substance which liberates hydroxide ions when dissolved in water, receives hydrogen ions from a strong acid to form a weaker acid, and neutralizes an acid. Bases react with acids to form salts and water. Bases have a pH greater than 7.

Biodegradable. Capable of being broken down into innocuous products by the action of living things.

Bloodborne Pathogens. Pathogenic microorganisms present in human blood and can cause disease in humans.

Boiling Point. The temperature at which liquid changes to a vapor state at a given pressure. The boiling point usually expressed in degrees Fahrenheit at sea level pressure.

Bonding. The interconnecting of two objects by means of a clamp and bare wire. The intent is to equalize the electrical potential between the objects to prevent a static discharge when transferring a flammable liquid from one container to another. The conductive path is provided by clamps that make contact with the charged object and a low resistance flexible cable which allows the charge to equalize. See Grounding.

Bulk Density. Mass of powdered or granulated solid material per unit of volume.

Capable of being locked out. A hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built-in.

Ceiling Limit (PEL or TLV). The maximum allowable human exposure limit for an airborne substance which is not to be exceeded.

Central Nervous System. The brain and spinal cord. These organs supervise and coordinate the activity of the entire nervous system. Sensory impulses are transmitted into the central nervous system, and motor impulses are transmitted out.

Certification. ANSI (American National Standards Institute) defines certification as documentation that determines criteria meets the requirements of the standard through testing or proven analytical method or both, carried out under the supervision of a Qualified Person.

CFR. Code of Federal Regulations. A collection of the regulations promulgated under United States Law.

Chemical. An element or a compound produced by chemical reaction.

Chemical Cartridge Respirator. A respirator that uses various chemical substances to purify inhaled air of certain gases and vapors.

Chemical Family. A group of single elements or compounds with a common general name.

Chemical Name. The name given to a chemical in the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstract Service (CAS). The scientific designation of a chemical or a name that will clearly identify the chemical for hazard evaluation purposes.

Chemical Pneumonitis. Inflammation of the lungs caused by chemical irritation.

CHEMTREC. Chemical Transportation Emergency Center is a national center established by the Chemical Manufacturers Association (CMA) to relay pertinent emergency information concerning specific chemicals on requests from individuals.

Chronic Effect. An adverse effect on a human or animal body, with symptoms developing slowly over a long period of time or recur frequently.

Chronic Exposure. Long-term contact with a substance.

Chronic Toxicity. Adverse effects resulting from repeated doses of, or exposures to, a substance over a relatively prolonged period of time.

Clean Air Act (CAA). Federal law enacted to regulate and reduce air pollution.

Clean Water Act (CWA). Federal law enacted to regulate and reduce water pollution.

CO. A colorless, odorless, flammable, and very toxic gas produced by the incomplete combustion of carbon. As chemical asphyxiant, it reduces the blood's ability to carry oxygen.

CO2. A heavy, colorless gas produced by the combustion and decomposition of organic substances and as a byproduct of many chemical processes. CO2 will not burn and is relatively nontoxic.

Combustible. Liquids that will burn, on the basis of flash points.

Combustible Liquid. A liquid having a flashpoint at or above 100F (37.8C), but below 200F (03.3C), except any mixture having components with flashpoints of 200F (93.3C) or higher, the total volume of which makes up ninety-nine (99) percent or more of the total volume of the mixture.

Common Name. Any means used to identify a chemical other than its chemical name.

Competent Person. A person who is capable of identifying existing and predictable hazards in the surroundings, working conditions which are hazardous to personnel, and who has authorization to quickly correct the situation.

Compressed Gas. A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 pounds per square-inch (psi) at 70F (21.1C); or a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130F (54.4C) regardless of the pressure at 70F (21.1C); or a liquid having a vapor pressure exceeding 40 psi at 100F (37.8C).

Concentration (Conc). The relative amount of a substance when combined or mixed with other substances.

Conditions to Avoid. Conditions encountered during handling or storage which could cause a substance to become unstable.

Confined Space. An area with limited openings for entry and exit that would make escape difficult in an emergency, has a lack of ventilation, contains known and potential hazards, and is not intended nor designed for continuous human occupancy.

Conjunctivitis. Inflammation of the conjunctiva, the membrane lining the eyelids, and covers the eyeballs.

Container. Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical.

Corrosive. A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. This term shall not refer to action on inanimate surfaces.

CPSC. Consumer Products Safety Commission responsible for regulating hazardous materials when consumer goods. For CPSC purposes, hazards are defined in the Hazardous Substances Act and the Poison Prevention Packaging Act of 1970.

Decomposition. Breakdown of a material or substance (by heat, chemical reaction, electrolysis, decay, or other processes) into parts, elements, simpler compounds.

Density. The mass per unit volume of a substance.

Depressant. A substance that reduces a bodily functional activity.

Dermal. Relating to the skin.

Dermal Toxicity. Adverse effects resulting from skin exposure to a substance. Ordinarily used to denote effects in experimental animals.

DHHS. U.S. Department of Health and Human Services.

Dilution Ventilation. Air flow designed to dilute contaminants to acceptable levels. Also see general ventilation or exhaust.

DOL. U.S. Department of Labor.

DOT. U.S. Department of Transportation; regulates transportation of chemicals and other substances.

Dry Chemical. A powdered fire-extinguishing agent usually composed of sodium bicarbonate, potassium bicarbonate, etc.

