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DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
700 WEST CAPITAL
LITTLE ROCK, ARKANSAS 72203-0867

SWLR 385-1-1

Regulation
No. 385-1-1

4 June 2001

Safety and Occupational Health
GENERAL POLICY

1. PURPOSE. This regulation prescribes the policies, responsibilities, and procedures for the Little Rock District's employees' Leadership comprehensive safety and occupational health program.

2. APPLICABILITY. This regulation is applicable to all Army Corps of Engineers Little Rock District activities.

3. REFERENCES. The publications referenced in this regulation are listed in the Appendix U.

4. GENERAL SAFETY POLICY.

a. In order to provide SWL a safe and healthful workplace, the District's Leadership shall implement a safety and occupational health program, which complies with references in the Appendix U; and other applicable Code of Federal Regulations, Department of Defense (DOD) directives, Army Regulations, state laws, and local codes. Every reasonable effort shall be made to eliminate or control physical conditions and activities that may cause accidents that result in property damage, injury, and illness at worksites under the jurisdiction of the Little Rock District.

b. The integration of accident prevention measures into all activities and operational procedures are the basic concept of the U.S. Army Corps of Engineers' (USACE's) accident prevention program. Operations managers, and team leaders shall ensure that safety measures are an integral part of their organizations' work process and ensure these measures are implemented.

5. Responsibilities.

a. The District Commander will:

(1) Ensure that an effective safety and occupational health program for Little Rock

This regulation supercedes SWLR 385-1-1 dated 23 Feb 1996.

District employees is fully implemented in accordance with (IAW) Federal and Army Regulations, DOD Directives, applicable state laws, and local legal codes.

(2) Designate a Safety and Occupational Health Manager to exercise staff supervision over the District safety and occupational health program.

(3) Chair the Safety and Occupational Health Committee.

b. Deputy District Engineer (DDE) will:

(1) Provide operational oversight of the District's safety and occupational health program.

(2) In the absence of the Commander, will chair the District Safety and Occupational Health Committee.

c. Safety and Occupational Health Committee members will:

(1) Meet periodically as directed by the DDE to analyze the District's accident experiences, identify disturbing trends, and recommend corrective actions. This committee will also review and make recommendations on issues concerning the Worker's Compensation Program.

(2) Develop and forward to the District Commander, for approval, promotional programs and other initiatives aimed at reducing accidents and ensuring compliance with safety and health regulations.

d. Chief of Safety and Occupational Health will:

(1) Serve as the District Commander's technical advisor for safety and health issues, provide the Commander periodic safety progress reports and recommendations for improvement to the safety program.

(2) Exercise staff supervision over the District safety and occupational health program, develop plans and initiatives to meet regulatory goals and requirements of higher headquarters.

(3) Ensure safe work practice and procedures are incorporated in the District regulations, policies, training and operational plans, accident prevention plans (APPs), position hazard analyses (PHAs), and activity hazard analyses (AHAs).

(4) Conduct periodic safety management evaluations of the Army facilities under the jurisdiction of the Little Rock District Army Corps of Engineers Safety and Health Requirement Manual in accordance with EM 385-1-1.

(5) Conduct safety and occupational health surveys and inspections, industrial hygiene surveys, specific hazard evaluations and provide Commander with recommendations, when appropriate, to eliminate or minimize identified hazards.

(6) Review accident investigation reports and accident statistics to determine significant causality factors and recommend countermeasures to eliminate or control exposures to those factors.

(7) Serves as technical advisor to the Boards of Investigation members and Safety and Occupational Health Committee Chairman.

e. Operations and Project Managers will:

(1) Ensure that Accident Prevention Programs (APP) are developed and implemented to control the specific occupational hazards at the facility worksites.

(2) Submit APP's and related safety program documents to the Safety Office (SO) for technical review.

(3) Ensure construction oversight at contract operations as required by EM 385-1-1.

(4) At project offices where public recreation is afforded, ensure a program is implemented to monitor recreational activities and promote public safety.

(5) Designate a collateral duty safety officer at all Project Offices to perform required functions.

f. Collateral Duty Safety Officer will:

(1) Conduct a comprehensive safety and occupational health inspection of his/her office facilities every three months, and provide a copy of findings to the Project Manager and the Safety and Occupational Health Office.

(2) Ensure corrective actions related to identified safety and health hazards are implemented and documented.

(3) Ensure that all elements of his/her office safety program are properly implemented.

(4) Provide the Project Manager or Field Office Operations Project Manager information about the status of the safety program, planned initiatives, and related recommendations.

g. Supervisors or Team Leaders will:

(1) Ensure the safety conduct of all work under their control by strictly enforcing recognized codes, standards, and regulations relevant to the work task.

(2) Conduct a health hazard assessment of each work activity under their supervision or work direction (to include work leaders), identify related safety and health hazards, and measures to control or eliminate these hazards.

(3) Prepare Job Hazard Analyses (JHA), Activity Hazard Analyses (AHA), and Accident Prevention Plans (APP) to control or eliminate occupational hazards.

(4) Train each team member about the contents of the organization's accident prevention plan, and the proper use and maintenance of personal protective equipment (PPE). As a part of this training, provide weekly meetings for all of the team members who are involved in hazardous activities.

(5) Have material safety data sheets (MSDS)for all hazardous chemicals in their work areas readily available for the team member's use.

(6) As part of their routine operational checks, conduct inspections of assigned areas to insure these areas are safe and free from known hazards. Contact immediate supervisor of any condition that may be considered unsafe or unhealthy.

(7) Take immediate action to correct hazards reported by their team members or other personnel.

(8) Prepare and submit an Accident Investigation Report, ENG Form 3394, through command channels to the Safety Office as stated in paragraph 6a, below. Provide Office of Counsel copies all motor vehicle accidents.

h. Each Individual Team Member will:

(1) Use required engineering and PPE controls, follow safe work practices, and comply with safety and occupational health rules, regulations, and standards.

(2) Correct and report unsafe conditions to the supervisor or team leader.

(3) Immediately report accidents, near miss accidents, and incidents to the supervisor or team leader.

(4) Report all motor vehicle accidents to the supervisor, Safety Office, and the Office of Counsel.

i. Other Personnel: All personnel performing services at or visiting Corps projects shall comply with all applicable Corps safety and health requirements. Visitors shall receive a safety briefing on the hazards associated with the facility or construction site.

6. PROCEDURES.

a. Accident Reporting: A legible and properly completed ENG Form 3394 with AHA, if available, will be sent through command channels to the Safety Office within five work days after any accident which results in the following:

(1) Personal Injuries/Illnesses:

(a) Any injury to a USACE military member, on or off duty, resulting in a lost duty day or a fatality.

(b) Any occupational injury/illness to a USACE civilian team member which requires the submission of Department of Labor Forms CA-1 (traumatic injury), CA-2 (occupational illness), or CA-6 (fatality) to the Office of Worker's Compensation Program. Any occupational injury/illness which results in a claim for medical expenses, a lost workday beyond the day or shift it occurred, an accident where three or more employees are injured, and/or a fatality requires such a submission.

(c) Any occupational injury/illness to USACE contractor personnel resulting in a lost workday, fatality, or medical treatment above general on site first aid.

(d) Any permanent disability or fatality to a public person which occurs on USACE administered property or in waters for navigation and power structures under USACE control.

(e) Any injury, occurring on premises under USACE control which might result in a claim against the U.S. Government.

(2) Property Damage Accidents:

(a) Any contractor property damage accident resulting in more than $2,000 damage.

(b) ALL government property damage accidents, regardless of the amount of damage.

(c) Accidental damage to private property, equipment, or material occurring during a USACE activity, regardless of the amount of damage.

(3) All accidents involving any USACE vehicle that result in injury, vehicle damage, or any other property damage regardless of the amount of damage. The term "USACE vehicle" includes all USACE, General Services Administration, leased, and rented vehicles operated by team members, and privately owned vehicles operated by team members for official business as authorized by travel orders.

(4) Other Accidents Requiring Reports: Accident investigation reports must also be submitted for accidental explosions, fires involving explosives, contamination or damage of property from radiological, biological, or chemical agents, or microwave or ionizing radiation.

(5) First Aid Cases: Occupational injuries/illnesses requiring first aid treatment without worker compensation forms are not reportable, but are recordable on daily records of first aid treatment forms at each facility.

b. Immediate Notification: Immediate telephonic notification will be made to the Safety Office IAW AR 385-40 and USACE Supplement 1, for any accident producing the following result:

(1) Fatality or permanent total disability to or involving on-duty military, government civilian, or contractor personnel; also off-duty if on the premises or incident to a USACE activity or operation.

(2) Hospitalization of three or more persons.

(3) Damage of more than $100,000 to USACE or contractor property and/or equipment.

(4) Any mishap, regardless of the consequences, which may result in unfavorable criticism of the USACE or provoke questions at the Washington level.

c. Other: Each organization will develop and enforce specific plans and procedures to ensure that all elements of the safety and occupational program, including safety surveys and training, accident reporting, fire prevention, emergency response, hazardous materials and waste management, safety awards, and other accident prevention measures, are implemented.

Thomas A. Holden Jr.

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Colonel, Corps of Engineers
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DISTRIBUTION A & D

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APPENDIX A

Indoctrination, Instruction, and Training

1. Purpose. This Appendix establishes procedures to ensure that all employees receive sufficient safety and occupational health instructions and training to enable them to perform their work in a safe manner.

2. Applicability. This program applies to all Little Rock District employees.

3. General Policy. Training is an essential component of an effective safety and health program. Training helps identify the safety and health responsibilities of both management and employees at the site. Training will be incorporated into education on performance requirements and job practices. The complexity of training depends on the size and complexity of the worksite as well as the characteristics and potential hazards at the site.

4. Indoctrination and Instruction.

a. Supervisors will provide all new employees with an initial safety indoctrination, to include:

(1) Safety and occupational health requirements

(2) Reporting of all accidents.

(3) Obtaining first aid and medical treatment.

(4) Responsibility for accident-free operations.

(5) Job Hazard Analysis

b. Supervisors will give all employees continuing instructions to enable them to conduct their work safely. They will provide special safety instructions to employees at the beginning of a new work assignment to cover any hazards that may be encountered.

5. Safety Meetings.

a. Supervisors will conduct a minimum of one 5-minute on-the-job-safety meeting each week for all field employees of the Operations, and Engineering & Construction Divisions.

b. Supervisors at each field installation or office and the Little Rock District office will hold a regularly scheduled safety meeting at least once a week for all of their employees. Topics discussed at these meetings will included specific sections of the EM 385-1-1 (Safety and Health Requirements Manual).

6. Responsibilities.

a. Supervisors will take the actions necessary to ensure that employees receive the required instruction and training.

b. Supervisors will maintain a record of scheduled monthly safety meetings, and will forward a copy to the Safety and Occupational Health Office annually.

7. Required Training.

a. Defensive Driving. All employees are required to successfully complete an approved defensive driving course prior to driving on official business. The National Safety Council's personal computer and instructor-taught courses for defensive driving are approved. Defensive driving certification must be renewed every three years.

b. First Aid & Cardiopulmonary Resuscitation (CPR). First aid attendants shall hold certifications in first aid and CPR. Training may be obtained from the American Red Cross, or from an agency, whose training is deemed equivalent by the American Red Cross. The certificate for first Aid cannot be older than 3 years from the date of issue, unless the currency period is specified by the issuing agency. For remote sites located more than 5 miles from a hospital, at least two employees on each shift shall be certified to administer first aid and CPR. CPR certification must be renewed annually in accordance with the American Red Cross.

c. Hazard Communication. All employees who are occupationally exposed to hazardous or toxic chemicals/materials are required to initially complete a four-hour hazard communication-training program and short refresher training session annually. HAZCOM training must be updated as new chemicals are introduced into the work place. Documented training should occur when an employee is assigned to work, or changes their work area. The training must include the following items:

- Requirements of the OSHA 29 CFR 1910.1200 HAZCOM Standard
- Location of MSDS and Written HAZCOM Program
- The physical and health hazards of chemicals in the work area.
- Measures the workers can take to protect themselves

- Procedures used to protect workers from chemicals: SOP's, engineering controls, good work practices, and PPE
- Methods the worker can use to detect specific chemicals in the work area: visual appearance, odor, vapor
- Hazards associated with chemicals in unlabeled pipes.
- Means the employer will use to inform workers of the hazards of nonroutine tasks, such as work in a confined space.

d. Hearing Conservation. All employees included in the hearing conversation program shall receive annual training on hearing conservation. Specific requirements for this training are included in Appendix Q.

e. Respiratory Protection. Respiratory protection training must be conducted for those individuals who wear a respirator prior to the use of a respirator and annually thereafter. The training must be comprehensive and understandable. Each employee required to wear a respirator must be trained in the following areas:

- Proper selection, use and limitations of the respirator.
- Inspection and fit checking of the respirator.
- The nature, extent, and effects of the respiratory hazards to which the employee may be exposed.
- An explanation of why engineering or administrative controls are not being applied or are not adequate, and what effort is to be made to reduce or eliminate the need for respiratory protection.
- Proper maintenance and cleaning procedures of the respirator
- Emergency procedures in the event of respirator failure

f. Supervisory Training. Supervisors shall receive at a minimum, training from the safety office in the recognition and elimination of hazards and the development of other required skills to implement the Little Rock District Safety and Occupational Health Program at the working level.

g. Bloodborne Pathogens. Operations/project managers must provide Bloodborne Pathogens training for their employees with occupational exposure to bloodborne pathogens. The training shall take place at the time of the initial assignment and at least annually thereafter. Additional training must be provided when changes in tasks or procedures change the employee's exposure to bloodborne pathogens. The additional training may be limited to addressing the new exposures created. The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address. The training program shall contain the following:

- An accessible copy of the 29 CFR 1910.1030 bloodborne pathogens regulation with an explanation of its contents.
- A general explanation of the epidemiology and symptoms of bloodborne diseases.
- An explanation of the modes of transmission of bloodborne pathogens.
- An explanation of the operation/project manager's site specific exposure control plan and the means by which the employee can obtain a copy of the written plan.
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposures to blood and other potentially infectious materials.
- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices and personal protective equipment.
- Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.
- An explanation of the basis for selection of personal protective equipment.
- Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
- An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.
- Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident.
- An explanation of the signs and labels required by the 29 CFR 1910.1030 bloodborne pathogens standard.

h. Confined space. No person shall be required or permitted to enter a confined space until they have been trained in the hazards associated with confined space entry. HAZWOPER training is conducted annually and parts of that training overlap confined space training. A competent person must conduct the training and it must be documented. Sample training forms are located in Appendix N. The following items must be addressed in the confined space entry-training program.

- Hazard recognition
- Signs and symptoms of exposure
- Entry/exit procedures
- Personal protective equipment
- Rescue/emergency procedures
- First aid/CPR overview
- Lockout/tagout and energy control

- Communication
- Monitoring
- Heat stress recognition and prevention
- Respiratory protection
- Safety and health hazard recognition

i. Lockout/Tagout. Lockout/tagout training should be conducted annually and adhere to the following guidelines:

- Training shall be provided to ensure that the purpose and function of the hazardous energy control procedures are understood by employees and that employees possess the knowledge and skills required for the safe application, usage, and removal of energy controls.
- Each authorized employee shall receive training in the recognition of hazardous energy sources, the type and magnitude of energy available in the workplace, and the methods and means for energy isolation and control.
- Each affected employee shall be instructed in the purpose and use of the energy control procedures.
- All incidental personnel shall be informed of the procedures and prohibitions relating to restarting or reenergizing systems which are locked or tagged out.
- When tagout systems are used, employees shall be trained in the limitations of tags.
- Employees shall be retrained in hazardous energy control procedures whenever:

(a) There is a change in their job assignments, a change in systems or processes that present a new energy control hazard, or a change in energy control procedures, or

(b) Periodic inspection reveals, or there is reason to suspect the presence of, inadequacies in or deviations from the employee's knowledge or use of energy control procedures.

- The supervisor shall certify and document all training and retraining: certification shall contain such information as the names of employees trained, the time, date, and location of training, the name of the trainer, etc.

j. Fall protection. Annual training for fall protection is required. Fall protection training must adhere to the following guidelines:

(1) Each employee who might be exposed to fall hazards shall be trained by a competent person qualified in the following areas, in the safe use of accessways and fall protection systems and the recognition of hazards related to their use, including:

- the nature of access and fall hazards in the work area,
- the correct procedures for constructing, erecting, maintaining, using, and dismantling accessways and fall protection systems,
- the maximum intended load-carrying capacities of accessways and fall protection systems, and
- all applicable requirements from this section, and
- the limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs, the correct procedures for handling and storage of equipment and materials, and the erection of overhead protection.

(2) Retraining shall be provided as necessary for employees to maintain an understanding of these subjects.

(3) The employer shall verify employee training by a written certification record which identifies the employee trained, the dates of the training, and the signature of the trainer. The Little Rock District Safety and Health Shop Specific Orientation sheets are included in this Appendix.

APPENDIX B

Fire Prevention Program

1. Purpose. The Fire Prevention Program outlines procedures for maintaining a comprehensive fire protection program for all employees of the Little Rock District.