Energized. Connected to an energy source or containing residual or stored energy.

Energy isolating device. A mechanical device that prevents the transmission or release of energy, including but not limited to the following:

1. A manually operated electrical circuit breaker.
2. A disconnect switch.
3. A manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently.
4. A line valve, block, and any similar device used to block or isolate energy.

Energy Source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

EPA. U.S. Environmental Protection Agency.

Evaporation Rate. The rate at which a material will vaporize when compared to the known rate of vaporization in a standard material.

Explosive. A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Exposure of Exposed. State of being open and vulnerable to a hazardous chemical by inhalation, ingestion, skin contact, absorption, or any other course; includes potential exposure.

Extinguishing Media. The firefighting substance used to control a material in the event of a fire. It is usually identified by its generic name, such as fog, foam, water, etc.

Eye Protection. Items that work to protect the eyes such as safety glasses or chemical splash goggles.

F. Fahrenheit is a scale for measuring temperature.

FDA. U.S. Food and Drug Administration.

Fall Arrest System. A full body harness, shock absorbing lanyard, or self-retractable lifeline; with locking snap hooks and anchor points approved for a static load of 5,000 pounds or engineered to meet a two to one safety factor.

Fall Prevention. A structural design to limit a fall to the same level.

Fall Protection System. Protects personnel from a fall risk when working at elevated heights.

FIFRA. Federal Insecticide, Fungicide, and Rodenticide Act requires certain useful poisons sold to the public, such as chemical pesticides, contain labels with health hazard warnings to protect users.

First Aid. Emergency measures when a person is suffering from an accident, injury, or overexposure, before professional medical help can be obtained.

Flammable. A chemical described by one of the following categories:

a. "Aerosol, flammable." An aerosol, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback at any degree of valve opening.

b. "Gas, flammable." (1) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or (2) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit.

c. "Liquid, flammable." Any liquid with a flashpoint below 100F (37.8C), the total of which make up 99 percent or more of the total volume of mixture.

d. "Solid, flammable." A solid that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A solid is a flammable solid if it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashback. A flame from a torch burns back into the tip, the torch, or the hose. It is often accompanied by a hissing or squealing sound with a smoky or sharp-pointed flame.

Flashpoint. The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by the following methods:

a. Tagliabue Closed Tester (see American Nation Standard Method of Test for Flash Point by Tag Closed Tester, Z11,24 1979 [ASTM D5-79]).

b. Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 [ASTM D33-79]).

c. Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester [ASTM D3278-78]).

Foreseeable Emergency. Any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which could result in an uncontrolled release of a hazardous chemical into the workplace.

Formula. A scientific expression of the chemical composition of a material.

Fume. A solid condensation particle of extremely small diameter, commonly generated from molten metal as metal fume.

General Exhaust. A system for exhausting air containing contaminants from a general work area.

Generic Name. A designation or identification used to identify a chemical by, other than its chemical name.

Grounding. The procedure used to carry an electrical charge to ground through a conductive path.

Hand Protection. Specific type of gloves required to prevent harmful exposure to hazardous materials.

Hazardous Chemical. Any chemical whose presence or use is a physical a health hazard.

Hazardous Warning. Words, pictures, symbols, or combination thereof presented on a label or other appropriate form to inform of the presence of various materials.

HCS. Hazard Communication Standard is an OSHA regulation under 29 CFR Part 1910.1200.

Health Hazard. A chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees. Also includes chemicals which are carcinogens, toxic, or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic system, and agents that damage the lungs, skin, eyes, or mucous membranes.

Hemoglobin. An iron-containing conjugated protein or respiratory pigment occurring in the red blood cells of vertebrates.

Highly Toxic. A chemical in any of the following categories:

a. A chemical with a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

b. A chemical with a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death

occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

c. A chemical with a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Hot tap. A procedure used in the repair, maintenance and services activities, which involves welding on a piece of equipment under pressure, in order to install connections or appurtenances.

Ignitable. Capable of being set afire.

Impervious. A material that does not allow another substance to pass through or infiltrate it.

Incompatible. Materials that could cause dangerous reactions by direct contact with one another.

Ingestion. Taken in by the mouth.

Inhalation. Breathing in of a substance in the form of a gas, vapor, fume, mist, or dust.

Inhibitor. A chemical added to another substance to prevent an unwanted chemical change.

Insoluble. Incapable of being dissolved in a liquid.

Irritant. A chemical, which is not corrosive, that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

Irritating. A property of a liquid or solid substance which, upon contact with fire or when exposed to air, gives off dangerous or intensely irritating fumes.

L. Liter is a metric unit of capacity.

Label. Notice attached to a container, bearing information concerning its contents.

LC. Lethal concentration is the concentration of a substance being tested that will kill.

Local Exhaust. A system for capturing and exhausting contaminants from the air at the point where the contaminants are produced.

Lockout. The placement of a device on an energy-isolating device, in accordance with an established procedure, ensuring the energy isolating device and the equipment being controlled cannot be operated until the device is removed.

Lockout device. A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment.

M. Meter is a unit of length in the metric system.

m^3. Cubic meter is a metric measure of volume, approximately 35.3 cubic feet or 1.3 cubic yards.

Malaise. A feeling of general discomfort, distress, or uneasiness, an out-of-sorts feeling.

Mechanical Exhaust. A powered device, such as a motor-driven fan or air steam venturi tube, for exhausting contaminants from a workplace, vessel, or enclosure.

Mechanical Filter Respirator. A device used to protect against airborne particulate matter like dusts, mists, metal fume, and smoke. Mechanical filter respirators do not provide protection against gases, vapors, or oxygen deficient atmospheres.

Melting Point. The temperature at which a solid substance changes to a liquid state.

Metabolism. Physical and chemical processes taking place among the ions, atoms, and molecules of the body.

Meter. A unit of length.

Mg. Milligram is a metric unit of weight.

mg/kg. Milligrams of a substance per kilogram of body weight is an expression of toxicological dose.

mg/m^3. Milligrams per cubic meter is a unit for expressing concentrations of dusts, gases, or mists in air.

Micron. Micronometer; A unit of length equal to one-millionth of a meter.

Mist. Suspended liquid droplets generated by condensation from the gaseous to the liquid state, or by breaking up a liquid into a dispersed state, such as splashing, foaming, or atomizing. Mist is formed when a finely divided liquid is suspended in air.

Mixture. Any combination of two or more chemicals if the combination is not, in whole or part, the result of a chemical reaction.

ml. Milliliter is a metric unit of capacity; One-thousandth of a liter.

mmHg. Millimeters (mm) of mercury (Hg) is a unit of measurement for low pressures or partial vacuums.

Molecular Weight. Weight of a molecule based on the sum of the atomic weights of the atoms that make up the molecule.

N_2. Nitrogen is a colorless, odorless, and tasteless gas that will not burn and will not support combustion.

Narcosis. A state of stupor, unconsciousness, or arrested activity produced by the influence of narcotics or other chemicals.

Nausea. Tendency to vomit, feeling of sickness at the stomach.

NCI. National Cancer Institute is part of the National Institutes of Health.

NFPA. National Fire Protection Association which promotes/improves fire protection and prevention and establishes safeguards against loss of life and property by fire.

Needleless Systems. Devices which provide an alternative to needles for various procedures to reduce the risk of injury involving contaminated sharps such as IV systems or jet injections.

Neo. See Neoplasia.

Neutralize. To eliminate potential hazards by inactivating strong acids, caustics, and oxidizers.

Ng. Nanogram; one-billionth of a gram.

NIOSH. National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services (DHHS).

Nonflammable. Not easily ignited, or if ignited, not burning rapidly.

Non-Sparking Tools. Tools made from beryllium-copper or aluminum-bronze which greatly reduce the possibility of igniting dusts, gases, or flammable vapors.

Normal Production Operations. The utilization of a machine or equipment to perform its intended production function.

NO_x. Oxides of nitrogen which are undesirable air pollutants.

NRC. National Response Center is a notification center that must be called when significant oil or chemical spills or other environment-related accidents occur.

Occupational Exposure. An actual or potential parenteral, skin, eye, or mucous membrane contact with blood or other potentially infectious materials resulting from the performance of an employee's duties.

Odor. A description of the smell of the substance.
Odor Threshold. The lowest concentration of a substance's vapor, in air, that can be smelled.

Olfactory. Relating to the sense of smell.

Oral. Used in or taken into the body through the mouth.

Oral Toxicity. Adverse effects resulting from taking a substance into the body by mouth.

Organic Peroxide. An organic compound containing the bivalent -O-O structure and may be considered a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Organogenesis. The formation of organs during development.

Other Potentially Infectious Materials. Includes human body fluids visibly contaminated with blood.

OSHA. Occupational Safety and Health Administration, U.S. Department of Labor.

Overexposure. Exposure to a hazardous material beyond the allowable limits.

Oxidation. A reaction in which a substance combines with oxygen provided by an oxidizer or oxidizing agent.

Oxidizer. A chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, causing fire either by itself or through the release of oxygen or other gases.

Oxidizing Agent. A chemical or substance that brings about an oxidation reaction. The agent may provide the oxygen to the substance being oxidized, or it may receive electrons being transferred from the substance undergoing oxidation.

Percent Volatile. Percentage of a liquid or solid evaporating at an ambient temperature of 70F.

pH. A symbol relating the hydrogen ion (H+) concentration to that of a given standard solution. A pH of 7 is neutral. Numbers increasing from 7 to 14 indicate greater alkalinity. Numbers decreasing from 7 to 0 indicate greater acidity.

Physical Hazard. A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, and oxidizer, pyrophoric, unstable (reactive), or water-reactive.

Poison, Class A. Extremely dangerous poisons, poisonous gases, or liquids that, in very small amounts, either as gas or as vapor of the liquid, mixed with air, are dangerous to life.

Poison, Class B. A liquid, solid, paste, or semisolid substances, other than Class A poisons or irritating materials, that are known to be so toxic to humans that they are a hazard to health during transportation.

Polymerization. A chemical reaction in which one or more small molecules combine to form larger molecules. A hazardous polymerization is such a reaction that takes place at a rate that releases large amounts of energy.

Ppb. Parts per billion is the concentration of a gas or vapor in air, parts of the gas, or vapor in a billion parts of air. Usually used to express extremely low concentrations of unusually toxic gases or vapors; also the concentration of a particular substance in a liquid or solid.