2. Policy. All U.S. Government or Contractor property damage caused by fire, no matter the dollar value, will be investigated and reported on ENG Form 3394 and forwarded to Safety and Occupational and Health Office (SOHO) within 5 working days.

3. Responsibilities. Operations and Project managers must ensure that all provisions of this regulation are adhered to at their prospective worksites. The cooperation of all Little Rock District employees is required to fulfill the safety intent of the fire protection program.

4. Fire Prevention Plan.

a. Each facility and worksite must develop a written fire prevention plan including the following elements:

- A list of the major workplace fire hazards
- Proper handling and storage procedures for the fire hazards
- Potential ignition sources, which may give rise to a fire (such as welding or electrical discharge), and their control procedures
- A description of fire protection equipment and systems to be used in controlling fires
- Names of personnel assigned to control fuel source hazards and maintain equipment used to prevent or control fires

b. The supervisor shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

c. The operations/project manager shall review with each employee upon initial assignment those parts of the fire prevention plan, which the employee must know to protect themselves in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review.

5. Fire Drill. The worksite supervisor or team leader shall conduct a minimum of one fire drill every six months.

6. Fire Extinguisher Training, and Education.

The operations/project manager will ensure employees are trained annually on the general principles of fire extinguisher use and care. Training shall be conducted by a qualified person(s) and should be hands on with employee demonstration of proficiency.

7. Fire Extinguishers: Inspection, Maintenance and Testing

a. Fire extinguishers shall be clearly identified, on or near them, with their letter (class of fire) and numeric (relative extinguishing effectiveness) classification.

b. Fire extinguishers shall be maintained in good working condition (by GSA in the HQ building). Inspections will be in accordance with the EM 385-1-1, and NFPA Article No. 10. A list of extinguishers in use should be prepared.

c. Operations/project managers will determine the necessity for fire extinguishers in assigned GSA owned motor vehicles. Vehicles assigned to construction projects shall be equipped with a fire extinguisher. Fire extinguishers requisitioned for vehicle use should be of the A, B, C type, 5 pound capacity.

d. Portable fire extinguishers must be subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The supervisor shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less.

e. Stored pressure dry chemical extinguishers that require a 12-year hydrostatic test must be emptied and subjected to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date.

8. Hydrostatic Testing of Fire Extinguishers

a. Trained persons with suitable equipment and facilities shall perform hydrostatic testing.

b. The following types of fire extinguishers must be hydrostatically tested every 5 years:

- Cartridge operated water and/or antifreeze
- Stored pressure water and/or antifreeze
- Wetting agent

- Foam (stainless steel shell)
- Aqueous Film Forming Foam (AFFF)
- Loaded stream
- Dry chemical with stainless steel
- Carbon Dioxide

c. The following types of fire extinguishers must be hydrostatically tested every 12 years:

- Dry chemical, stored pressure, with mild steel, brazed brass or aluminum, shells
- Dry chemical, cartridge or cylinder operated, with miled steel shells
- Halon 1211
- Halon 1301
- Dry powder, cartridge or cylinder operated with mild steel shells

d. Portable fire extinguishers must be hydrostatically tested whenever they show new evidence of corrosion or mechanical injury.

e. All carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers are tested every 5 years at 5/3 of the service pressure as stamped on the cylinder. Nitrogen cylinders, which comply with 49 CFR 173.34(e)(15), may be hydrostatically tested every 10 years.

f. The operations/project manager must retain records as evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals expressed above. Such evidence shall be in the form of a certification record, which includes the date of the test, the signature of the person who performed the test, and the serial number, or other identifier, of the fire extinguisher that was tested.

9. Fixed Fire Suppression Systems.

a. Fixed fire suppression systems shall be designed, installed, maintained, and inspected in accordance with all applicable NFPA standards, including 11,12,15,17. Inspection and maintenance dates shall be recorded on the container, or in a central location. The fixed suppression must be inspected annually by a person knowledgeable in the design and function of the system, to assure the system is maintained in good operating condition.

b. If a fixed extinguishing system becomes inoperable, the supervisor shall notify the employees and take precautions to assure their safety until the system is operational.

c. The operations/project manager shall ensure a distinctive alarm or signaling

system, which complies with 29 CFR 1910.165 and is capable of being perceived above ambient noise or light levels, on all extinguishing system to indicate when the system is discharging.

d. Effective safeguards shall be provided to warn employees against entry into fixed extinguishing system discharge areas where the atmosphere remains hazardous to employee safety and health. Manual operating devices shall be identified as to the hazard against which they will provide protection.

e. Warning or caution signs shall be posted at the entrance to and inside, areas protected by the fixed extinguishing systems.

f. The operations/project manager shall assure that the weight and pressure of refillable containers is checked at least semi-annually. If the container shows a loss in net content or weight of more than 5%, or a loss in pressure of more than 10%, it shall be subjected to maintenance.

10. Fire Detection and Employee Fire Alarm Systems.

a. Fire detection and employee fire alarm systems shall be designed and installed in accordance with NFPA standards including 71,72A, 72B, 72C, 72D, OSHA 29 CFR 1910.164 and 1910.165 requirements. They shall be maintained in operable condition except during maintenance or repairs.

b. Fire detection systems and components will be restored to normal operating condition as immediately as possible after each test/alarm. Supervisors shall ensure systems, services, and components are maintained in sufficient qualities for prompt system restoration.

c. Fire detectors and detector systems shall be tested and adjusted as often as necessary, unless factory calibrated, to maintain operability and reliability.

d. Operations/project manager shall ensure that pneumatic and hydraulic operated detection systems installed after 1 JAN 1981, have supervised systems.

e. Ensure the alarm system is such that employees and the local fire department are alerted to emergencies. Manually operated alarm actuation devices shall be located in conspicuous and accessible locations that are familiar to all employees.

f. The alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions according to the Project Emergency Action Plan. The alarm shall be capable of being heard by the employees above ambient noise.

g. The alarm code and reporting instructions shall be conspicuously posted at telephones and entrances. Reporting and evacuation plans shall be conspicuously posted. If the installation is equipped with radio wave fire alarm systems, a compatible fire alarm transmitter should be used at the construction site.

11. Fire Prevention Inspections. An annual survey of the suitability and effectiveness of the worksite fire prevention plan shall be made by the District Safety Office. Records of the survey findings and recommendations shall be retained on file at the project or worksite. The collateral duty safety officer or assigned employee shall carry out the monthly fire prevention inspections. The fire prevention inspections will be used to determine, if a condition exist that may precipitate a fire. If a fire hazard is located, it should be immediately corrected, and a dated memo explaining the hazard and abatement measures implemented forwarded to the operations or project manager. The inspections should address the following questions:

a. Is there any accumulation of waste, flammable material, or rubbish on the premises?

b. Are the storage rooms clean?

c. Are approved waste cans provided for oily or greasy waste materials?

d. Are waste cans emptied daily, before or after closing hours, and is the waste material properly disposed of?

e. Are any entrances, exits, or fire escapes obstructed?

f. Is any woodwork or other combustible material too near steam pipes, boilers, flues, or furnaces? Are all metal flue joints securely fastened by weld or metal screws?

g. Is the fuel supply safely stored?

h. Are there any open flame lights or electric light bulbs near combustible materials?

i. Is all electric wiring and equipment checked annually? (Wire and cords should not come in contact with metal piping or be suspended from nails.)

j. Are there any electric fuses replaced by wire or any other improper current-carrying materials or devices? Are the installed fuses correct in capacity for the circuit?

k. Are there any violations of smoking rules?

l. Are all fire pails, hoses, nozzles, and chemical extinguishers in place and in good condition?

m. Are any sprinkler heads coated with paint or corroded?

n. Is there any part of the premises that is not frequently visited?

o. Are safety rules observed when handling or using flammable liquids?

p. Are proper precautions taken to isolate storage of combustible materials?

q. Are fire extinguishers fully charged, in operable condition (hose and nozzle), distinctly marked, readily accessible, and the correct type for the possible fire hazards of the area? (The date of the monthly extinguisher inspection should be recorded on the extinguisher tag)

r. Is their any external leakage, corrosion, or damage coming from any of the extinguishers?

s. If extinguisher is pump type, has it been pressure tested with either a gauge or weight? It is recommended that a professional fire extinguishing company, check and service fire extinguishers on a monthly basis to prevent faulty fire extinguishers from being used.

APPENDIX C

Activity Hazard Analysis

1. Purpose. Development of the Activity Hazard Analysis (AHA)is imperative in the education of the worker to the hazards and abatement procedures associated with the individual job tasks of a project.

2. Applicability. An AHA should be completed for all maintenance and construction work carried out at the Corps of Engineer (COE) projects, whether the site is a lock and dam, powerhouse, construction site, or a park facility. An AHA is needed for all field operations. Contractors and subcontractors should prepare and AHA for ALL job activities with associated hazards.

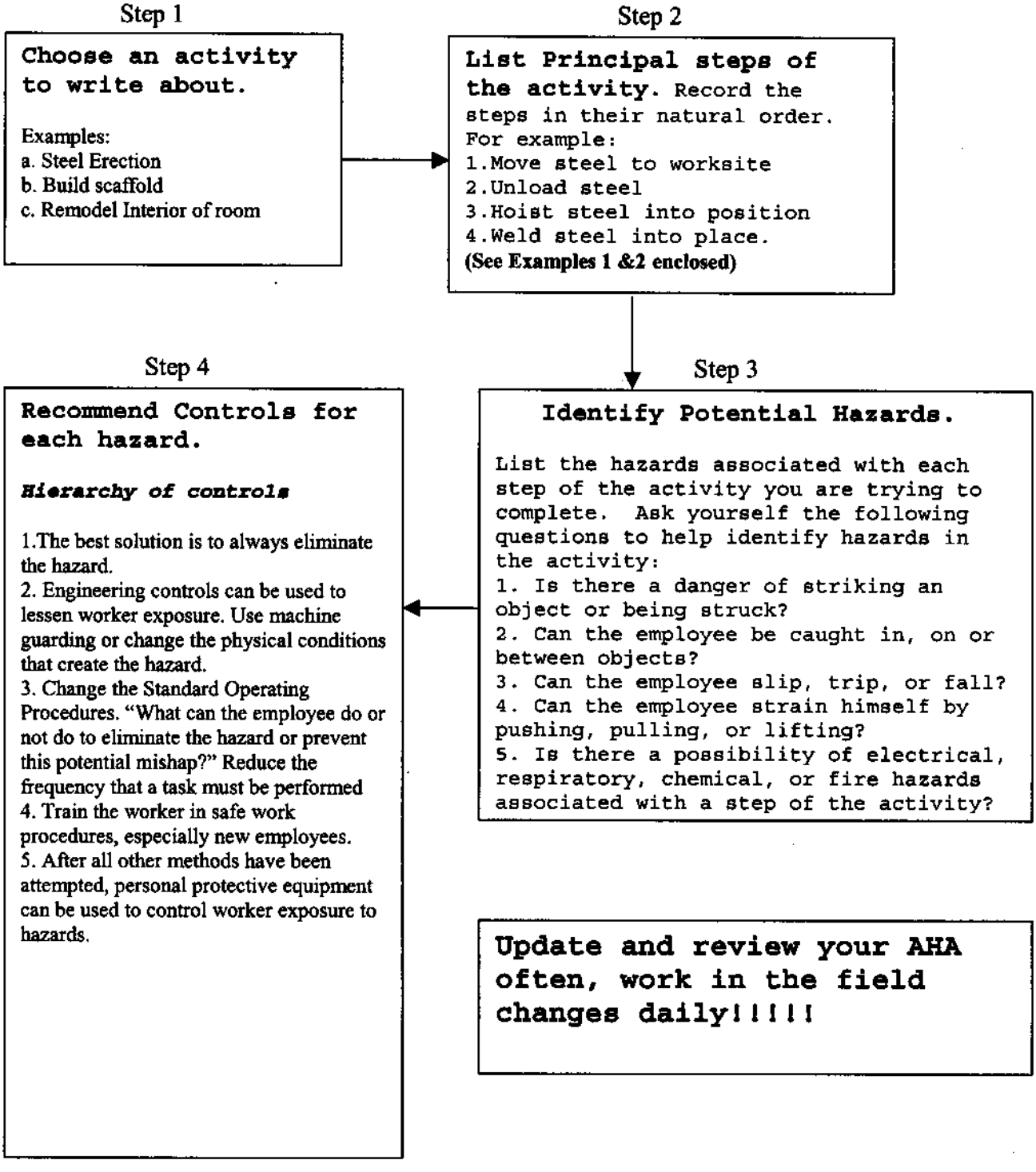
3. Procedures.

a. Project managers and supervisors are responsible for writing or reviewing previous AHA's prior to the start of jobs involving COE employees. The Contract Officer Representative (COR) is responsible for obtaining an AHA from contractors prior to the commencement of each phase of work at their facility. It is imperative that the AHA be developed and thoroughly reviewed by the individuals that will actually be performing the work.

b. The AHA should define the activity or job being performed, identify the sequence of work steps, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Contractor work should not proceed on a phase of the job until the AHA has been written for that phase, reviewed and accepted by the COE designated authority, and reviewed with the contractors and subcontractors.

c. The designated authority, shall determine the need for an analysis for each activity within
their area of responsibility. In developing the analysis for a particular activity, supervisors should draw upon the knowledge and experience of employees in that activity and the Safety and Occupational Health Office. The Safety and Occupational Health Office will offer assistance to anyone concerning the development of an AHA, and will review all AHA's submitted to them, and offer recommendations in a timely, professional manner.

Four Easy Steps to Writing an Activity Hazard Analysis



ACTIVITY HAZARD ANALYSIS (EXAMPLE 1)

CONTRACT NO.: (EM 385-1-1) LOCATION:
CONTRACTOR: ANALYZED BY/DATE:
ACTIVITY:

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
1. Delivery and unloading of materials.	1. Struck by vehicle or equipment, electric shock.	1. Provide clear area to unload materials. Materials will be stacked, blocked or interlocked. Vehicles will be maintained in a safe condition. A complete safety inspection will be performed on each vehicle before it is used on the job site. A signal person will be used when equipment is back up. Trucks should have back up alarms. Materials will not be unloaded near or underneath energized power lines.
2. Hoisting structural steel.	2. Electric shock, entrapment between rotating crane components, load falling on worker.	2. No part of the crane will be allowed within 10 feet of energized lines. The area around the rotating crane superstructure will be barricaded with caution tape. All cranes will load tested prior to their use onsite. Chokers and slings will be inspected daily. All crane hooks will be moused. Tag lines will be used to control loads. All employees will be kept clear of suspended loads. Signal persons will be used when suspended loads are not in the crane operator's view. Employees will not ride headache balls or live loads being hoisted.
3. Structural steel erection.	3. Worker struck by steel or falling materials, falls from elevation, fire from welding.	3. Structural members will be erected by no fewer than two bolt method. Structural columns will be supported by adequate main support members prior to end of each workday. Hand tools and equipment will be provided with secure lanyards. Safe access will be provided to work areas by ladders, scaffolds, or stairs. All ladders will be secured by top bottom, and intermediate fastenings as required. Employees working at elevations greater than 6 feet will be tied off at all times with safety belt and lanyard systems, except when they are protected by proper guardrail systems. Suitable portable fire extinguishers will be provided for welding and cutting operations. Oxygen an acetylene cylinder will be properly secured, maintained, and stored apart.
EQUIPMENT TO BE USED	**INSPECTION REQUIRMENTS**	**TRAINING REQUIRMENTS**

ACTIVITY HAZARD ANALYSIS (EXAMPLE 2)

CONTRACT NO.: (EM 385-1-1) LOCATION:
CONTRACTOR: ANALYZED BY/DATE:
ACTIVITY: Written by:

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
1. Placement of material inside the building.	1. Slips, trips, and falls.	1. Barricades and signage will be installed. Adequate lighting will be maintained or provided. Walkways will be kept clean, dry, and clear of debris by daily housekeeping. Materials will be stored in designated areas and secured from movement.
2. Installation of walls, door frames, and moldings.	2. Electric shock, cuts and lacerations, foreign objects in the eye, falls from elevations.	2. All electric tools will be double insulated. GFCIs will be used. All circular saws radial arm saws, and table saws will have guards in place. All personnel will be trained in safe operation of machinery before use. Hand tools will be regularly inspected fro broken handles. Dust will be controlled by wetting. Safety goggles will be worn by all employees when construction operations create dust debris. Emergency eyewash stations will be provided in the construction area. Employees will be trained in ladder safety procedures. All ladders will be inspected for defects daily.
3. Lift and hold equipment into place.	3. Stains from lifting.	3. All employees will be trained in safe lifting techniques.
4. Finishing wood work.	4. Exposure to hazardous materials.	4. Material safety data sheets (MSDS) will be maintained at the job site for each hazardous chemical. All hazardous chemical containers will be properly labeled. All employees will have Hazard Communications Training. Natural or mechanical ventilation will be provided.
EQUIPMENT TO BE USED	**INSPECTION REQUIREMENTS**	**TRAINING REQUIRMENTS**

APPENDIX D

Position Hazard Analysis

1. Purpose. To outline the hazards of each Little Rock District employee position, in an effort to prevent occupational accidents and illnesses.