Ppm. Parts per million is the concentration of a gas or vapor in air, parts of the gas, or vapor in a million parts of air; also the concentration of a particulate in a liquid or solid.

Psi. Pounds per square inch is the pressure a material exerts on the walls of a confining vessel or enclosure.

Qualified Person. A person with a recognized degree or professional certificate, (e.g. civil or mechanical engineering profession or Certified Safety Professional) and extensive knowledge and experience in this area, capable of doing design, analysis, evaluation, and specifications.

Reaction. A chemical transformation or change. The interaction of two or more substances to form new substances.

Reactive. See Unstable.

Reactivity. Chemical reaction with the release of energy.

Reducing Agent. A chemical or substance which combines with oxygen or loses electrons to the reaction.

Respiratory Protection. Devices to protect the respiratory system from overexposure by inhalation to airborne contaminants. Respiratory protection is used when a worker must work in an area where he/she might be exposed to concentration in excess of the allowable exposure limit.

Respiratory System. The breathing system that includes the lungs and the air passages (trachea or "windpipe," larynx, mouth, and nose) to the air outside the body, plus the associated nervous and circulatory supply.

Routes of Entry. The means by which material may gain access to the body, for example, inhalation, ingestion, and skin contact.

SDS. Safety Data Sheet.

Self-Contained Breathing Apparatus. A respiratory protection device that consists of a supply or a means of respirable air, oxygen, or oxygen-generating material, carried by the wearer.

Sensitizer. A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Servicing and/or Maintenance. Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or un-jamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting up. Any work performed to prepare a machine or equipment to perform its normal production operation.

Sharps with Engineered Sharps Injury Protections. Non-needle sharps or needle devices containing built-in safety features used for collecting fluids or administering medications or other fluids, or other procedures involving the risk of sharps injury will be used where feasible.

Skin. A notation indicating the stated substance may be absorbed by the skin, mucous membranes, and eyes-either airborne or by direct contact-and that this additional exposure must be considered part of the total exposure to avoid exceeding the PEL or TLV for that substance.

Skin Absorption. Ability of some hazardous chemicals to pass directly through the skin and enter the bloodstream.

Solubility in Water A term expressing the percentage of a material (by weight) that will dissolve in water at ambient temperature. Solubility information can be useful in determining spill cleanup methods and re-extinguishing agents and methods for a material.

Solvent A substance, usually a liquid, in which other substances are dissolved.

SO_X. Oxides of sulfur.

Species. Test animals used to obtain the toxicity test data reported.

Specific Chemical Identity. The chemical name, Chemical Abstract Service (CAS) Registry Number, or any precise chemical designation of a substance.

Specific Gravity. The weight of a material compared to the weight of an equal volume of water is an expression of the density of a material.

Spill or Leak Procedures. The methods, equipment, and precautions to be used to control or clean up a leak or spill.

Splash-Proof Goggles. Eye protection made of a noncorrosive material that fits snugly against the face and has indirect ventilation ports.

Spontaneously Combustible. A material that ignites as a result of retained heat from processing, or that will oxidize to generate heat and ignite, or that absorbs moisture to generate heat and ignite.

Stability. The ability of a material to remain unchanged. For SDS purposes, a material is stable if it remains in the same form under expected and reasonable conditions of storage or use.

Supplied-Air Respirators. Airline respirators of self-contained breathing apparatus.

Systemic Poison. A poison that spreads throughout the body, affecting all body systems and organs. Its adverse effect is not localized in one spot or area.

Systemic Toxicity. Adverse effects caused by a substance that affects the body in a general rather than local manner.

Synonym. Another name or names by which a material is known.

Tag-out. The placement of a tag on an energy isolating device to indicate the energy isolating device and the equipment is controlled.

Tag-out device. A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device to indicate the device and equipment being controlled may not be operated until the tag-out device is removed.

Target Organ Effects. The following is a target organ categorization of effects that may occur, including examples of signs and symptoms and chemicals that have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but they are not intended to be all inclusive:

(a) Hepatotoxins - liver damage.
Signs and symptoms - Jaundice; liver enlargement.
Chemicals - Carbon tetrachloride; nitrosamines.

(b) Nephrotoxins - kidney damage.
Signs and symptoms - Edema; proteinuria.
Chemicals - Halogenated hydrocarbons; uranium.

(c) Neurotoxins - effects on the nervous system.
Signs and symptoms - Narcosis; behavioral changes; decrease in motor functions.
Chemicals - Mercury, carbon disulfide.

(d) Agents on blood hematopoietic system - Decrease hemoglobin function; deprive the body tissues of oxygen.
Signs and symptoms - Cyanosis; loss of consciousness.
Chemicals - Carbon monoxide; cyanides.

(e) Agents that damage the lung - irritate or damage pulmonary tissue.
Signs and symptoms - Cough, tightness in chest, shortness of breath.
Chemicals - Silica, asbestos.

(f) Reproductive toxins - reproductive capabilities
Signs and symptoms - Birth defects; sterility.
Chemicals - Lead; DBCP.

(g) Cutaneous hazards - dermal layer of the body.

Signs and symptoms - Defatting of the skin; rashes; irritation.
Chemicals - Ketones; chlorinated compounds.

(h) Eye hazards - eye or visual capacity.
Signs and symptoms - Conjunctivitis; corneal damage.
Chemicals - Organic solvents; acids.

Target Organ Toxin. A toxic substance that attacks a specific organ of the body.

TCL. Toxic concentration low, the lowest concentration of a gas or vapor capable of producing a defined toxic effect in a specified test species over a specified time.

TDL. Toxic dose low, lowest administered dose of a material capable of producing a defined toxic effect in a specified test species.

Teratogen/Ter. A substance or agent, exposure to which by a pregnant female can result in malformations in the fetus.

TLV. Threshold Limit Value, the airborne concentration of material to which nearly all persons can be exposed to day after day without adverse effects.

Torr. A unit of pressure, equal to 1/760 atmosphere.

Toxic. A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Toxic Substance. Any substance that can cause acute or chronic injury to the human body, or which is suspected of being able to cause diseases or injury under some conditions.

Toxicity. The sum of adverse effects resulting from exposure to a material, generally, by the mouth, skin, or respiratory tract.

TSCA. Toxic Substances Control Act, regulates the manufacture, handling, and use of materials classified as "toxic substances."

TWA. Time-Weighted Average exposure is the airborne concentration of a material to which a person is exposed, averaged over the total exposure time.

Ug. Microgram; one-millionth of a gram.

Universal Blood and Body Fluid Precautions. An approach to infection control.

Unstable. Tending toward decomposition or other unwanted chemical change during normal handling or storage.

Unstable Reactive. A chemical in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or become self-reactive under conditions of shocks, pressure, or temperature.

Unqualified Person. Means a person with little or no training in avoiding the electrical hazards of working on or near exposed energized parts.

USDA. U.S. Department of Agriculture.

Vapor. The gaseous form of a solid or liquid substance as it evaporates.

Vapor Density. The weight of a vapor or gas compared to the weight of an equal volume of air is an expression of the density of the vapor or gas.

Vapor Pressure. The pressure exerted by a saturated vapor above its own liquid in a closed container.

Vermiculite. An expanded mica (hydrated magnesium-aluminum-iron silicate) used as sorbent for spill control and cleanup.

Viscosity. The tendency of a fluid to resist internal flow without regard to its density.

Volatility. A measure of how quickly a substance forms a vapor at ordinary temperatures.

Water Disposal Methods. Proper disposal methods for contaminated material, recovered liquids or solids, and their containers.

Water-Reactive. A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

Work Area. A room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

Workplace. An establishment at one geographical location containing one or more work areas.

APPENDIX B EXPOSURE DETERMINATION

Department/Establishment:_____ Date:_____

OSHA requires employers to perform an exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious materials. The exposure determination is made without regard to the use of personal protective equipment. This exposure determination is required to list all job classifications in which all employees may be expected to incur such occupational exposure, regardless of frequency.

In addition, OSHA requires a listing of job classifications in which some employees may have occupational exposure. Since not all the employees in these categories would be expected to incur exposure to blood or other potentially infectious materials, tasks or procedures that would cause these employees to have occupational exposure are also required to be listed in order to clearly understand which employees in these categories are considered to have occupational exposure.

APPENDIX C SHARPS INJURY LOG

Date	Brand/Type of Device	Accident Location	Description of the Incident/Injury

APPENDIX D ANNUAL LOG

Consideration & Implementation of Engineering Controls

Date	*Devices Discussed*	*Comments*

Log and brief comments of attendees:

Note: Consideration and implementation of appropriate engineering controls, and the solicitation of non-managerial healthcare workers in evaluating and choosing devices must be conducted annually.

APPENDIX E PERSONAL FALL ARREST SYSTEM INSPECTION

All fall protection equipment shall be inspected before each use in accordance with the manufacturer's instructions. The following is general guidance for the inspection of this equipment.

Harness Inspection Webbing
Inspect the entire surface of webbing for damage. Beginning at one end, bend the webbing in an inverted "U". Holding the body side of the belt toward you, grasp the belt with your hands six (6) to eight (8) inches apart. This surface tension makes the damaged fibers or cuts easier to see. Watch for frayed edges, broken fibers, pulled stitches, cuts, burns, and chemical damage.

"D" Rings/Back Pads
Check "D" rings for distortion, cracks, breaks, and rough or sharp edges. The "D" ring should pivot freely. "D" ring back pads should also be inspected for damage.

Attachment of Buckles
Note any unusual wear, frayed or cut fiber, or distortion of the buckles.

Tongue/Grommet
The tongue receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets. The webbing should not have any additional punched holes.

Tongue Buckle
Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. The roller should turn freely on the frame. Check for distortion or sharp edges.

Friction and Mating Buckles
Inspect the buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar.

Lanyard Inspection Hardware
Snaps: Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper. Keeper locks must prevent the keeper from opening when the keeper closes. Thimbles: The thimble must be firmly seated in the eye of the splice, and splice should have no loose or cut strands. The edges of the thimble must be free of sharp edges, distortion, or cracks.

Web Lanyard
While bending the webbing over a curved surface such as a pipe, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Examine the webbing for swelling, discoloration, cracks, or burns. Observe closely for any breaks in the stitching.

Rope Lanyard

Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken or cut fibers. Weakened areas from extreme loads will appear as a noticeable change from the original diameter. The rope diameter should be uniform throughout, following a short break-in period. Make sure the rope has no knots tied in it. Knots can reduce the strength of the rope by up to 60%.