2. Applicability. This program applies to all Little Rock District employees, full-time permanent, temporary and part-time personnel.

3. Procedures.

a. The District industrial hygienist will develop a Position Hazard Analysis (PHA), through the assistance of employee interviews and Work Survey Forms, for each occupation in the Little Rock District. The PHA's will be provided to all Project and Operations Managers. The PHA's will contain a description of the job tasks, hazards associated with those tasks, and control measures to reduce and manage the hazards.

b. The Project and Operations Mangers, Supervisors and Team Leaders should review the PHA's and tailor them to their own specific worksites.

c. The District industrial hygienist will review and update the PHA's on an annual basis, in order to include any additional job tasks which the employee may be performing.

4. References. EM 385-1-1, section 1.

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APPENDIX E

Accident Notification and Reporting

1. Purpose. Appendix E is set out to establish policy and procedures for the prompt notification of serious accidents, and to ensure proper investigation and reporting procedures for all accidents. The cause of all accidents must be determined and corrective measures developed and implemented to prevent recurrence.

2. Policy. All accidents and incidents listed in Table D-1, occurring on Corps of Engineer premises, or accidents and incidents occurring to Corps of Engineer employees or contractors, will be investigated and reported on ENG Form 3394. The original ENG Form 3394, must be received by the Occupational Safety and Health Office, within 5 working days of the accident or illness. This does not eliminate reporting on incidents required by other regulations or directives. Examples of areas considered not under the jurisdiction of the Little Rock District Corps of Engineers are:

a. Navigable waters beyond the arrival points of the Lock and Dam structures.

b. State highways progressing through Corps of Engineer Property.

3. Responsibilities.

a. Supervisor:

(1) Report all accidents occurring to government and contractor personnel, property, or equipment to the Occupational Safety and Health Office in writing.

(2) Should adhere to applicable guidance in EM 385-1-1, with regard to notification of the Safety and Occupational Health Office.

(3) The supervisor shall provide the appropriate Office of Workers Compensation Program (OWCP) blank forms (CA-1, CA-2 or CA-16) to the injured or ill employee and accompany the employee to the medical treatment facility. Upon receipt of the completed form from the employee, the supervisor shall complete the supervisor portion of the form, fill out the receipt portion, detach the receipt and give it to the injured or ill employee. File CA-1's and CA-2's with the Safety Office, within 5 working days after receipt of the employees written notice of injury.

(4) If a fatality occurs, the immediate supervisor shall complete the OWCP form CA-6, "Official Supervisors Report of Employee's Death." The supervisor shall forward the original,

typed copy to the Occupational Safety and Occupational Health Office.

(5) The supervisor is responsible for implementation of final corrective actions to prevent recurrence of any accidents.

b. Employee:

(1) Any employee sustaining a job related injury or illness must immediately report it to their supervisor.

(2) The employee must complete all applicable OWCP forms and return them to their supervisor.

c. Contractors:

(1) All accidents, illnesses, or injuries sustained by contractors, should be immediately reported to the Corps of Engineers Contracting Office Representative (COR).

(2) The contractor must complete ENG form 3394 through blocks 1 – 15, sign, date, and return form to the COR within two days of the occurrence. The COR will sign blocks 15C and 15D, and forward original to the Safety and Occupational Health Office.

4. Preparation of Accident Investigation Report, ENG Form 3394.

Flow charts detailing the procedures for preparing and submitting ENG 3394 are located on pages E4-E6. For any information that is not applicable to public accidents on the 3394 form, please include a detailed narrative, who, what, where, why, and when, and attach this to the 3394. Please type, whenever possible, and include the name and contact phone numbers of the narrative author.

5. Notification and Reporting Procedure.

a. The Safety and Occupational Health Office shall be notified immediately by telephone of all serious accidents as outlined in column 1 of Table E-1. Notification during non-duty working hours will be in accordance with procedures outlined in the District Emergency Notification Roster.

b. The SWL Safety and Occupational Health Office will be notified as soon as practical on all other accidents.

TABLE E-1

Accidents To Be Reported	1	2	3
a. Fatalities or permanent total disabling injuries to or involving on-duty military, Government civilian, or contractor personnel; also off duty, if on premises or incident to a Corps of Engineers activity or operation.	X		X
b. Accidents in which 3 or more persons are hospitalized.	X		X
c. Damage of $100,000 or more to Corps of Engineers' or contractor's property and/or equipment.	X		X
d. Any accident regardless of the consequences, if it is suspected it will result in unfavorable criticism of the Corps or the Army, or provoke questions at the Washington level.	X		X
e. Contractor employee lost-time injuries.		x	X
f. Government employee lost-time injuries.		x	X
g. Contractor or government property damage, motor vehicle or navigation accidents over $2,000		x	X
h. Public fatalities.		x	X
i. Any accidental damage to private property, equipment, or material incident to a USACE activity, regardless of the amount of damage		x	X
j. Any government employee accident, injury, or illness		x	X

1. Reported within 4-hours.
2. Reported during working hours.
3. ENG Form 3394 needed.

6. Pre-Accident Plan.

Alarm System. Each field installation shall have an accident alarm system separate and distinct from any other call system used at the facility. The alarm may be a whistle, horn, radio, or voice intercom system. A telephone communication may be used as a secondary backup system when no other means of communication is possible.

7. References.

a. AR 385-40, Accident Reporting and Records, 1 November 1994.

b. EM 385-1-1, Safety and Health Requirements Manual, 3 September 1996.

APPENDIX F

Standard Army Safety and Occupational Health Inspections

1. Purpose. This appendix furnishes guidelines for the identification and abatement of safety and occupational health hazards in the workplace.

2. Policy. Executive order 12196 , implementing Sec. 19,PL 91-596, the Occupational Safety and Health Act of 1970 (OSHA), requires that all Federal agencies adopt safety and health standards consistent with OSHA standards and promptly abate unsafe and unhealthful working conditions in Federal employee workplaces. It is the policy of the U.S. Army Corps of Engineers that all Corps of Engineers projects, plants and facilities provide places of employment that are consistent with the Occupational Safety and Health Standards published by the Dept. of Labor and are free of work hazards and health risks.

3. Responsibilities: Safety and Occupational Safety and Health Office

a. Assure that surveys are accomplished, provide technical assistance upon request, and coordinate the program for inspection of District Office elements and field projects

b. Will be responsible for assuring that inspections and necessary reporting are completed. High hazard areas identified by team leaders and supervisors, will also be inspected by Safety and Occupational Health Office personnel.

4. Inspection. The EM 385-1-1 (Safety and Health Requirements Manual) and OSHA standards will be used as the reference for safety surveys. All facilities will we surveyed annually. Notice of violation for Category Hazard severity categories will be assigned for each deficiency by Roman numeral according to the following criteria:

a. Category I. Catastrophic. May cause death or loss of a facility. Examples are:

- A leaking carbon monoxide source within a poorly ventilated enclosure.
- Non-explosion proof electrical fixtures used in an enclosure containing flammable materials.
- Employee working in an unguarded position, over 6 ft from another level

b. Category II. Critical. May cause severe injury, severe occupational illness, or major property damage. Examples are:

- Storage of oxygen cylinders near combustible materials.
- Employee exposed to welding, solvent, or paint fume above the permissible

exposure limit.

c. Category III. Marginal. May cause minor injury, minor occupational illness, or minor property damage. Examples are:

- Inadequate eye wash facilities for battery charging
- Bottom rung of ladder is broken or damaged.

d. Category IV. Negligible. Minor system impairment. Examples:

- Painted crane hook.
- Missing First Aid kit

5. Report of Violations.

a. Notice of a violation for Category I or II hazards, will be entered on DA Form 4753, "Notice of Unsafe or Unhealthful Working Conditions." This form must be posted clearly near the location of the hazard.

b. All violations of standards detected during the safety inspection will be entered on DA Form 4754, "Violation Inventory Log." This log will be used to monitor compliance, show all violations in order of discovery, and list established date for correction of deficiencies. The Violation Inventory Log will be maintained at each project office, and a copy forwarded to the Safety and occupational Health Office.

6. Abatement Procedures.

a. Category I deficiencies must be corrected immediately or controlled to the lowest possible hazard level.

b. DA Form 4756, "Installation hazard Abatement Plan," will be completed for all hazards recorded on DA Form 4754 which are not correctable within 30 days of date of discovery. A copy of the completed DA 4756 should be forwarded to the Safety and Occupational Health office.

INSTALLATION HAZARD ABATEMENT PLAN

For use of this form, see AR 385-10; the proponent agency is OTIG

1. PROJECT NO.	2. DATE PREPARED	3. DATE REVISED
4. ACTIVITY/ORGANIZATION	5. HAZARD LOCATION(S)	6. RISK ASSESSMENT CATEGORY

7. CITATION OF SPECIFIC OSHA AND OTHER STANDARD VIOLATED

8. DESCRIPTION OF PROPOSED CORRECTIVE ACTION OR REMEDIAL MEASURES

9a. ESTIMATED COST OF CORRECTIVE ACTION $	9b. APPROPRIATION
9c. PROGRAM ELEMENT NUMBER	9d. BUDGET COST ESTIMATED (BCE: Yes ☐ No ☐)

10. ESTIMATED ADDITIONAL OPERATING AND MAINTENANCE COSTS, IF ANY
$

11. DESCRIPTION OF INTERIM HAZARD CONTROL MEASURES IN EFFECT

12. OTHER RELEVANT INFORMATION

13. ESTIMATED ABATEMENT COMPLETION DATE

PREPARED BY	APPROVED BY

DA FORM 4756, OCT 78

USAPPC V1.00

SWLR 385-1-1
4 Jun 01

EMPLOYEE REPORT OF ALLEGED UNSAFE OR UNHEALTHFUL WORKING CONDITIONS

For use of this form, see AR 385-10; the proponent agency is Office of The Inspector General.

This form is provided for the assistance of any complainant and is not intended to constitute the exclusive means by which a complaint may be registered with the local Safety Office (Ref OSHA Poster on rights of employees and their representatives).

The undersigned *(check one)*

☐ Employee ☐ Representative of employees ☐ Other *(Specify)* _____

believes that a job safety or health hazard exists at the following place of employment

Does this hazard *(s)* immediately threaten serious physical harm? ☐ Yes ☐ No
If "yes" checked, immediately contact your supervisor or safety representative.

Name of official in charge _____ Telephone _____

Operation/Activity _____

Exact location of worksite _____

1. Kind of operation _____

2. Describe briefly the hazard which exists there including the appropriate number of employees exposed to or threatened by such hazard

3. List by number and/or name the particular occupational safety and health standard *(s)* which may have been violated, if known

4. *(a)* To your knowledge, has this hazard been the subject of any union/management grievance or have you *(or anyone you know)* otherwise called it to the attention of, or discussed it with the employer or any representative thereof? _____

(b) If so, please give the results thereof, including any efforts by management to eliminate or reduce the severity of the hazard

5. Please indicate your desire:

☐ I do not want my name revealed to the official in charge.

☐ My name may be revealed to the official in charge.

WORK LOCATION	TELEPHONE NO.	DATE

TYPED OR PRINTED NAME OF EMPLOYEE OR EMPLOYEE REPRESENTATIVE	SIGNATURE

DA FORM 4755, OCT 78 USAPPC V1.00

VIOLATION INVENTORY LOG

For use of this form, see AR 385-10; the proponent agency is ODCSOPS

LOG OF SCHEDULE OF CORRECTIVE ACTION-COMPLIANCE WITH SAFETY AND HEALTH STANDARDS

NAME OF INSTALLATION

ITEM	LOCATION OF INCONSISTENCY 1/	OSHA REFERENCE		INCONSISTENCY	CORRECTIVE ACTION	TARGET DATE FOR CORRECTIVE ACTION	DEGREE OF DANGER 3/	ESTIMATED COST
	a	TITLE/PART *b*	SUB-PART 2/ *c*	*d*	*e*	*f*	*g*	*h*

NOTES:
1/ Such as "*Carpenter Shop and/or Building Number.*"
2/ Include paragraph number in another code if further referenced.
3/ Use Roman numerals (Category I - Imminent danger, Category II - Serious hazard Category III - Moderate hazard, Category IV - De minimus hazard)

DA FORM 4754, OCT 78

USAPPC V1.10

NOTICE NO. _____ OF

UNSAFE OR UNHEALTHFUL WORKING CONDITION

(DO NOT REMOVE NOTICE UNTIL CONDITION IS ABATED)

For use of this form, see AR 385-10; the proponent agency is Office of The Inspector General.

1. UNIT INSTALLATION	3. DATE OF INSPECTION
2. OFFICIAL IN CHARGE OF WORKPLACE	4. STANDARD VIOLATED
5. LOCATION OF VIOLATION	
6. DESCRIPTION OF UNSAFE OR UNHEALTHFUL CONDITION	
7. RECOMMENDED ABATEMENT PROCEDURES a. Interim b. Final: Abatement should be completed by	
8. ADDITIONAL INFORMATION CONCERNING THIS VIOLATION CAN BE OBTAINED FROM _____ TELEPHONE NO. _____	

DA FORM 4753, OCT 78

USAPPC V1.10

APPENDIX G

Employee Reports of Unsafe or Unhealthful Working Conditions

1. Purpose. This appendix establishes procedures for reporting, reviewing, and resolving employee complaints of unsafe or unhealthful working conditions.

2. Applicability. This program applies to all Little Rock District employees, contractors, and the general public.

3. General Policy. Any employee may report an unsafe or an unhealthful condition to the supervisor in an effort to resolve the condition or eliminate the hazard. The employee may make their report in writing or orally to their supervisor. If the employee wishes, they may make their complaint directly to the Chief of Safety and Occupational Health.

4. Responsibilities.

a. Safety and Occupational Health Office.

1. Responsible for investigating all safety and occupational health complaints of unsafe and unhealthful working conditions not resolved at the project level.

2. Responsible for providing a written report to the complainant and their supervisor of all findings.

b. Project and Operations Managers, Supervisors and Team Leaders

1. Responsible for investigating all safety and occupational health complaints of unsafe and unhealthful working conditions.

2. If possible, abate or eliminate hazard. If necessary, report condition to the safety and occupational health office.

3. Maintain a file on all safety complaints.

c. Employee

1. Responsible for reporting all unsafe and unhealthful working conditions to supervisor.

2. If possible, abate or eliminate hazard. If necessary, report condition to the Safety and Occupational Health Office.

5. Procedures for Filing a Report.

a. Employee should report unsafe work conditions on DA Form 4755 (Employee Report of Alleged Unsafe or Unhealthful Working Conditions). In case of imminent danger, the employee is permitted to make a report by telephone or e-mail to the Safety Manager.

b. The written report should be signed. However, anonymous reports will be investigated in the same manner as signed reports.

c. Submitted directly to the Safety Manager.

d. Reports that appear to involve imminent danger will get priority attention. If an imminent danger situation exists, the procedures outlined in paragraph 6 will be followed.

e. The Safety Manager will notify the report originator, as to the status of the investigation. The report will contain the following information: Existing hazards, corrective action, and anticipated date of completion. The notification will be written and furnished within 10 working days following receipt of the report.

f. If the originator is dissatisfied with the Safety Manager's response, the originator may appeal to the District Engineer. The District Engineer will review the findings and take action as appropriate.

g. If the originator is dissatisfied with the District Engineer's response, the originator may then appeal to the Chief of the Safety and Occupational Health Office of the Southwestern Division. If still dissatisfied, the appeal will be transmitted through channels to the Chief of the Corps of Engineers Safety and Occupational Health Office, HQDA.

6. Imminent Danger. When an imminent danger situation is identified, the immediate supervisor will be notified as soon as possible. The supervisor must correct the situation or withdraw personnel from exposure. The Safety and Occupational Health Office will work with the supervisor and project manager to prevent further employee exposure to imminent danger hazards. A report should be forwarded to the District Safety and Occupational Health Office and posted conspicuously near the hazard explaining the following:

- Hazard location
- Full description of hazard
- Interim hazard control measures in effect
- Proposed long term corrective action
- Estimated completion date of corrective action

7. Participation Safeguard.

a. No employee will be subject to restraint, interference, coercion, discrimination or reprisal by virtue of their participation in filing of reports of unsafe or unhealthful working conditions.

b. Employees, who feel they have not been treated fairly because of their participation in this program, have the right to present their complaints, grievances, and appeals in accordance with the Handbook of Civilian Personnel Regulations, for prompt consideration and equitable decisions.

c. Supervisors who are proven to have treated employees unfairly because of the employee's participation in this program shall be subject to disciplinary action.

8. Contact Information. The District Safety Manager, may be contacted at the following address:

USACE-Little Rock
ATTN: Chief, Safety Office CESWL-SO
P.O. Box 867
Little Rock, AR 72203-0867,

or

by calling (501) 324-5617 or (501) 324-5616.