Shock-absorbing Lanyard

Shock-absorbing lanyards should be examined as a web lanyard. However, also look for signs of deployment. If the lanyard shows signs of having been put under load (e.g. torn out stitching), remove it from service.

APPENDIX F BASELINE HEARING TEST - NOTIFICATION OF "QUIET PERIOD"

This is to confirm that _____is scheduled for hearing testing on _____at Family Medicine Associates. It is an OSHA Noise Standard Requirement that you be free from high noise exposure for 14 hours before your baseline testing. You should avoid the following types of noise prior to the hearing test:

WORKPLACE NOISE
LAWN MOWERS
LEAF BLOWERS
WEED TRIMMERS
CHAIN SAWS
POWER TOOLS
SMALL ENGINES
CAR RACES
SNOW MOBILES
SMALL AIRPLANES
POWER BOATS
ALL FIREARMS (hunting, target shooting, skeet shooting)
LOUD MUSIC (concerts, walkman or other headset radio, radio/stereos)

Please wear hearing protection until your baseline hearing test is completed to minimize noise exposure on and off the job.

I have been notified of the need to avoid occupational and non-occupational noise prior to my test.

****Please sign and return this form to Human Resources****

_____ _____
Employee Signature Date

_____ _____
Department Head Signature Date

APPENDIX G STANDARD THRESHOLD SHIFT

A Standard Threshold Shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 or more dBA at 2000, 3000, and 4000 Hz. If a Standard Threshold Shift has occurred, the employee must be informed in writing within 21 days of the determination. Employees will be trained in using hearing protectors, and in care of the hearing protectors. If the employee is already using hearing protectors, they will have to be retrained and refitted. If necessary, hearing protectors can be changed to a different type.

STANDARD THRESHOLD SHIFT NOTIFICATION

I have been notified of a Standard Threshold Shift on my last annual hearing test. As a result of my Standard Threshold Shift, I was fitted/refitted with _____ hearing protectors and received instructions in the proper way to wear and care for this protector. I understand that the use of this hearing protection is mandatory.

Signature_____ Date:_____

ALEXANDER COUNTY

I attended the Hearing Conservation Training Program with Alexander County and I understand that wearing hearing protectors is mandatory in designated areas of the County. In the area where I work, hearing protection is mandatory. I received my hearing protectors and realize additional hearing protectors are available. The following topics were included in training:

1. The effects of noise on hearing.
2. The purpose of the annual hearing test.
3. The purpose of wearing protectors and types of hearing protectors available as well as their proper fit and care.

Employee Signature _____

Date _____

APPENDIX H ANNUAL RESPIRATOR MEDICAL EVALUATION

Questionnaire and Fitting Form **CONFIDENTIAL**

PART 1. PERSONAL INFORMATION

Date: _____ Name: _____ *SS#:*_____
(first) (middle) (last)
Age: _____ Sex (circle one): Male Female Height: ____ ft. ___in. Weight: _____lbs.
Job Title: _____ Department: _____
A phone number where you can be reached by the health care professional who reviews this questionnaire: _____ The best time to phone you at this number: _____

You can reach the health care professional who reviews this questionnaire at: _____

Have you worn a respirator in the last year?(circle one): Yes No
If "yes," what type(s): _____

HEALTH QUESTIONS: Please circle "yes" or "no" to the following.

1. Have you smoked tobacco in the last month: Yes No

2. Have you ever had any of the following conditions?
   a. Seizures (fits): Yes No
   b. Diabetes (sugar disease): Yes No
   c. Allergic reactions that interfere with your breathing: Yes No
   d. Claustrophobia (fear of closed-in places): Yes No
   e. Trouble smelling odors: Yes No

3. Have you ever had any of the following pulmonary or lung problems?
   a. Asbestosis: Yes No
   b. Asthma: Yes No
   c. Chronic bronchitis: Yes No
   d. Emphysema: Yes No
   e. Pneumonia: Yes No
   f. Tuberculosis: Yes No
   g. Silicosis: Yes No
   h. Pneumothorax (collapsed lung): Yes No
   i. Lung cancer: Yes No
   j. Broken ribs: Yes No
   k. Any chest injuries or surgeries: Yes No
   l. Any other lung problem that you've been told about: Yes No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?
   a. Shortness of breath: Yes No

b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes No
c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes No
d. Have to stop for breath when walking at your own pace on level ground: Yes No
e. Shortness of breath when washing or dressing yourself: Yes No
f. Shortness of breath that interferes with your job: Yes No
g. Coughing that produces phlegm (thick sputum) not associated with a cold: Yes No
h. Coughing that wakes you early in the morning: Yes No
i. Coughing that occurs mostly when you are lying down: Yes No
j. Coughing up blood in the last month: Yes No
k. Wheezing: Yes No
l. Wheezing that interferes with your job: Yes No
m. Chest pain when you breathe deeply: Yes No
n. Any other symptoms that you think may be related to lung problems: Yes No

5. Have you ever had any of the following cardiovascular or heart problems?
a. Heart attack: Yes No
b. Stroke: Yes No
c. Angina: Yes No
d. Heart failure: Yes No
e. Swelling in your legs or feet (not caused by walking): Yes No
f. Heart arrhythmia (heart beating irregularly): Yes No
g. High blood pressure: Yes No
h. Any other heart problem that you've been told about: Yes No