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APPENDIX H

Safety in Contract Work

1. Purpose. The purpose of this Appendix is to outline key elements of the safety program germane to Corps of Engineer contractor work.

2. Applicability. This Appendix applies to all Little Rock District contractors, contract office representatives, quality assurance personnel, administrative contracting officers, safety and occupational health office personnel, operations and project managers, and any other personnel involved in the administration, review, implementation, and oversight of District contractor activities whether temporary or permanent.

3. Policy. Safety and occupational health requirements shall be integrated into the technical specifications for each project. To provide a safe, accident free work place, the Corps of Engineers and contractors must take a proactive approach toward safety. This requires a Safety Plan, Accident Prevention plan, and Activity Hazard Analysis, with instructions to all workers concerning appropriate safety measures and requirements. All instructions, plans and analyses must comply with Occupational Safety and Health Administration regulations, ANSI standards, and the USACE Safety and Health Requirements Manual, EM 385-1-1, Sept. 1996, with all its future revisions and publications.

4. Procedures.

a. Safety Office Review. The Engineering and Construction division will furnish contract specifications to the Safety and Occupational Health Office (SOHO) for review and comment, prior to presentation of the contract for bid. Special provisions pertaining to safety and occupational health, shall be submitted by the SOHO for inclusion into the contract specifications. The SOHO shall review all contractor safety submittals (accident prevention plan, safety plan, activity hazard analyses) prior to the USACE/contractor pre-construction conference.

b. Contracting Officer Representative. The Contracting Officer Representative will send a letter to each contractor immediately following a contract award, to ensure cooperation and complete understanding concerning the safety and occupational health requirements of the US Army Corps of Engineers.

c. Contractor safety submittals.

(1) Accident prevention plan. The contractor must submit in writing, an accident

prevention plan for review, through the COR, to the Safety and Occupational Health Office prior to the pre-construction conference. The intent of the accident prevention plan is to state the methods to be used by the contractor, to incorporate the USACE safety and occupational health requirements into their operating methods, during the job in question. The accident prevention plan should address specific hazards associated with the awarded contract. The accident prevention plan must be signed, dated, and state the name of the prime contractor employee responsible for the safety and occupational health program. Please review sections 28.B.01 and Appendix A of the USACE Safety Manual, EM 385-1-1 dated 3 September 1996 for further information on Accident prevention plans.

(2) Activity Hazard Analysis (AHA). Before beginning each activity involving a type of work presenting hazards not experienced by the contractor or subcontractors in previous project operations, or where a new work crew or subcontractor is to perform the work, activity hazard analyses shall be prepared by the contractors performing the work activity. The analyses must define the activities being performed and identify the sequences of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work will not begin until the hazard analysis for the work activity has been accepted by the Government's designated authority and discussed with all personnel engaged in the activity, including the prime contractor, subcontractors, and Government on-site representatives. Specific information and examples on the preparation of AHA's are included within this regulation in Appendix C.

5. Contractor Safety Review. The following information is provided as a tool, to assist USACE quality assurance personnel, and contract office representatives, in their daily safety inspections of contractor activities.

a. Personal Protective Equipment:

(1) Safety glasses, goggles, and/or face shields shall be worn as required and/or when exposed to hazards from flying objects.

(2) Hearing protection will be worn in areas designated as noise hazard areas and in any other area or operation when noise levels exceed 85dB.

(3) Approved hard hats (ANSI Z89.1) will be worn in areas designated as hard hat areas. Hard hats will be worn by all employees, visitors, and suppliers, in all construction areas and any areas that present hazards from falling or flying objects.

(4) Type III, Type V, or better US Coast Guard approved International Orange personal flotation device shall be provided to and properly worn by all persons working

where drowning hazards are present.

(5) Other protective equipment (respirators, foot protection, etc.) will be worn in designated areas or where the scope of work requires such equipment for the safe operation of the task.

b. Hazard Communication: Material Safety Data Sheets (MSDS) for all chemicals are to be made available at the work site. All containers of chemicals will be labeled for identification and hazards. Strict compliance with 29 CFR 1910.1200 is required.

c. Lockout/Tagout: Hazardous energy associated with machines or equipment, where the unexpected start-up or release of stored energy could cause injury, shall be controlled by procedures followed from a written Lockout/Tagout Program in accordance with (IAW) section 12, EM 385-1-1, or OSHA Standards, most stringent will apply.

d. Fall Protection: Where employees are 6 feet or more above a lower level, Fall Protection Systems shall be utilized IAW section 21, EM 385-1-1.

e. Confined Space Entry: Entry into "Permit-Required Confined Spaces" shall be strictly controlled by a written Confined Space Entry Program, IAW 29 CFR 1910.95 and section 06.I, EM 385-1-1. At least one additional person shall be present outside the confined space as the attendant and communication between both will be maintained. All personnel must have documented training for their specific activity prior to entrance into any confined space.

f. Portable Electric and Hand Tools:

(1) All portable electric tools shall provide protection from electric shock by grounding with a three-prong plug or through the use of double-insulated tools.

(2) Hand and power tools shall be in good repair and with all required safety devices installed and properly adjusted: tools having defects that will impair their strength or render them unsafe shall be removed from service.

(3) All receptacle outlets that provide temporary electrical power during construction, remodeling, maintenance, repair, or demolition, shall have ground-fault circuit-interrupter (GFCI) protection for personnel. GFCI protection shall be provided on all circuits serving portable electric hand tools or semi-portable electric power tools (such as block/brick saws, table saws, air compressors, welding machines, and drill presses).

g. Excavation:

(1) Prior to opening an excavation, underground installations (e.g., sewer, telephone, water, fuel, electric lines) shall be located and protected from damage or displacement: utility companies and other responsible authorities shall be contacted to locate and mark the locations.

(2) The sides of all excavations in which employees are exposed to danger from moving ground shall be guarded by a support system, sloping or benching of the ground, or other equivalent means.

(3) Scaffolding: Scaffolds and their components shall be capable of supporting without failure at least 4 times the maximum anticipated load. Scaffold design shall be IAW section 22.B, EM 385-1-1.

h. Compressed Gas Cylinders:

(1) Cylinders containing oxygen or oxidizing gases shall be separated from cylinders in storage containing fuel gases by at least 20 ft. or a fire resistive partition, having at least a one hour rating.

(2) Smoking shall be prohibited wherever cylinders are stored, handled, or used.

(3) Cylinder valves shall be closed and when cylinders in storage, in transit, not in use, or empty. Valve caps shall be in place when cylinders are in storage, in transit, or whenever the regulator is not in place.

(4) All compressed gas cylinders in service shall be secured in substantial fixed or portable racks or hand trucks.

(5) Compressed gas cylinders shall be secured in an upright position at all times, except when being hoisted (except acetylene cylinders shall never be laid horizontal).

i. Ladders:

(1) Portable ladders shall have slip-resistant feet.

(2) Portable ladders shall be used at such a pitch that the horizontal distance from the top support to the foot of the ladder will not be greater than one-fourth the vertical distance between these points.

(3) Ladders shall be secured by top, bottom, and intermediate fastenings as required to hold them rigidly in place and to support the loads which will be imposed upon them.

j. Barricades: All ground or floor openings shall be adequately barricaded to prevent accidental entry. Barricades shall be visible day and night.

k. Rigging:

(1) Hooks, shackles, rings, pad eyes, and other fittings that show excessive wear or that have been bent, twisted, or otherwise damaged shall be removed from service.

(2) When two wires are broken or rust or corrosion is found adjacent to a socket or end fitting, the wire rope shall be removed from service or restocked.

l. Housekeeping: All stairways, passageways, gangways, and accessways shall be kept free of materials, supplies, and obstructions at all times.

m. Temporary construction buildings, facilities, field offices, work trailers, & dumpsters must be 20 ft. from buildings and fire lanes providing access to all areas shall be established and maintained free of obstruction.

n. Machine guarding: No guard, safety appliance, or device shall be removed from machinery or equipment, or made ineffective except for making immediate repairs, lubrications, or adjustments, and then only after the power has been shut off. All guards and devices shall be replaced immediately after completion of repairs and adjustments and before power is turned on

o. Fire Protection:

(1) Flammable and combustible liquids must be handled and stored IAW section 09.B,
EM 385-1-1. Flammable liquids shall be kept in closed containers or tanks when not in use. (see section 09.B for container & cabinet requirements)

(2) Flammable and combustible liquids shall not be stored in areas used for exits, stairways, or safe passage of people.

(3) Portable fire extinguishers shall be provided where needed as specified in Table 9-1 of section 09.E, EM 385-1-1.

p. Welding and cutting:

(1) Workers and the public shall be shielded from welding rays, flashes, sparks, molten metal, and slag.

(2) Before welding, cutting, or heating operations a flame permit should be obtained if applicable.

q. Personnel Certifications & Responsibilities:

(1) When a medical facility or physician is not accessible within 5 minutes of an injury to a group of two or more employees for the treatment of injuries, at least two employees on each shift shall be qualified to administer first aid and CPR.

(2) Safety meetings shall be conducted at least once a month for all supervisors on the project location and at least once a week by supervisors or foremen for all workers. Meetings shall be documented, including date, subjects, & names.

(3) Emergency phone numbers and reporting instructions for ambulance, fire, and police shall be conspicuously posted at the work site.

APPENDIX I

Public Water Safety

1. Purpose. This appendix provides for a coordinated water safety program throughout the District. The purpose is to prevent public fatalities on recreational waterways located within the boundary of Little Rock District, US Army Corps of Engineers.

2. Policy. The District has a moral responsibility for the safety of the visiting members of the public who use facilities for water recreation activities. In order to meet this responsibility properly the resources must be planned, designed, constructed, operated and maintained in a manner which will best provide for the safety of the members of the public who use the facilities.

3. Responsibilities. A noted public safety program demands a coordinated effort from all concerned District Elements. Operations Division is the lead element responsible for administering and implementing the Public Safety Program. The supporting elements are the Safety and Occupational Health Office, Natural Resources Office, Public Affairs Office, Office of Counsel, and Real Estate Division.

a. Operations Division and Natural Resources Offices.

(1) Operations Division will create an attitude of top management support for the Public Safety Program.

(2) Develop a water safety presentation at projects that are directly responsible for Lake Management. The presentations should be given quarterly and directed primarily towards school children. Other entities may consist of civic organizations, and project campgrounds.

(3) Display water safety posters, publish water safety articles in the local newspaper(s), coordinate with local television and radio stations to promote water safety, sponsor boating and swimming safety activities at the project and malls.

(4) Provide instruction and training for project managers and rangers in water safety program management.

(5) Develop, implement, and execute procedures for safe swimming, wading and boat launching.

(6) Marina operators should be encouraged to help promote and support the Public Safety Plan.

(7) Solicit support from agencies that have an active interest in water safety such as the American Red Cross, Coast Guard, State Rescue Squads, and Local Law Enforcement Officials.

(8) Establish and organize a District Water Safety Council.

(9) Improve swimming and wading areas to minimize, or eliminate hazardous conditions. Warning signs should be posted to identify hazards noted and not corrected.

(10) Develop a system to measure types of water safety activities conducted by the project. Discuss these activities at the water safety council meeting.

(11) Partner with the Arkansas Fish and Game Commission, Missouri Department of Conservation, U.S. Coast Guard, and American Red Cross, to promote recreational water safety activities.

(12) Conduct Lake Patrols on waterways that are identified as the U.S. Army Corps of Engineers responsibility. The water patrols should emphasize the importance of safe boating and swimming habits, while practicing personal safety at all times.

(13) Develop, procure, and distribute water safety program materials.

b. Safety and Occupational Health Office.

(1) Assist Little Rock District elements in organizing, directing and measuring the effectiveness of the water safety program.

(2) Keep the District elements aware of the latest developments in public safety regulations.

(3) Participate as a member of the District local water safety council.

(4) Monitor implementation of the water safety
Programs.

(5) Conduct safety surveys of public use areas.

(6) Review contract plans and specifications of public use areas for safety regulatory compliance.

(7) Oversight of development, procurement and distribution of water safety program promotional materials.

(8) Maintain office files of public fatalities.

c. Planning, Environmental and Regulatory Division.

(1) Plan and develop recreation facilities in a manner conducive to public enjoyment and safety

(2) Assure the recreation sites are developed with safe shorelines.

(3) Plan for safe shoreline vehicle access that will prevent accidental entrance into the water.

d. Engineering and Construction Division.

(1) Design recreational facilities for public use in a manner to reduce fatalities.

(2) Ensure safe shorelines for members of the public who use the District parks and recreational facilities.

(3) Review marina concessionaire development plans and design specifications to assure compliance with current design criteria.

(4) Design boat launch facilities to provide safe boarding access.

(5) Assure launch ramps are planned, designed, and implemented which will eliminate or reduce visitors from accidentally driving into the waterways.

e. Office of Counsel.

(1) Provide legal research in determining District liability for public fatalities and injuries.

(2) Advise on posted caution and warning hazard signs for members of the public for accuracy and adequacy.

(3) Prior to awarding contracts, ensure safety provisions are included and enforceable.

f. Public Affairs Office.

(1) Voting member of the District Water Safety Committee.

(2) Monitors and supports community activities and opportunities to promote water safety.

(3) Promotes water safety by publishing water safety articles in the District informational news bulletin.

(4) Issues water safety public service announcements (PSA) to television and radio stations. The announcements may specifically target expected high visitation events, holidays or excessive hot weather.

(5) Assist project offices by promoting water safety through local news releases.

(6) The District point of contact for planned water safety events that involve members of the public.

(7) The point of contact for media in the event of high visibility water related fatality.

g. Real Estate.

(1) Prepare marina concession contracts that will enforce environmental and personal safety standards that meet regulatory guidelines.

(2) Ensure safety regulations are met during marina concession compliance inspections.

4. Training.

a. Annual water safety training should be provided for Safety Office, Operations, Natural Resources, and Public Affairs employees responsible for executing the public water safety program.

b. District employees, administering and executing the water safety program, shall attend either the National Water Safety Congress or the National Safe Boating Congress.

APPENDIX J

Safety Awards Program

1. Purpose. The purpose of the safety awards program is to recognize employees, teams, offices, and contractors, which demonstrate excellence and dedication in their integration and performance of safety throughout the course of their work.

2. Nominations. Each nomination for Corps employees will consist of a DA Form 1256 and a narrative justification explaining why the nominee warrants special recognition. The Safety Awards Committee will review all nominations, and their recommendations forwarded to the District Engineer for approval. Employees may also be nominated for individual cash awards of $250. This information should be included on the DA Form 1256.

3. Responsibilities.

a. Supervisors, team leaders, and operations managers are responsible for forwarding all safety awards nominations to the Chief of Safety and Occupational Health.

b. Contract office representatives and administrative contracting officers, are responsible for the preparation of contractor nomination packages.

c. Contractor nomination packages should be sent to the Construction Branch by 1 December of each year, with subsequent review by the E&C Division and Safety Awards Committee.

d. The District Engineer is responsible for presenting all Safety Awards

4. Procedures for Nomination.

a. Nomination of Corps of Engineer Employees:

(1) Complete DA form 1256

(2) Write a narrative justification explaining why the nominee warrants special recognition

(3) Forward DA form 1256 and the narrative justification to the Chief of Safety

(4) The Safety Awards Committee will then review all nominations and make recommendations for awards

(5) All recommendations will be forwarded to the Awards Administrator for processing for presentation by the District Engineer

b. Nomination of Contractors:

(1) Complete contractor nomination package consisting of:

- Amount of FY construction or work placement
- Statement that there were no lost-time accidents during the FY
- Statement that other contractor requirements are satisfactory
- Any special mention of safety accomplishments

(2) Forward construction contractor nomination packages to the Construction Branch, by 1 December of each FY.

(3) Forward all other contractor nomination packages to the Chief of Safety

(4) The Safety Awards Committee and construction branch will then review all nomination packages and make recommendations for awards

(5) All recommendations will be forwarded to the Awards Administrator for processing for presentation by the District Engineer

5. Awards.

a. Individual Safety Awards. Employees aspiring to this award will receive a Certificate of Achievement. This award is recommended for employees that have made an outstanding contribution in the field of safety at their work place. Possible areas of contribution are as follows:

- The employee's actions resulted in the elimination of unsafe conditions or worker behavior.
- The employee demonstrated due diligence in the use of personal protective equipment during their work involving hazardous activities.
- The employee actively participated in all functions of the safety and occupational health program at their facility or project.
- The employee participated in the safety suggestion program.
- The employee consistently performed their daily work duties in a safe manner.

b. Lifesaving Award. The Life Saving Award is given to employees or members of the general public in special recognition of heroic efforts portrayed during attempts to save a life. When nominating individuals for this award, a statement should be attached to the DA Form 1256 describing the events of the incident resulting in the nomination.

c. Commander's Safety Award. The Commander's Safety Award, presented at the Engineer Day Awards Ceremony, is reserved for employees, teams, offices, or projects that have performed well above the normal requirements in the integration of safety program elements within their daily work. Areas of consideration when presenting nominations are as follows:

- Collateral duty safety officer has been appointed for the office and received appropriate training
- Safety meetings are conducted on a regular basis
- Employees are afforded the opportunity to attend safety training courses, first aid, CPR, fall protection, etc.
- Safety training is properly documented with subjects, dates, trainer's signatures, and equipment furnished
- The Collateral duty safety officer conducts quarterly safety inspections, including written reports
- The facility has a written safety plan
- The facility or project has sustained no preventable lost time accidents
- The facility or project has an exemplary driving record with all employees completing the defensive driving course
- An individual has carried out supervisory safety duties in an outstanding manner setting an example of achievement for others
- An individual has demonstrated initiative and skill in devising new or improved engineering controls, operating procedures, or safe work practices that improved the safety and health of the workforce.
- An individual demonstrated courage and competence in an emergency, while performing assigned duties which protected the health and well being of fellow employees or the general public

d. Safe Driving Awards. The Safe Driving Award Certificate is reserved those special employees that operate a motor vehicle 7,500 miles or more within a calendar year without sustaining a recordable accident. Also projects, which achieve more than one consecutive year with no automotive accidents, are eligible for the Multi-Year Safe Driving Award.

e. Hard Hat Sticker Safety Award. Employees required to wear a hard hat during the course their job duties, not sustaining a lost-time accident in the present calendar year, are

eligible for the Hard Hat Sticker Safety Award. This award is a vinyl adhesive-backed sticker with the Corps logo; U. S. Army Corps of Engineers, Little Rock District, and the noted number of years without a lost-time injury or accident. The Safety and Occupational Health Office issues this award. The immediate supervisor is responsible for requesting the award earned by their assigned employee.

6. Contractor Safety Awards.

a. District Safety Contractor of the Year. There will be 2 categories for this honor: Contracts over $500,000 and those under $500,000. Construction contract office representatives (COR) and administrative contracting officers (ACO), should prepare contractor nomination packages for submission to the Construction Branch by 1 December of each year. The E&C Division and Safety Awards Committee will review packages, with winners receiving a Safety Plaque. One contractor will be selected overall as the SWL nomination for Division (SWD) Safety Contractor of the Year. The Division will review all the Districts' nominations and select one for worldwide Corps of Engineer competition, as Safety Contractor of the Year.

Selection Criteria:

- Construction contract must have been completed during the fiscal year
- DD Form 2626, Contractor evaluation must indicate "outstanding" in all safety elements
- Nominating official should consider the extended number of employee hours or days worked without a loss time accident or other serious accident
- Consider the extraordinary low frequency of severity rates achieved while performing high hazard work
- Consider demonstrated excellence in the management or initiatives of company safety and occupational health programs as demonstrated by a continuing downward trend in the number of accidents, injuries, and/or illnesses
- Consider other achievements in the field of safety and occupational health, which are worthy of command recognition

b. Superior Safety Awareness/Record Award. The contractor earning this award will receive a Safety Certificate. The field office providing oversight for a construction project shall review the contractor's safety record at the end of the FY and advise the Construction Brach of any deserving contractors. The field office should submit the nomination memo within 60 days after the end of the FY. The Construction Branch will coordinate with the Safety Office to review the record of the nominated contractor and issue the Safety Certificate award for the deserving contractor.

Selection Criteria:

- Minimum of $100,000 construction placement during the fiscal year (FY).
- No lost-time accidents during the FY.
- Other contract requirements are judged to be satisfactory or above

7. Safety Acknowledgements Program. The safety acknowledgements program will serve as a beneficial enhancement of the organizational safety program. On the Spot Safety Acknowledgements may be given to an employee for correcting safety hazards, demonstrating enthusiasm in the incorporation of safety into their daily work practices, or timely resourcefulness in abating unsafe working conditions. The On the Spot Safety Acknowledgements are usually presented by the immediate supervisor or the Chief of the Safety and Occupational Health Office. Safety Acknowledgements can take the form of certificates, stickers, or any other item deemed appropriate by the supervisor to recognize outstanding individual performance.

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APPENDIX K

Ergonomics

1. Purpose. To identify and control workplace ergonomic hazards and musculoskeletal injury and illness. It is of utmost importance to reduce the potential for fatigue, error, and unsafe acts by adapting the job and workplace to the worker's capabilities and limitations.

2. Application. This program applies to all Little Rock District employees, full-time permanent, temporary and part-time personnel.

3. General Policy.

a. The District ergonomic program will focus on the identification and control of improper workplace and work process designs, to protect personnel from injury and illness due to exposure to occupational risk factors. Ergonomic considerations shall be fully addressed in all USACE missions and workplaces. Contractor ergonomic requirements will be thoroughly evaluated as explained in the EM 385-1-1 upon presentation of their written safety plan to the Safety and Occupational Health Office (SOHO).

b. Work activities that require workers to conduct lifting, handling, or carrying, rapid and frequent application of high grasping forces, repetitive hand/arm manipulations, tasks that include continuous, intermittent, impulsive, or impact hand-arm vibration or whole body vibration, and other physical activities that stress the body's capabilities, shall be evaluated to ensure the activities are designed to match the capabilities of the workers.

c. When work activities that stress the body's capabilities are identified, the employer shall incorporate them in the appropriate activity hazard analysis. The analysis shall identify hazards associated with such work activities, isolate causative factors, and recommend controls to be implemented. Workers performing such activities shall be trained as part of their general indoctrination training for the position.

4. Responsibilities.

a. Safety and Occupational Health office (SOHO)

(1) The District industrial hygienist (IH) shall develop and implement the Command written Ergonomics program. This program must include a protocol for early recognition, evaluation, follow-up, and treatment, of work related musculoskeletal disorders among Little Rock District employees and contractors.

(2) The IH shall conduct ergonomic workplace assessments as a part of the industrial hygiene surveys carried out at all District facilities.

(3) The IH shall provide guidance for the reduction and elimination of ergonomic hazards through process elimination, engineering controls, substitution of equipment, and change in work practices.

(4) Upon request, the IH shall perform assessments of problematic work areas, with the purpose of identifying, controlling, and abating any existing ergonomic hazards.

(5) The SOHO shall coordinate ergonomics training and education for all District personnel.

b. Logistics Management Office.

(1) Ensure the integration of ergonomic considerations into the purchase of new equipment.

(2) Implement recommendations from IH to reduce ergonomic risk factors.

(3) Consults with IH to assist in the evaluation of equipment and furniture for ergonomic design.

c. Project and Operations Managers, Supervisors and Team Leaders

(1) Follow and implement all provisions of District Ergonomics program. Project Managers and supervisors should ensure all personnel recognize and report all work related musculoskeletal disorders and ergonomic hazards.

(2) Develop ergonomic safe work practices for inclusion into activity hazard analyses, incorporating methods to reduce or eliminate ergonomic risk factors. (See Sect. 5b)

(3) Coordinate with the District IH in the recognition and correction of hazardous ergonomic work practices, and report early symptoms of potential work related musculoskeletal disorders among employees.

(4) Maintain effective schedules for facility, equipment, and tool maintenance, adjustments, and modifications.

(5) Inform employees of their benefits and responsibilities provided by the AR 690-800, chapter 810, subchapter 6.

d. Employees

(1) Modify work practices as recommended.

(2) Notify supervisors of ergonomic risk factors in the workplace.

(3) Recognize and report early symptoms of work related musculoskeletal disorders.

(4) Participate when ever required in the medical surveillance program.

(5) Perform recommended conditioning and stretching activities.

(6) Offer suggestions to the SOHO for reduction and elimination of ergonomic hazards.

(7) Routinely review work areas, tasks, and tools for potential ergonomic risk factors.

5. The 5 Elements of the District Ergonomics Program.

a. Worksite analysis. Work areas and job tasks will be studied to determine if they involve any of the following occupational ergonomic risk factors:

- Repetitive motions (especially during prolonged activities)
- Sustained or awkward postures
- Excessive bending or twisting of the wrist
- Continued elbow or shoulder elevation (overhead work)
- Forceful exertions (especially in an awkward posture)
- Excessive use of small muscle groups (pinch grip)
- Vibration
- Mechanical compression
- Restrictive workstations (inadequate clearance, improper height of desk, improper height and angle of monitor)
- Improper seating or support
- Inappropriate hand tools
- Extreme temperatures
- Extended exposure to hazardous or annoying noise

b. Hazard prevention and control. The IH will make employees and supervisors ware of the ergonomic hazards present in their specific job tasks such as lifting, working above ones head, and stooping to work in awkward positions. The IH will assist office

workers in the organization and setup of their workspace, in order to control the ergonomic hazards commonly encountered while working in small office spaces. The primary method of preventing and controlling exposure to work related ergonomic hazards is through effective design (or redesign) of a job or worksite. The following are intervention methods for controlling ergonomic hazards, listed in order of their priority.

(1) Process Elimination. Elimination of the demanding process essentially eradicates the ergonomic hazard.

(2) Engineering Controls. Ergonomic engineering controls redesign the equipment or worksite to fit the limitations and capabilities of the workers.

(3) Substitution. Substituting a new work process or tool, not possessing ergonomic hazards, for a work process with identified musculoskeletal hazards, can effectively eliminate the hazard.

(4) Change in Work Practices. Practices that decrease worker exposure to ergonomic risk factors include changing work techniques, providing personal conditioning programs, and maintenance, adjustment, and modification of equipment and tools as needed.

(5) Administrative Controls. Use administrative controls to limit the duration, frequency, and severity of exposure to ergonomic hazards.

(6) Personal Protective Equipment. Appliances such as wrist rests, back belts, back braces, etc are not considered PPE. Before purchasing or using PPE to reduce ergonomic hazards, please discuss their effectiveness, application, and personal use with the IH.

c. Health Care Management. The IH will consult with Health Care personnel to assist in the early recognition, evaluation, and treatment, of musculoskeletal disorders. Early recognition and health care management of musculoskeletal disorders is critical in reducing the impact of injury on the employee. Annual IH surveys of all District facilities and periodic review of the many different job tasks performed throughout the District will be the key methods used in the early recognition of musculoskeletal ergonomic hazards and disorders.

d. Education and Training. The IH must be trained by ergonomics experts, and receive at least 40 hours of formal ergonomics training. The IH will then train others such as supervisors, team leaders, and employees in the recognition and control of the ergonomic hazards in the work area and in the performance of specific job tasks. The IH should include the following items in all ergonomics training:

(1) Potential risks of musculoskeletal disorders

(2) Possible causes and symptoms

(3) How to recognize and report symptoms

(4) Means of preventing musculoskeletal disorders

(5) Sources of treatment for musculoskeletal disorders

e. Ergonomics program evaluation. An annual report should be prepared for the SOHO Chief by the IH on the progress and state of the ergonomics program.

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APPENDIX L

Industrial Hygiene Program

1. Purpose. The industrial hygiene program is devoted to the anticipation, recognition, evaluation, and control of those occupational hazards and stressors, arising in and from the workplace that may cause sickness, and impaired health and well-being.

2. Application. This program applies to all Little Rock District employees, contractors and public visitors.

3. Responsibility.

a. The Safety and Occupational Health Office is responsible for the development, implementation, and review of the industrial hygiene program.

b. Managers and Supervisors have the responsibility of administering this program at their site.

c. Employees, contractors, and pubic visitors are responsible for complying with all elements of the industrial hygiene program as they apply to them.

4. Industrial Hygiene Surveys:

Industrial Hygiene Surveys will be conducted to identify chemical, physical, biological, acoustical, and ergonomic hazards within the projects. The survey involves a review of the grounds and an assessment of the activities, which take place there. After reviewing the activities of the workers in their occupational settings, the hazards associated with the job functions will be described. Recommendations to protect the worker will be made such as Personal Protective Equipment, ergonomic adjustments to the work area, adjustments to SOP's to reduce occupational exposure to chemicals, noise or heat, or even improved engineering controls. The sole purpose of the industrial hygiene survey is to determine the occupational risks to the worker, and to control and manage those risks.

5. Industrial Hygiene Program Elements:

a. Respiratory Protection Program. A review of District worksites and special jobs will be conducted to determine if there is a need for respiratory protection. Medical surveillance requirements, respirator selection, and proper usage and fit-testing of the equipment will be addressed in the development of a written, site specific, Respiratory Protection Program.

b. Hazard Communication Program. Through this program, assistance will be provided to the projects in the writing and implementation of their own written Hazard Communication programs, tailored to the specific work performed at their facilities. This program includes provisions for training and documentation, MSDS posting, development of chemical inventories, and container labeling. Upon request, the IH will review special projects, and future COE jobs to ensure all parts of a necessary Hazard communication program have been addressed. The goal of this program is to make workers aware of the chemical and material hazards in their work area, and the protective measures they must undertake to minimize the risk of chemical exposures.

c. Hearing Conservation Program. Noise monitoring will be conducted at each facility to determine if there is a need for hearing protection. This information will be used to assist the projects in implementing a Hearing Conservation Program. The programs will incorporate provisions for hearing protection usage, designation of hazardous noise areas, list of employees included in the Hearing Conservation Program, and audiometric testing schedules.

d. Medical Surveillance Program. Through this program, occupational health physicals will be provided to the employees, that are identified by the IH surveys, as being exposed to occupational hazards that may cause impaired health and well-being. The IH will provide guidance to ensure those individuals exposed to toxic substances, such as lead and asbestos are provided the additional medical services needed for personal health management.

e. Confined Space Entry Program. The purpose of this program is to assist project managers in the identification and management of All confined spaces at their facilities. The IH will assist the projects in the development and implementation of their own comprehensive written Confined Space Programs. This comprehensive program is recommended due to the unique nature of work within park facilities, locks and dams, and hydroelectric plants. This program will incorporate all the elements of a Permit-Required Confined Space Program, but will additionally address items unique to the above listed facilities.

f. Personal Protective Equipment and Clothing (PPE). The need for PPE will be determined through the IH surveys and material safety data sheets (MSDS). Appropriate PPE, and accompanying training will be recommended for those activities presenting hazards that can not be mitigated through the use of engineering controls, or through the alteration of standard operating procedures.

g. Project Design Review and Hazardous and Toxic Materials Program. Upon request, the IH will review contracts and scopes of work for special projects, to ensure that toxic substances are being properly controlled (during removal or application) in the

workplace, and that contractors have made provisions for their own medical surveillance program as outline by OSHA. Contractor and COE work procedures, hazard control methods (engineering and personal), and air monitoring strategies will be reviewed for occupational health compliance.

h. Ergonomics. The District ergonomics program will focus on the identification and control of improper workplace and work process designs, to protect personnel from injury and illness due to exposure to occupational risk factors. Ergonomic considerations shall be fully addressed in all USACE missions and workplaces. Contractor ergonomic requirements will be thoroughly evaluated as explained in the EM 385-1-1 upon presentation of their written safety plan to the Safety and Occupational Health Office (SOHO).

6. References. EM 385-1-1, 29 CFR 1910, 29 CFR 1926

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APPENDIX M

Hazard Communication Program

1. Purpose. The purpose of the Hazard Communication Program is to effectively inform Corps of Engineer employee of all existing and potential chemical hazards in the workplace.

2. Application. This program applies to all Little Rock District employees, contractors, and authorized visitors, which may be potentially exposed to chemicals known to be present in the workplace.

3. Responsibilities.

a. The Safety and Occupational Health Office

(1) Organization, implement, and review the Little Rock District Hazard Communication Program.

(2) Assist the contracting division in the review of contractor proposed hazard communication programs, to ensure their compliance with Federal Occupational Safety and Health Regulations and applicable state regulations.

(3) Assist project and operations managers in the development of facility specific written Hazard Communication Programs, training needs, and review of proposed and existing engineering controls.

b. Operations and Project Managers must develop, implement, and maintain, at each worksite, a written comprehensive hazard communication program (HAZCOM) that includes provisions for the following:

- Chemical Inventory (List of all hazardous chemicals at the worksite)
- Collection and Posting of Material Safety Data sheets (MSDS) for all hazardous chemicals at the worksite
- Container Labeling
- Federal Hazard Communication Training

Six Simple Steps to Developing a Written Hazard Communication Program

Step 1.

Purpose.

a. State the purpose of your HAZCOM program
b. Explain to whom the program will apply.
c. Explain the responsibilities of your workers and supervisors in your HAZCOM Program.

Step 2.

Chemical Inventory.

Make a list of all your hazardous chemicals at the worksite. If drinking, eating, inhaling, or rubbing the chemical or material on your skin could cause problems, include it in your list. Items to include: oils, solvents, acids, antifreeze, flammables, epoxies, combustibles, paints, pesticides, urethanes, thinners, insecticides, herbicides, polishes, degreasers, undercoatings. Oh just include everything, except your lunch. (See the Attached Example)

Step 3.

Labeling.

Your written plan should state how you will ensure all containers are properly labeled. Reviewing the labels during the chemical inventory is one way. A container is any bag, barrel, bottle, can, cylinder, drum, reaction vessel, storage tank, or the like. No quantity restrictions. Replace any worn or unreadable labels.