6. Have you ever had any of the following cardiovascular or heart symptoms?
a. Frequent pain or tightness in your chest: Yes No
b. Pain or tightness in your chest during physical activity: Yes No
c. Pain or tightness in your chest that interferes with your job: Yes No
d. In the past two years, have you noticed your heart skipping or missing a beat: Yes No
e. Heartburn or indigestion that is not related to eating: Yes No
f. Any other symptoms that you think may be related to heart or circulation problems: Yes No

7. Do you currently take medication for any of the following problems?
a. Breathing or lung problems: Yes No
b. Heart trouble: Yes No
c. Blood pressure: Yes No
d. Seizures (fits): Yes No
e. Other _____

8. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9.)
a. Eye irritation: Yes No
b. Skin allergies or rashes: Yes No

c. Anxiety: Yes No
d. General weakness or fatigue: Yes No
e. Any other problem that interferes with your use of a respirator: Yes No

9. Would you like to talk to the health care professional about your answers to this questionnaire: Yes No

The following questions are voluntary:

10. Have you ever lost vision in either eye (temporarily or permanently): Yes No

11. Do you currently have any of the following vision problems?
a. Wear contact lenses: Yes No
b. Wear glasses: Yes No
c. Color blind: Yes No
e. Any other eye or vision problem: Yes No

12. Have you ever had an injury to your ears, including a broken eardrum? Yes No

13. Do you currently have any of the following hearing problems?
a. Difficulty hearing: Yes No
b. Wear a hearing aid: Yes No
c. Any other hearing or ear problem: Yes No

14. Have you ever had a back injury? Yes No

15. Do you currently have any of the following musculoskeletal problems?
a. Weakness in any of your arms, hands, legs, or feet: Yes No
b. Back pain: Yes No
c. Difficulty fully moving your arms and legs: Yes No
d. Pain or stiffness when you lean forward or backward at the waist: Yes No
e. Difficulties fully moving your head up or down: Yes No
f. Difficulty fully moving your head side to side: Yes No
g. Difficulty bending at your knees: Yes No
h. Difficulty squatting to the ground: Yes No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs.: Yes No
j. Any other muscle or skeletal problem that interferes with using a respirator:
Yes No

16. Has your health changed within the past year? Yes No If "yes", describe: _____
_____
_____

PART 2. WORKING ENVIRONMENT (Completed by Program Administrator)

Categorization of Workload Light Moderate Heavy

Will the user be working under hot conditions (temperature exceeding 77^{o} F? Yes No

Hazards to be protected against (e.g., dust, fumes, vapors): _____
_____

Type of respirator to be assigned: _____ Filtering Face Piece
_____ Half-face air purifying _____ Atmosphere Supplying (SCBA)
_____ Full-face air purifying _____ PAPR

Special Considerations:_____
_____

PART 3. MEDICAL EVALUATION (Completed by a licensed health care professional)

_____ This person can wear a respirator without restrictions
_____ This person can wear a respirator subject to the following restrictions:
_____
_____ This person cannot use a respirator of the type described above.

_____ _____
Physician's Signature *Date*

PART 4. FITTING EVALUATION (Completed by Program Administrator)

Type of respirator fitted: _____ Air purifying
_____ Atmosphere supplying
_____ Unable to fit (see comments)

Name, model number and size of respirator fitted: _____

NIOSH Approval Number(s):_____

Fit tests conducted: _____ Negative Pressure _____ Saccharin
_____ Positive Pressure _____ Bitrix

Fitted by: _____Date:_____

Additional Comments: _____
_____

APPENDIX I FIT TESTING PROCEDURES

General Procedures.

1. The employee shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so the respirator is acceptable to, and correctly fits, the user.
2. Prior to the selection process, the employee shall be shown how to put on a respirator, position on the face, set strap tension, and determine an acceptable fit.
3. The coordinator will inform the employee that s/he will select the respirator which provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The employee will be instructed how to hold each chosen piece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable facepieces are noted in case the one selected proves unacceptable, and the most comfortable mask is worn at least ten minutes to assess comfort. If the employee is not familiar with using a particular respirator, s/he will be directed to wear the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.
6. Assessment of comfort shall include review of the following points with the employee and allowing the employee adequate time to determine the comfort of the respirator:
    a) Position of the mask on the nose.
    b) Room for eye protection.
    c) Room to talk.
    d) Position of mask on face and cheeks.
7. The following criteria shall be used to help determine fit adequacy of the respirator:
    a) Chin properly placed.
    b) Adequate strap tension, not overly tightened.
    c) Fit across nose bridge.
    d) Tendency of respirator to slip.
    e) Self-observation in mirror to evaluate fit and respirator position.
8. The employee will conduct a user seal check using negative and positive pressure seal checks as demonstrated by the Program Administrator. Before conducting the negative or positive pressure checks, the employee shall be told to seat the mask on the face by moving the head from side to side and up and down slowly while taking in a few slow deep breaths. Another facepiece will be selected if the employee fails the user seal check tests.
9. The test shall not be conducted if there is any hair growth between the skin and the facepiece-sealing surface, such as stubble beard growth, beard, mustache, or sideburns which cross the respirator-sealing surface. Any type of apparel that interferes with a satisfactory fit shall be altered or removed.
10. If an employee exhibits difficulty in breathing during the tests, s/he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the employee can wear a respirator while performing his or her duties.
11. If the employee finds the fit of the respirator unacceptable, the employee shall be given the opportunity to select a different respirator and be retested.
12. Prior to the commencement of the fit test, the employee shall be given a description of the fit test and the employee's responsibilities during the test procedure. The description of the process

shall include test exercises that the subject will be performing. The respirator to be tested shall be worn for at least ten minutes before the start of the fit test.