Step 4

MSDS.

a. Collect an MSDS for all chemicals in your inventory.
b. Post the MSDS where ever the chemical is used or stored.
c. Keep a master set of all MSDS's in the First-Aid room and facility office.
d. Include where the sheets are posted in your written plan.
e. Always ask for an MSDS whenever you purchase a chemical, even household cleaners.

Step 5.

Training.

All workers should be provided with documented training on the Federal Hazard Communication Program. This training includes:

a. Requirements of the OSHA 1910.1200 HAZCOM Standard
b. Location of MSDS and Written HAZCOM Program
c. The physical and health hazards of chemicals in the work area.
d. Measures the workers can take to protect themselves
e. Procedures used to protect workers from chemicals: SOP's, engineering controls, good work practices, and PPE
f. Methods the worker can use to detect specific chemicals in the work area: visual appearance, odor, vapor
g. Hazards associated with chemicals in unlabeled pipes.
h. Means the employer will use to inform workers of the hazards of nonroutine tasks, such as work in a confined space.

Step 6

Notice to Contractors.

Your written plan should include the means by which a contractor will be informed about the site, Corps of Engineer HAZCOM program, and the potential for exposure to hazardous chemicals or materials, while performing their work. 29 CFR 1910.1200(e)(2)

HAZARD COMMUNICATIONS TRAINING

4 Jun 01

Date:

The following employee has received the required **Hazard Communications training as outlined in the 29 CFR 1910.1200(h), which included:**

* Requirements of the OSHA 1910.1200 HAZCOM Standard
* Location of MSDS and written HAZCOM Program
* The physical and health hazards of chemicals in the work area.
* Measures the workers can take to protect themselves.
* Procedures used to protect workers from chemicals: SOP's, engineering controls, good work practices and PPE.
* Methods the worker can use to detect specific chemicals in the work area: visual appearance, odor, vapor.
* Hazards associated with chemicals in unlabeled pipes.
* Means the employer will use to inform workers of the hazards of nonroutine tasks, such as work in confined spaces.

Chemicals reviewed during training:

Signature of Trainer: _____

Signature of Operations Manager: _____

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APPENDIX N

Confined Space Program

1. Purpose. To ensure the protection of all Little Rock District employees and contractors involved in confined space work, through the establishment of requirements for confined space programs, practices, and procedures.

2. Applicability. The requirements of this program apply to all Little Rock District employees and contractors, which may be required to enter confined spaces at the workplace. Contract personnel working for the Little Rock District will be required to develop and implement a confined space entry program, which at a minimum meets the requirements described within the District confined space program.

3. Responsibilities.

a. The Safety and Occupational Office

(1) Evaluate each worksite to determine if any confined spaces, permit required or otherwise, are present. If confined spaces are present, the Safety and Occupational Office shall ensure that proper signs are in places.

(2) Assist the project and operations managers in the development of facility and worksite specific written confined space programs and training.

(3) Conduct reviews and provide over site of all site specific confined space programs in the District

(4) The Safety and Occupational Office shall review all safety plans, activity hazard analyses, and written confined space programs for ALL contractors performing confined space work at any Little Rock District facility. This includes work within permit-required confined spaces and non-permit required confined spaces.

b. Project and Operations Managers, Supervisors and Team Leaders

(1) Develop, and implement a written confined space program when confined permit, spaces are present at your facility and worksites, which meets the requirements outlined in the District confined space program, EM 385-1-1, and OSHA 29 CFR 1910.146.

(2) Ensure that all permits have been completed and local rescue service notified, prior to entry into permit-required confined spaces.

(3) Provide for the training of employees, and local rescue service in the identification, entry methods, and special hazards of the confined spaces at your site.

c. Employees

(1) Comply with all elements of the written site specific confined space program

(2) Actively participate in the identification of confined spaces at the worksite.

(3) Participate in all confined space training in an effort to clearly understand safe entry and work within confined spaces.

(4) Wear appropriate personal protective equipment, such as fall-protection, respirators, and hard hats when entering and performing work within confined spaces.

(5) ALWAYS NOTIFY A SUPERVISOR PRIOR TO ENTRY INTO ANY CONFINED SPACE AND ENSURE A MEANS OF CONSTANT COMMUNICATION AND EMERGENCY EXIT ARE PRESENT.

4. General Requirements For ALL Confined Spaces

a. Classification of Confined Spaces. The Safety and Occupational Office, with the assistance of supervisors and employees, will evaluate each worksite to determine if any confined spaces, permit required or otherwise, are present. The permit-required confined space decision flow chart illustrated in the 29 CFR 1910.146 (See Enclosure 1) should be reviewed at this time.

(1) A Confined space means a space that is large enough and so configured that an employee can bodily enter and perform assigned work. A confined space has limited or restricted means for entry or exit. A confined space is not designed for continuous employee occupancy. Examples of confined spaces are tanks, turbine shafts, silos, storage bins, vaults, and pits.

(2) A "Permit-required confined space" is a confined space that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward; or
- Contains any other recognized serious safety or health hazard.

b. Lockout/Tagout. The supervisor must ensure, for all Corps of Engineer employee, and contractor confined space entries, that all applicable provisions of the site-specific Lockout/tagout program, and the OSHA 29 CFR 1910.147 Lockout/Tagout standard have been carried out prior to entry, to ensure that all potentially hazardous equipment within the confined space cannot be accidentally activated.

c. Contractor Work in Confined Spaces. When contractors are to perform work in permit spaces, the supervisor or contracting officer representative (COR) shall do all the following:

- Inform the contractor that the workplace contains permit spaces, and that permit space entry is allowed only through compliance with a permit-required confined space program, meeting the requirements of the District Safety regulation, the EM 385-1-1, and the 29 CFR 1910.146.
- Explain to the contractor the hazards already experienced with the permit spaces.
- Describe any precautions or procedures implemented for the protection of the employees.
- Coordinate entry operations with the contractor, when both the Corps of Engineer employees and contractors will be working in or near the permit spaces.
- Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in the permit space during entry operations.

d. Training. No person shall be required or permitted to enter a confined space until they have been trained in the hazards associated with confined space entry. Training will be conducted by a competent person under the direction of the Safety and Occupational Health Office. The following items shall be addressed in the confined space entry training program.

- Hazard recognition
- Signs and symptoms of exposure
- Entry/exit procedures
- Personal protective equipment
- Rescue/emergency procedures
- First aid/CPR overview
- Lockout/tagout and energy control
- Communication
- Monitoring
- Heat stress recognition and prevention
- Respiratory protection
- Safety and health hazard recognition

e. Confined Space Placarding. Signs shall be posted on the outside of ALL identified confined spaces, within all Little Rock District facilities and on construction sites, managed by the Little Rock District, which require routine or periodic entry. The signs shall notify

employees of the hazards present within the space, that entry is not authorized without meeting entry requirements, as explained in this appendix, and without prior supervisor approval. If there are permit-required confined spaces in the workplace, the supervisor must inform exposed employees of the existence, location, and danger posed by the spaces. This can be accomplished by posting danger signs or placards stating:

DANGER
PERMIT-REQUIRED CONFINED SPACE
NO UNAUTHORIZED ENTRANTS

f. Prevention of Unauthorized Entry. If employees are not to enter and work in the permit-required confined spaces (permit spaces), then supervisors must take effective measures, to lock or secure the space, to prevent unauthorized employee entry.

g. Supervisor Notification. Prior to entry into any confined space, the employee shall notify his or her supervisor, and the supervisor shall ensure that there is a constant means of communication and an adequate means of emergency exit before allowing the employee to enter into the space. The Corps of Engineer supervisor should notify, prior to entry, the local rescue service whenever employees or contractors enter into a permit required confined space.

5. Procedures for Work in Low Hazard Permit Confined Spaces.

When it can be demonstrated, through monitoring and inspection data that the only hazard posed by the confined space is an actual or potential hazardous atmosphere, and it can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the confined space safe for entry, the following confined space entry procedures shall be followed:

a. When entrance covers for confined spaces are removed, the opening shall be promptly guarded by a barrier to prevent accidental falls through the opening, and that will protect employees working in the space from foreign objects entering the space.

b. Before an employee enters any confined space, the atmosphere shall be tested with a calibrated direct-reading instrument for the following: Oxygen content, flammable gases and vapors, potential toxic air contaminants. There may be no hazardous atmosphere within the space whenever any employee is inside the space.

c. The supervisor shall verify that the space is safe for entry and that the pre-entry measures required in 29 CFR 1910.146(c)(5)(ii) have been taken, through a written certification that contains the date, the location of the space, and the signature of the person providing the

certification. The certification shall be prepare before entry and shall be made available to each employee entering the space. It is recommended that an attendant be present when the employee is entering, working, and exiting the confined space.

d. Continuous forced air ventilation shall be used as follows: an employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere. The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space, and shall continue until all employees have left the space. The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.

e. The atmosphere within the space shall be periodically tested, during entry, to ensure that the continuous air ventilation is preventing the accumulation of hazardous atmosphere. If a hazardous atmosphere is detected during entry, each employee shall leave the space immediately.

6. Reclassification of a Permit Required Confined Spaces to a Non-permit Required Confined Space.

A confined space classified as a permit confined space may be reclassified as a non-permit confined space under the following conditions:

a. If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.

b. If it is necessary to enter the permit space to eliminate hazards, such entry shall be performed under the requirements of a written permit required confined space program as explained in this appendix. If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.

c. SPECIAL NOTE: Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards. Section 5 of this appendix covers permit space entry where the employer can demonstrate that forced air ventilation alone will control ALL hazards in the space. The supervisor shall document the basis for determining that all hazards in a permit space have been eliminated, through a written certification that contains the date, the location of the space, and the signature of the person making the determination.

d. When there are changes in the use or configuration of a non-permit required confined space, that might increase the hazards to entrants, the supervisor, and District industrial hygienist shall reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

Any confined space which has not been designated as a permit required confined space, as described above (sect. 4a(2)) will become a Permit-required confined space when a hazardous atmosphere is introduced as occurs during ALL welding operations. During welding operations within a confined space, even when forced air ventilation is provided, all requirements set forth in the written Permit-Required Confined space program must be met. {29 CFR 1910.146(c)(6)} A hot-work permit must also be completed.

7. Requirements for a Permit-Required Confined Space Program

The Operations Manger/supervisor who allows employee entry into permit spaces must develop and implement a written program, which includes provisions for the following:

a. Identification and evaluation of permit space hazards before allowing employee entry

b. Testing atmospheric conditions in the permit space before entry operations and atmospheric monitoring of the space during work activities for the following: oxygen content, combustible gases or vapors, and toxic gases or vapor

c. Necessary measures to prevent unauthorized entry

d. Establish and implement the means, procedures and practices for the following: acceptable entry conditions, electrically isolating the permit space (Lockout/Tagout), providing barriers, purging, making inert, flushing, or ventilating the permit space to eliminate or control hazards necessary for safe permit space entry operations

e. Identification of employee job duties: Authorized Entrant, Attendant, Entry Supervisor

f. Provide, maintain, and require, at no cost to the employee the use of personal protective equipment and any other equipment necessary for safe entry: testing and air monitoring equipment, ventilating equipment needed to obtain acceptable entry conditions, barriers and shields, communications equipment to facilitate attendant/entrant communications, lighting equipment, ladders, rescue and emergency equipment

g. Establish policy to ensure that at least one attendant is stationed outside the permit space for the duration of entry operations

h. Establish coordination procedures for entry operations when employees of more than one employer are to be working together in the permit confined space

i. Implement appropriate procedures for summoning rescue and emergency services.

8. Specific Permit Required Confined Space Entry Procedures.

a. General. A permit required confined space is one that is difficult to enter and exit; is not intended for occupancy except for repair or maintenance; presents potential serious hazards such as toxic, oxygen deficient, or flammable atmosphere; or involves engulfment or mechanical hazards. Such a confined space will require an attendant on duty while employees are within the space.

b. Entry Permit. Before employees enter a permit required confined space, as described in section 8(a) above, an entry permit (Enclosure 2) authorizing entry into the space must be completed by the supervisor. A new permit shall be completed at the start of each work shift, after extended breaks, and at any time a new material (such as solvents or paint) or work process (such as welding or grinding) are introduced into the space. The permit shall be clearly posted at the point of entry into the space.

c. Atmospheric Testing and Monitoring. Atmospheric testing and monitoring of the confined space shall be conducted prior to entry and continuously while the space is occupied for the following: Oxygen content, flammable gases and vapors, and other potential toxic air contaminants. Individuals operating the air monitor shall be trained, by the District industrial hygienist, in its operation and the interpretation of the results, to determine air quality conditions within the confined space. The air monitor shall be a direct reading, combination O_2/combustible gas meter, which can also monitor for Hydrogen Sulfide (H_2S), and carbon monoxide (CO). Equipment must be maintained, operated, and calibrated in accordance with manufacturers recommended procedures. All monitoring equipment must be factory approved for use in hazardous and flammable atmospheres.

d. Duties of Authorized Entrant's. Employees authorized by the supervisor to enter the permit-confined space should:

- Know the confined space hazards, including information on the mode of exposure (inhalation or dermal absorption), signs or symptoms, and consequences of the exposure.
- Use appropriate personal protective equipment properly (face and eye protection, and other barrier protection gloves, aprons, and coveralls)
- Maintain communication with attendants (radio, telephone, visual) to enable the attendant to monitor the entrant's status, as well as to alert the entrant to evacuate.
- Exit from the confined space as soon as possible when ordered by an authorized person, when the entrant recognizes the warnings signs or symptoms of exposure exist, when a prohibited condition exists, or when an automatic alarm is activated.
- Alert the attendant when a prohibited condition exists or when warning signs or symptoms of exposure exist

e. Duties of Attendants. Employees authorized by the supervisor to serve as confined space attendants should:

- Remain outside the permit confined space during entry operations unless relieved by another authorized attendant.
- Perform non-entry rescues (using a tripod retrieval system) when specified by employer's rescue procedure.
- Know existing and potential hazard, including information on the mode of exposure, signs or symptoms, consequences of the exposure, and their physiological effects.
- Maintain communication with and keep an accurate account of those workers entering the permit confined space.
- Order evacuation of the permit space when a prohibited condition exists, when a worker shows signs of physiological effects of hazard exposure, when an emergency outside the confined space exists and when the attendant cannot effectively and safely perform required duties.
- Summon rescue and other services during an emergency.
- Ensure that unauthorized persons stay away from permit spaces or exit immediately if they have entered the permit space.
- Inform authorized entrants and entry supervisor of entry of unauthorized persons.
- *Perform no other duties that interfere with the attendant's primary duties.

f. Duties of Entry Supervisor. The entry supervisor should:

- Know the confined space hazards including information on the mode of exposure, signs, symptoms, and consequences of exposure.
- Verify emergency plans and specified entry conditions such as permits, tests, procedures, and equipment before allowing entry.
- Terminate entry and cancel permits when entry operations are completed or if a new condition exists.
- Verify that rescue services are available and that the means for summoning them are operable.
- Take appropriate measures to remove unauthorized entrants.
- Ensure that entry operations remain consistent with the entry permit and that acceptable entry conditions are maintained.

9. Rescue and Emergency Services

a. Rescue procedures shall be specifically designed for each confined space and recorded on the entry permit. Minimum equipment required on site while the space is occupied shall consist of a full body harness with attached lifeline, a tripod, if the confined space is more than 5 feet deep, and a supplied air respirator or self contained breathing apparatus.