13. The fit test shall be performed while the employee is wearing any applicable safety equipment that may be worn during the actual respirator use, which could interfere with respirator fit.

SACCHARIN SOLUTION AEROSOL PROTOCOL

A. Taste Threshold Screening.

1. Threshold screening as well as fit testing employees shall use an enclosure about the head and shoulders which is approximately 12 inches in diameter, by 14 inches tall, with at least the front portion clear and allowing free movement of the head. An enclosure hood assembly, which comes with most fit testing kits, is adequate.

2. The test enclosure shall have a three-quarter inch hole in front of the employee's nose and mouth area to accommodate the nebulizer nozzle.

3. The entire screening and testing procedure shall be explained to the employee prior to the conduct of the screening test.

4. The employee shall wear the test enclosure. For the threshold screening test, he shall breathe through his open mouth with tongue extended.

5. Using a DeVilbiss Model 40 Inhalation Medication Nebulizer, the test conductor shall spray the threshold check solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer or equivalent.

6. The threshold check solution consists of 0.83 grams of sodium saccharin USP in water. It can be prepared by putting 1cc of the test solution (see C6 below) in 100cc of water.

7. To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely then released and allowed to fully expand.

8. Ten (10) squeezes are repeated rapidly and the employee is asked whether the saccharin can be tasted.

9. If the first response is negative, 10 more squeezes are repeated rapidly and the employee is again asked whether the saccharin is tasted.

10. If the second response is negative, 10 more squeezes are repeated rapidly and the employee is again asked whether the saccharin is tasted.

11. The test conductor will take note of the number of squeezes required to elicit a taste response.

12. If the saccharin is not tasted after 30 squeezes (Step 9), the employee may not perform the saccharin fit test and shall use the Bitrex test.

13. If a taste response is elicited, the employee shall be asked to take note of the taste for reference in the fit test.

14. Correct use of the nebulizer means approximately 1cc of liquid is used at a time in the nebulizer body.

15. The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.

B. Respirator Selection.

Respirators shall be selected as described in section above, except each respirator shall be equipped with a particular filter cartridge.

C. Fit Test.

1. Employee shall wear the respirator for at least 10 minutes before starting the test.
2. The employee shall don the enclosure while wearing the selected respirator.
3. The respirator shall be properly adjusted and equipped with a particular filter cartridge.
4. The employee may drink water but nothing else, and not eat or chew gum for 15 minutes before the test.
5. A second DeVilbiss Model 40 Inhalation Medication nebulizer is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer or equivalent.
6. The fit test solution is prepared by adding 83 grams of sodium saccharin to 100cc of warm water.
7. As before, the employee shall breathe through the open mouth with tongue extended.
8. The nebulizer is inserted into the hole in front of the enclosure and the fit test solution is sprayed into the enclosure using the same technique as for the taste threshold screening and the same number of squeezes required to elicit a taste response in the screening.
9. After generation of the aerosol, the employee shall be instructed to perform the following exercise for one minute each:
    a. Normal breathing.
    b. Deep breathing, be certain breaths are deep and regular.
    c. Turning head from side-to-side. Be certain movement is complete. Alert the employee not to bump the respirator on the shoulders and have the employee inhale when their head is at either side.
    d. Nodding head up-and-down. Be certain motions are complete and made about every second. Alert the employee not to bump the respirator on the chest and have the employee inhale when their head is in the fully up position.
    e. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages which serve the same purpose may also be used.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

D. Normal breathing.

Every 30 seconds, the aerosol concentration shall be replenished using one-half the number of squeezes as initially. The employee shall so indicate to the test conductor if at any time during the fit test the taste of saccharin is detected.

If the saccharin is detected the fit is deemed unsatisfactory and a different respirator shall be tried. Successful completion of the test protocol shall allow the use of the tested respirator in contaminated atmospheres up to 10 times the PEL. In other words this protocol may be used to assign protection factors no higher than ten.

APPENDIX J RESPIRATOR INSPECTION FORM

User's Name _____ Make of Respirator

NIOSH/MSHA Approval: _____Model of Respirator _____

HOOD/ FACEPIECE		**OK**	**Defective**
N/A			
Cleanliness			
Flexibility			
Lens			
General Condition			
HEADSTRAPS		**OK**	**Defective**
N/A			
Elasticity			
Buckles and Attachments			
General Condition			
INHALATION AND EXHALATION VALVES		**OK**	**Defective**
N/A			
Valve Condition			
Valve Cover			
General Condition			
AIR-PURIFYING ELEMENTS		**OK**	**Defective**
N/A			
Correct Cartridge, Filter or Canister for Hazard			
Correct Installation			
Gaskets Present			
Cartridge or Filter Cleanliness			
General Condition of Cartridge Holders			
General Condition of Cartridge			
STORAGE		**OK**	**Defective**
N/A			
General			

Approved by _____ Date _____