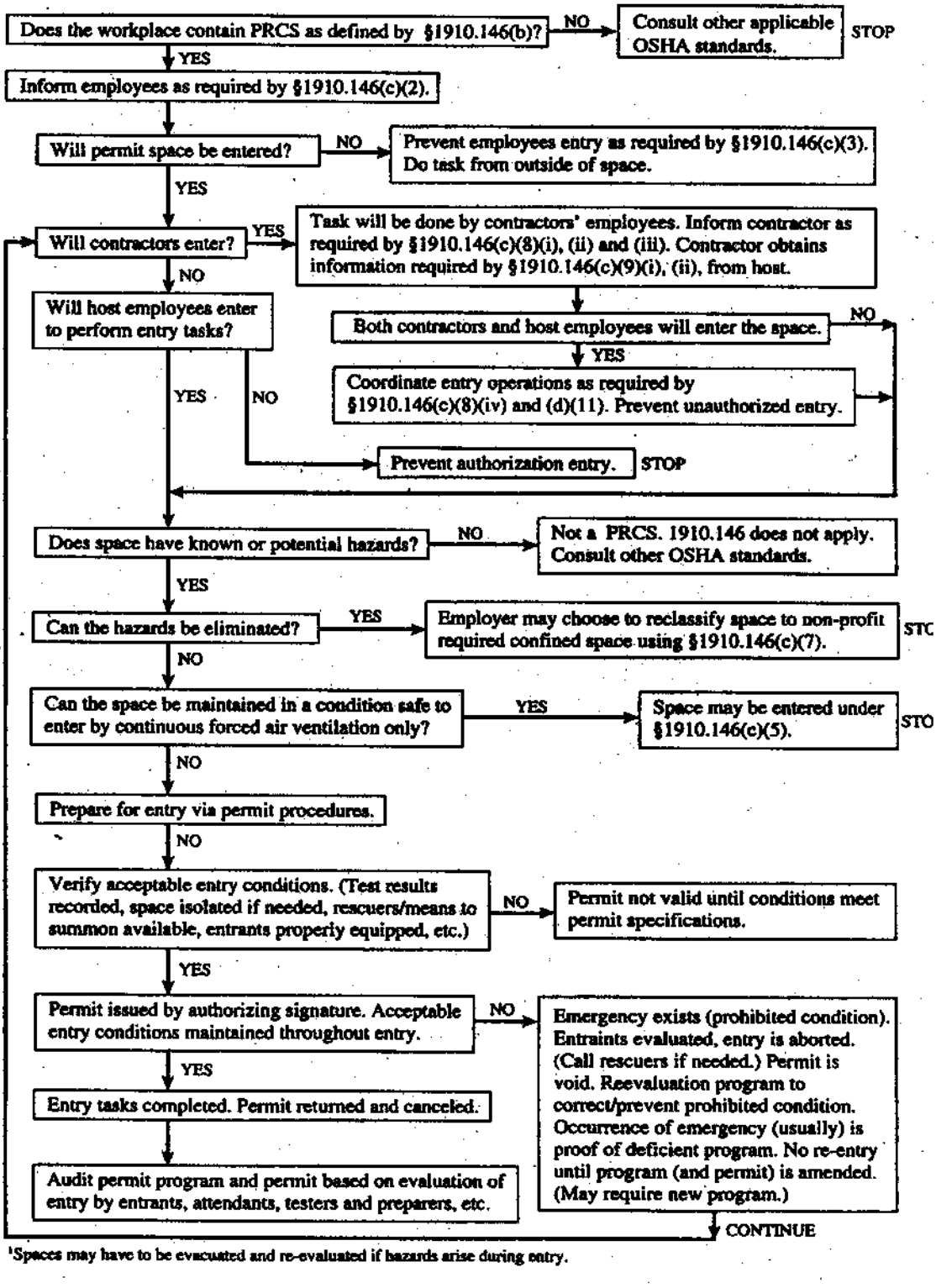
b. For projects that have Corps of Engineer employees entering permit spaces to perform rescue services, the operations/project managers shall ensure that rescue service personnel are provided with and trained in the proper use of personal protective and rescue equipment. The rescuers must be trained in first aid and cardiopulmonary resuscitation (CPR), and one member at least, must be certified in first aid and CPR. Practice rescue exercises must be performed yearly for Corps of Engineer designated rescue personnel.

c. For projects that opt to use local professional rescue services in the event of an emergency, practice rescue exercises must be performed yearly on site, and the rescue services shall be provided access to all permit spaces in order to practice rescue operations and formulate plans of action. The Operations/Project manager shall inform the rescue service of the hazards they may confront when called to perform a rescue at their facility, during the practice exercises.

d. To facilitate an emergency rescue, all employees entering the permit confined space shall wear a full body harness with a retrieval line attached to the ring at the center of their backs near shoulder level, or above the entrants head. The retrieval line shall be attached to a mechanical device (tripod retrieval system) or fixed point outside the permit space to enable quick rescue. A mechanical device shall be available to retrieve personnel from all vertical type permit spaces more than 5 feet (1.52 m) deep.

10. References. EM 385-1-1, 1996; OSHA 29 CFR 1910.146, Permit Required Confined Spaces; OSHA 29 CFR 1910.1200 Hazard Communication; ANSI Z117.1-1989, American National Standard, Safety Requirements for Confined Spaces.

Permit-Required Confined Space Decision Flow Chart



[1]Spaces may have to be evacuated and re-evaluated if hazards arise during entry.

CONFINED SPACE ENTRY PERMIT

4 Jun 01

Type and Location of Space:		Date:		Time Issued:	
Purpose of Entry:				Time Expires:	

Describe job and identify hazards associated with entry:

Preparation of		Drained		Flushed		Inerted		Purged		Ventilated		Barricaded									
Isolation of Space:		Lines disconnected & blank				Equipment locked out and tagged															
Attendant/Entrant Communication		Voice		Radio		Intercom		Phone-set		Hand-signals											
	Rope signals																				
Identify Protective Equipment Required:																					
Protective clothing (type)																					
	Full body harness with retrival line			Tripod retrieval system				Respirator (type)													
	Ear protection (type)							Eye protection (type)													

List any special equipment required to perform work: (ex. Welding gases, arc welder, scaffolding, grinding discs, cranes)

List any additional permits required to perform work: (ex. Hot work permit)

Air Monitoring

Oxygen 21-22% *		Combustibles <10% LEL*		CO <25ppm*		H2S <10ppm*	
Time	Results	Time	Results	Time	Results	Time	Results

Instrument Name & S/N: **Calibration date:**

Tester's Signature: ***Acceptable Entry**

Authorized entrants:

Attendant: **Entry Supervisor:**

Emergency Services:

Fire Dept: Phone #::

Ambulance Service: Phone #:

Supervisor Signature:

APPENDIX O

Medical Surveillance Program

1. Purpose. To promote and ensure employee health, and reduce risk of illness arising from occupational hazards. This program endeavors to remain in compliance with all Federal and DOD regulations governing the protection of employee health.

2. Application. This program applies to all Little Rock District employees, full-time permanent, temporary and part-time personnel.

3. Program Design. The four major components of the medical surveillance program are:

a. Exposure Awareness: Employee exposure to workplace hazards will be determined through IH surveys, development of position hazard analyses, and review of hazards involved in special projects.

b. Medical Examinations: Medical examinations and tests will be conducted and designed based on the employee's job duties, and hazards encountered during the performance of those duties.(See Section 5 for Inclusion Criteria)

c. Review of Medical Examination Results: The reviewing physician will analyze all the data generated in the tests and physical exam to make recommendations as to the employee's health and physical abilities as they pertain to his or her job. The reviewing physician may make recommendations for job restrictions based on test results. The reviewing physician will also offer opinion as to employee medical fitness for special job duties such as diving, operating a crane, or wearing a respirator. This information will be documented on the District "Medical Surveillance Report to the Employer" form.

d. Record Keeping: It is important to keep a continual medical record for each employee in the medical surveillance program. The current report and tests will build upon the employee's medical history and previous examination results and recommendations. Record keeping is a key factor in comparison of yearly audiogram results, chest x-ray review, and blood chemistry tracking of cardiac risk factors, hepatotoxicology, etc. A confidential medical record will be kept for each employee in the medical surveillance program at the District building. Medical files will be forwarded to, and stored with the Occupational Health Nurse within the Occupational Health Care Unit room 1116, in accordance with the Medical Privacy Act.

4. Responsibilities.

a. Safety and Occupational Health Office (SOHO)

(1) Provide management, guidance, and over site of District medical surveillance program.

(2) Direct the review of the medical surveillance programs as implemented at the project office level, to ensure compliance with all aspects of the District medical surveillance program, and all associated Federal regulations.

(3) The SOHO will provide recommendations for employee inclusion into the medical surveillance program, as well as review of Corps of Engineer medical providers. If a written recommendation, provided by the Safety and Occupational Health Office is not acted upon, a written response as to the reason, must be provided to the Chief of Safety and Occupational Health, by the Project or Operations manager.

(4) Ensure that all Project and Operations managers, as well as medical providers working with the District, are made aware of all OSHA and DOD regulations governing the requirements of Corps of Engineer physicals. The requirements for equipment and personnel used in the administration of those physicals shall comply with all Federal regulations. The Safety and Occupational Health Office shall make every effort to assist medical providers in their efforts to meet Federal regulations in the administration of Corps of Engineer physicals.

(5) Ensure a confidential medical record is stored within the District's Occupational Health Care Unit, for each individual in the medical surveillance program.

b. Project and Operations Managers

(1) Implement all requirements of the SWLR District Medical Surveillance Program within their various worksites, and schedule all medical physicals.

(2) Coordinate with District industrial hygienist (IH) in the update of medical exams and their requirements as outlined for each job (See Section 6), medical provider review, and storage of medical records. An update of employees in the medical surveillance program should be provided to the District industrial hygienist annually from each worksite.

c. Employees.

(1) Employees are responsible for complying with all elements of the District medical surveillance program as they apply to them.

(2) Employees shall comply with all Federal and DOD regulations governing the medical surveillance requirements for exposure to chemicals or other physical agents encountered in the course of their job duties.

5. Inclusion Criteria. (See Section 6b for specific jobs)

a. Employees are included when their work with or around chemical, biological, physical, or acoustical hazards is of sufficient duration and concentration that physiological damage could occur.

b. Employees will be included based on their job duties or special projects or when physical examinations are required by Federal Regulations.

c. Employees will also be included into the medical surveillance program if their exposure to hazardous substances exceeds the Action Level, or they are required to work in a noise hazardous area.

d. Employees working with a substance, which has a Permissible Exposure Limit with a ceiling designation, a concentration which shall not be exceeded, or the chemical being used is a regulated compound, will be included in the medical surveillance program, regardless of the duration of exposure.

e. Employees will be included, when medical examinations are required for their job. For example: mechanics & welders-respiratory protection and hazardous substance exposure, divers-medical clearance to dive, rangers-bloodborne pathogen immunization, heavy equipment operator-DOT medical clearance, facility maintenance inspector-hazardous substance exposure, crane operator-medical clearance to operate crane.

f. Medical examinations may be conducted for employees when, in the opinion of the Safety and Occupational Health Office, or Personnel Office, a medical examination is required to protect the health of the employee.

6. Medical Examinations.

a. Although additional medical tests will be required as determined by the employee's job description, position hazard analysis, and Federal Regulations, a Basic Medical Examination for all individuals in the medical surveillance program shall contain

the following elements:

Basic Medical Examination (BME)

(1) Medical History Questionnaire (Update each year)
(2) General Physical Examination
(3) Height, Weight, Resting Blood Pressure
(4) Vision Test, including Tonometry for Glaucoma
(5) Audiometry (hearing test)
(6) Electrocardiogram (resting 12 lead)
(7) Blood Chemistry (SMAC24) with Urinalysis, to include: Liver Function Enzyme Screen , Complete Blood Count (CBC), Cholesterol Screen (TCHOL, Trig, HDL, LDL, CALC), Electrolyte Analysis (Na, Cl, Ca, BUN, Glucose, Creatinine, total protein)

b. Medical Exam Requirements and tests for each job:

Divers. (Annual)

1. Basic medical exam (See Sect. 6a.)
2. Pulmonary Function Test
3. Central Nervous System check
4. Eye exam with vision screen
5. GI evaluation with check for hernias
6. Ears, nose & throat with audiogram
7. Chest X-ray, Tri-annually
8. Musculoskeletal X-ray (1st exam)
9. Sickle Cell test (1st exam)

Welders, Mechanics, Facility Maintenance Inspectors, Trainees, & Electricians.

1. Basic medical exam (Sect. 6a)
2. Pulmonary Function Test for respirator clearance
3. Heavy Metal blood screen, to include blood lead.
4. Chest X-ray, Tri-annually with B-read

Crane Operators, Boat Operator, CDL

1. Basic Medical exam (sect. 6a) only

Park Rangers & Survey Technicians

1. Basic Medical exam (Sect. 6a)
2. Immunization for Bloodborne Pathogens
3. Pulmonary Function test for respirator (some projects)
4. Lyme Dz. Vaccine

Employees exposed to Asbestos

(Contact Safety Office for examination schedule)
1. Basic Medical exam (Sect. 6a)
2. Pulmonary Function Test
3. Chest X-ray with B-read

Employees Requiring Respirator Clearance

1. Basic Medical (Sect. 6a)
2. Pulmonary Function Test

HAZWOPER Workers

(Contact Safety Office for examination schedule)
1. Basic Medical Exam (Sect. 6a)
2. Pulmonary Function Test
3. Cholinesterase (If exposed to pesticides)
4. Heavy Metal blood screen, to include blood lead.

7. Forms and Questionnaires

a. Medical History Form. An Occupational Medical History questionnaire should be provided to each employee, in the medical surveillance program, prior to his or her scheduled doctor's appointment. This form should be requested from the medical provider. If this form is not supplied by the medical provider, please request a Medical History Questionnaire form from the District Safety Office. This form should be privately completed by the employee and carried to the doctor for review during the medical exam. For employees who are currently in the medical surveillance program, it is only necessary to complete a short "Update to the Medical History Questionnaire."

b. OSHA Respirator Medical Evaluation Questionnaire. All employees who may be required to wear a respirator must complete this form. This form is mandatory through the OSHA 29 CFR 1910.134 Federal Respiratory Protection regulation, Appendix C. It should be privately completed by the employee, and carried to the doctor for review during the medical exam.

c. Medical Examination Request Form. This form is used to supply the physician with information as to the reason for the medical exam. Also located on this form will be a place for "Job Title" and "Job Description." This form will state respirator clearance requests, with type to be used, if employee is on Asbestos Medical Monitoring, is a HAZWOPER worker, or is simply their for annual medical surveillance physical like the welders and mechanics. This form should also be completed prior to the doctor's appointment. This form is most effective when a good job description is provided and is available upon request from the Safety Office.

d. Report to the Employer. This form is designed to provide the project manager with the occupational health status of their employee concerning their medical suitability to perform prescribed job tasks. It will show all "Medical Clearances" that have been approved by the physician, such as respirator, DOT certificate, and diving. Audiogram results, and any other recommendations, which the physician may place upon the employee's activity based on the medical findings, will also be stated on this form. This form will be supplied to the employee prior to doctor's appoint. The examining or reviewing physician will review all medical data including laboratory results and complete this form. A copy of this form will be kept in the employee's permanent medical file, in the District building, with a copy being supplied to the employee's project manager.

e. Report to the Employee. This is a confidential report to be written by the examining or reviewing physician and provided to the employee. This report will explain

any medical findings discovered during the physical examination and review of tests. A copy of this form should be kept in the employee's permanent medical file at the district building.

f. Asbestos Medical Questionnaire. Any person that has been exposed to asbestos must complete this form as a part of their medical surveillance examination. The physician should review this form with the employee and discuss any questions the employee may have concerning its contents. This questionnaire is required by the 29CFR 1926.1101 Appendix D.

g. Procedures for handling employee forms. A copy of all completed forms, including the employee Medical History form must be sent to the following address at the District building for storage in the employees permanent medical file:

Occupational Health Care Unit
700 West Capitol Ave. RM. 1116
Little Rock, AR 72201
Attn: Occupational Health Nurse

The complete report should be sent in an envelope marked medical confidential. All forms, along with the examination form, should be mailed by the doctor's office, or the employee themselves, to maintain employee medical privacy. The individual project offices will be supplied the "Report to the Employer" which covers essential information, without violating employee medical privacy rights. The employee should always keep a copy of all forms and results from their medical examination. To obtain all blank forms or ask procedural questions, please contact the District industrial hygienist, in the Safety and Occupational Health Office.

Requirements for Medical Vendors

The requirements for medical vendors providing service to the Corps of Engineers are subject to change as OSHA approval of equipment and procedures, as well as ANSI standards, change. Annual updates and reviews will be made to this list of requirements.

The medical vendors must provide the Little Rock District Safety and Occupational Health Office (SOHO) with written documentation that they have met all the requirements set forth in the following document as required by the Occupational Safety and Health Administration, the U.S. Army Corps of Engineers, and the American National Standards Institute.

A. Audiometric Test Requirements - 29 CFR 1910.95(h)

1. Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency shall be taken separately for each ear.

2. Audiometric tests shall be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969, which is incorporated by reference as specified in the 29 CFR 1910.6.

3. Audiometric examinations shall be administered in a room meeting the requirements listed in Appendix D of the 29 CFR 1910.95: "Audiometric Test Rooms."

B. Audiometric Measuring Instruments – 29 CFR 1910.95 App C

1. In the event that pulsed-tone audiometers are used, they shall have a tone on-time of at least 200 milliseconds.

2. Self-recording audiometers shall comply with the following requirements:

(a) The chart upon which the audiogram is traced shall have lines at positions corresponding to all multiples of 10 dB hearing level within the intensity range spanned by the audiometer. The lines shall be equally spaced and shall be separated by at least 1/4 inch. Additional increments are optional. The audiogram pen tracings shall not exceed 2 dB in width.

(b) It shall be possible to set the stylus manually at the 10-dB increment lines for calibration purposes.

(c) The slewing rate for the audiometer attenuator shall not be more than 6 dB/sec except that an initial slewing rate greater than 6 dB/sec is permitted at the beginning of each new test frequency, but only until the second subject response.

(d) The audiometer shall remain at each required test frequency for 30 seconds (+ or - 3 seconds). The audiogram shall be clearly marked at each change of frequency and the actual frequency change of the audiometer shall not deviate from the frequency boundaries marked on the audiogram by more than + or - 3 seconds.

(e) It must be possible at each test frequency to place a horizontal line segment parallel to the time axis on the audiogram, such that the audiometric tracing crosses the line segment at least six times at that test frequency. At each test frequency the threshold shall be the average of the midpoints of the tracing excursions.

C. Audiometric test rooms - 29 CFR 1910.95 App D

Certification of Audiometric Test Room should be provided to the SOHO annually, prior to the start of medical examinations. Rooms used for audiometric testing shall not have background sound pressure levels exceeding those in Table D-1, when measured by equipment conforming at least to the Type 2 requirements of the American National Standard Specification for Sound Level Meters, S1.4-1971 (R1976), and to the Class II requirements of American National Standard Specification for Octave, Half-Octave, and Third-Octave Band Filter Sets, S1.11-1971 (R1976).

TABLE D-1 - MAXIMUM ALLOWABLE OCTAVE-BAND SOUND PRESSURE LEVELS
FOR AUDIOMETRIC TEST ROOMS

Octave-band center frequency (Hz).....	500	1000	2000	4000	8000
Sound pressure level (dB) ...	40	40	47	57	62

D. Audiometer calibration - 29 CFR 1910.95(h)(5)

1. Audiometer calibration certificate for the current year should be provided to the SOHO prior to the start of medical examinations.

2. The functional operation of the audiometer shall be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.

3. Audiometer calibration shall be checked acoustically at least annually in accordance with Appendix E of the 29 CFR 1910.95: "Acoustic Calibration of Audiometers." Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.

(d) This measurement may be made electrically with a voltmeter connected to the earphone terminals.

3. "Tolerances"

When any of the measured sound levels deviate from the levels in Table E-1 or Table E-2 by + or - 3 dB at any test frequency between 500 and 3000 Hz, 4 dB at 4000 Hz, or 5 dB at 6000 Hz, an exhaustive calibration is advised. An exhaustive calibration is required if the deviations are greater than 15 dB or greater at any test frequency.

TABLE E-1 - REFERENCE THRESHOLD LEVELS FOR TELEPHONICS - TDH-39 EARPHONES

Frequency, Hz	Reference threshold level for TDH-39 earphones, dB	Sound level meter reading, dB
500	11.5	81.5
1000	7	77
2000	9	79
3000	10	80
4000	9.5	79.5
6000	15.5	85.5

4. An exhaustive calibration shall be performed on the audiometer, at least every two years in accordance with sections 4.1.2; 4.1.3.; 4.1.4.3; 4.2; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.

E. Acoustic calibration of audiometers – 29 CFR 1910.95 App E

The medical vendor must provide written documentation that the audiometer has been calibrated in the following manner:

Audiometer calibration shall be checked acoustically, at least annually, according to the procedures described in Appendix E, of the 29 CFR 1910.95. The equipment necessary to perform these measurements is a sound level meter, octave-band filter set, and a National Bureau of Standards 9A coupler. In making these measurements, the accuracy of the calibrating equipment shall be sufficient to determine that the audiometer is within the tolerances permitted by American Standard Specification for Audiometers, S3.6-1969.

1. "Sound Pressure Output Check"

(a) Place the earphone coupler over the microphone of the sound level meter and place the earphone on the coupler.

(b) Set the audiometer's hearing threshold level (HTL) dial to 70 dB.

(c) Measure the sound pressure level of the tones at each test frequency from 500 Hz through 6000 Hz for each earphone.

(d) At each frequency the readout on the sound level meter should correspond to the levels in Table E-1 or Table E-2, as appropriate, for the type of earphone, in the column entitled "sound level meter reading."

2. "Linearity Check"

(a) With the earphone in place, set the frequency to 1000 Hz and the HTL dial on the audiometer to 70 dB.

(b) Measure the sound levels in the coupler at each 10-dB decrement from 70 dB to 10 dB, noting the sound level meter reading at each setting.

(c) For each 10-dB decrement on the audiometer the sound level meter should indicate a corresponding 10 dB decrease.

TABLE E-2 - REFERENCE THRESHOLD LEVELS FOR TELEPHONICS - TDH-49 EARPHONES

Frequency, Hz	Reference threshold level for TDH-49 earphones, dB	Sound level meter reading, dB
500	13.5	83.5
1000	7.5	77.5
2000	11	81.0
3000	9.5	79.5
4000	10.5	80.5
6000	13.5	83.5

F. Vision Screening with Tonometry. The vision screening, with tonometry for glaucoma, must be conducted by a trained technician. The vision screening should assess not only acuity as is measured with a Snellen eye chart, but also should assess depth, near, far, peripheral, lateral, and vertical phoria, both corrected and uncorrected. It is highly recommended that a "vision tester" comparable to a Titmus Vision Tester be used to access the vision parameters described above. This is very important for electricians, surveyors, and for individuals receiving DOT certificates for CDL licenses. The Ishihara 14 plate, minimum, should be used to ascertain color vision. The vision screening, and equipment used should be clearly documented on the physical examination form, and signed and dated by the technician carrying out the vision screening.

G. Pulmonary Function Test (PFT). The spirometer used to carryout the PFT must be calibrated daily. The documentation of the daily calibration must be printed directly on the PFT printout or attached to the PFT printout for each person being examined. The spirometer should be set to Knudson protocols and provide actual and % predicted for Forced Vital Capacity (FVC) and Forced Expired Volume (FEV). The technician carrying out the pulmonary function test must also be trained and certified to perform and interpret a PFT. The technician should provide documentation that he or she has received approximately 16 hours of formal instruction covering the following areas:

1. Basic physiology of the forced vital capacity maneuver and determinants of airflow limitation with emphasis on the relation to reproducibility of results

2. Instrumentation requirements including calibration procedures, sources of error and their correction.

3. Performance of the testing including subject coaching, recognition of improperly performed maneuvers and corrective actions

4. Data quality with emphasis on reproducibility

5. Actual use of equipment under supervised conditions

6. Measurement of tracings and calculation of results

H. Electrocardiogram (EKG). The EKG must be a resting/supine 12 lead EKG. The technician and examining physician should sign and date the EKG. A 10 lead EKG is not definitive enough, and not recommended by cardiologist. The EKG printout should be reviewed by a board certified cardiologist. The technician performing the EKG must provide documentation of training to perform EKG's.

I. Laboratory. The lab used for analysis of blood, urine, etc. must be CLIA certified, in the state of their operation. (Clinical Laboratory Improvement Act of 1988, 42 CFR Part 493) Also if the laboratory has received accreditation by the College of American Pathologist (CAP), this documentation should also be provided to the SOHO.

J. Chest X-ray. When chest x-rays are required, such as for divers, welders, or asbestos medical monitoring, they must be taken by a certified radiologic technician and be Class I in type. Class II x-rays are not acceptable for B-reading. The x-rays must be reviewed by a certified B-reader.

K. Regulations. The medical vendors serving the Corps of Engineers (COE) must have in their office, a copy of all applicable Federal regulations governing their administration of medical examinations to COE employees. Regulations such as the following:

1. 29 CFR 1910.95, Hearing Conservation

2. 29 CFR 1926.1101, Asbestos

3. ER 385-1-86, Government Employee Diving Operations

4. 29 CFR 1910.120, HAZWOPER

5. 29 CFR 1910.134, Respiratory Protection, with Appendix C, The OSHA Respirator Medical Evaluation Questionnaire (Mandatory).

6. 29 CFR 1926.62, Lead

7. 29 CFR 1910.1030, Bloodborne pathogens

U.S. ARMY CORPS OF ENGINEERS, LITTLE ROCK DISTRICT
Confidential Report to the Employee
(To be completed by the reviewing physician)

1. The following "Report to the Employee" is to be completed by the reviewing physician and returned to the employee ONLY. A permanent copy of this letter should be placed in the employee's medical file.

2. Please type or complete this form on the computer. A disk with this form will be provided upon request.

3. If you have any questions, please contact the Little Rock District Safety and Occupational Health Office (501) 324-5616.

4. This information is to be given to the employee to assist them in their own personal health management.

Physician's Name and Clinic:

Physician's Address:

State: Zip: Phone:

Date of exam:

Remarks:

U. S. ARMY CORPS OF ENGINEERS, LITTLE ROCK DISTRICT

4 Jun 01

Summary of Occupational Medical Review Confidential Report to the Employee

(To be completed by the reviewing physician)

Employee Name: SSN:

Worksite: Position:

1. Possible health effect from recent workplace exposure: None noted ☐

2. Health problems NOT caused by work, and which DO NOT affect your ability to perform job duties:

None noted ☐

3. Health problems NOT caused by work, but which MAY affect yours ability to perfrom job duties:

None noted ☐

4. ☐ Follow-up is needed as part of the medical surveillance program. (Write address and contract for referral below).

None noted ☐

5. Other comments by the attending physician or occupational health reviewer.

6. If you have questions, please call me at:

Doctor's Name (Print) Doctor's Signature Date

4 Jun 01

U. S. ARMY CORPS OF ENGINEERS, LITTLE ROCK DISTRICT
Confidential Report to the Employer
(To be completed by the reviewing physician)

The following report to the employer is to be completed by the examining physician and original returned to:

Occupational Health Care Unit
700 West Capitol Ave. RM. 1116
Little Rock, AR 72201
Attn: Occupational Health Nurse

* Please type or complete this form on computer. A disk with this form will be provided upon request. The reviewing physician should sign and date the bottom of the report and any additional sheets, which may be required.

Please attach the following information to the Employer Report:

* Audiometer calibration certificate for current year
* Certification of Audiometric Test Room, current year
* Statement of Spirometry calibration on day of medical exam
* Evidence of training and certification for technicians performing EKG, pulmonary function test, and audiometric test

If you have any queations, please contact the Little Rock District Safety and Occupational Health Office, (501) 324-5616.

* A copy of this report to the employer will be supplied to the employee by the District industrial hygienist in the Safety Office.

This information will be placed in the employee's permanent medical file stored in the Occupational Health Unit.

Physician's Name & Clinic:					
Physician's Address:					
State:		Zip:		Phone:	
Date of exam:					

U.S. ARMY CORPS OF ENGINEERS, LITTLE ROCK DISTRICT
Medical Surveillance Report to the Employer
(To be completed by the reviewing physician)

Employee Name:		SSN:	
Worksite:		Position:	

The employee has been informed of the following medical opinion:

- ☐ No injury or illness which may affect their ability to work was found
- ☐ Medical findings or exposure history warrant a review of work activities. Injury or illness was related to work.
- ☐ An injury or illness, which may affect employee's ability to work, was found. Explain below.

Please offer recommendations, limitations, and comments below:

MEDICAL CLEARANCES:

- ☐ Employee has been cleared for routine job duties provided in job desription
- ☐ Employee has been cleared for DOT Certificates (Card expires:)
- ☐ Employee has been cleared for diving (Certificate expires:)
- ☐ Employee has been cleared to operate a crane
- ☐ Employee has been cleared for other:

RESPIRATOR CLEARANCES: (29 CFR 1910.134)

- ☐ Employee is NOT physically able to wear a respirator
- ☐ Employee HAS BEEN CLEARED to wear the following respirators:
- ☐ Full face/half face negative pressure respirator
- ☐ Full face/half face positive pressure respirator
- ☐ Hood/helmet powered cartridge-type respirator
- ☐ Self-contained breathing apparatus (SCBA)
- ☐ Full face/half face/hood/helmet supplied air positive pressure respirator

Permitted work exertion level while wearing respirator:		Mild			Moderate			Heavy			

HEARING: (29 CFR 1910.95)

Employee audiogram showed the following:

- ☐ Normal audiogram
- ☐ Abnormal audiogram with no change in baseline
- ☐ Standard threshold shift (15dBA) or other significant change:

Physician's Name (Print)		Physician's Signature	
Date			

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APPENDIX P

Bloodborne Pathogens Programs

1. Purpose. To establish employee guidelines and procedures to prevent transmission of bloodborne diseases such as hepatitis B virus and human immunodeficiency virus, and outline a course of action should an exposure occur, or be suspected.

2. Application. This plan applies to all Little Rock District employees who are at risk of exposure to blood or other infectious material. This will include but is not limited to rangers, lock operators, maintenance employees, and facility maintenance inspectors, who may be required to be first responders, certified in CPR, render first aid, or may encounter raw sewage through the course of their job duties.

3. Responsibilities.

a. Safety and Occupational Health Office (SOHO)

(1) Assist the projects in the development and implementation of a written Exposure Control Plan.

(2) Conduct required annual reviews of each facility exposure control plan, and update as necessary to reflect new or modified tasks or procedures, which affect occupational exposure to bloodborne pathogens.

(3) Work with Project and Operations Managers to ensure the medical facilities rendering services under the site Exposure Control Plan are provided all the correct documentation and regulations as outlined in the 29 CFR 1910.1030(f).

b. Project and Operations Managers

(1) Write and implement an Exposure Control Plan for their facility which meets all requirements described below and those stated in the 29 CFR 1910.1030.

(2) Where there is the potential for occupational exposure to blood borne pathogens, supply all appropriate personal protective equipment.

(3) Provide hand wash facilities readily accessible to employees

(4) Ensure that the following information is placed in the permanent medical record of each employee with occupational exposure to bloodborne pathogens, in accordance with 29 CFR 1910.1020. This record must be kept for the length of employment plus 30 years. The record

shall include:

- Name and social security number of the employee
- A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical record relative to the employee's ability to receive vaccination
- A copy of all results of examinations, medical testing, and follow-up procedures
- The "Employer's copy" of the healthcare professional's written opinion
- A copy of the information provided to the healthcare professional (29 CFR 1910.10130 regulation, employee's duties, circumstances of exposure and routes of exposure etc.)

c. Employees.

(1) Actively participate in all required bloodborne pathogens training.

(2) Always carry and use appropriate PPE in the field whenever there is the potential for exposure to bloodborne pathogens.

(3) Report all exposures to blood or other infectious material to the supervisor as soon as possible.

(4) Apply universal precautions throughout all work activities (assumption that all body fluids are infectious for HIV, HBV, and other bloodborne pathogens).

(5) Always wash hands immediately or as soon as possible after removing gloves.

(6) Comply with all elements of the site Exposure Control Plan.

4. Exposure Control Plan. The exposure control plan should be designed to minimize or eliminate employee exposure to blood and other infectious material. Pathogens of primary concern are the human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C (prevalent in raw sewage), and syphilis. Although needle stick injuries are the most common means of exposure, bloodborne pathogens can be transmitted through contact with mucous membranes and non-intact skin. An exposure control plan designed to prevent occupational exposure to bloodborne pathogens shall contain the following elements:

a. Exposure Determination.

In order to decide who is to be included in the Exposure Control Plan, the supervisor must first determine which workers may be exposed to blood or other infectious material in the course of their duties. The categories listed below should be considered when determining employee

exposure risk. The exposure determination must be made without regard to the use of personal protective equipment, therefore employees are considered as having an exposure to bloodborne pathogens, even if they wear PPE. The exposure determination must include a list of those job classifications, ranger, mechanic, laborer, etc, in which employees will perform tasks having the potential for exposure to bloodborne pathogens. The tasks, in which exposures to bloodborne pathogens occur, must be listed for each job classification. Those employees who fall into categories 1 or 2 should be included in the Exposure Control Plan, and notified in writing with documentation placed in their permanent record of their classification status.

- Category 1. Performs tasks that involve an inherent potential for mucous membrane or skin contact with blood, body fluids. Administers CPR, applies bandages to wounds and lacerations. (ex. doctors, EMT's, sewage workers).

- Category 2. Performs tasks that involve maintenance on equipment, which may be contaminated with blood, body fluids, or sewage. Picks up or processes waste, which may contain items contaminated by blood or body fluids. May occasionally perform unplanned Category 1 tasks. (ex. First aid and CPR responders, rangers, lock and dam operators, maintenance workers, general park laborers).

- Category 3. The employee performs tasks that involve no exposure to blood, body fluids, or tissues during the normal work routine.

b. Methods of Compliance.

(1) Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Universal precautions is an approach to infection control which treats all human blood and body fluid as if they are infected with bloodborne pathogens.

(2) Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Self-sheathing needles, puncture-resistant disposal containers for contaminated sharp instruments or broken glass, resuscitation bags, and ventilation devices are examples of engineering controls. Where occupational exposure remains after institution of these controls, personal protective equipment shall be used. Each site exposure control plan should list the engineering controls put in place to prevent employee exposure to bloodborne pathogens, and include a weekly or monthly schedule for review of the engineering controls.

(3) Supervisors must ensure that employees wash their hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials. Hand wash facilities must be provided, readily accessible to employees. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

(4) Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure to bloodborne pathogens.

(5) Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, as much as is feasible considering the type of equipment in question.

c. Personal Protective Equipment.

(1) When there is the potential for exposure to bloodborne pathogens, the project/operations manager shall provide and ensure the use of appropriate personal protective equipment, such as gloves, gowns, laboratory coats, face shields, goggles, mouthpieces, resuscitation bags, and pocket masks. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through, to the employee's work clothes, skin, eyes, or mouth, under normal conditions of use, and for the duration of time which the protective equipment will be used.

(2) CPR shielding devices should be readily available and used, whenever possible, for resuscitation. It is required that each CPR provider, office, and government vehicle, be furnished an HIV/HBV personal protective/ cleanup kit.

(3) Masks in combination with goggles or face shields shall be worn whenever splashes, spray, or spatter of droplets of blood or other infectious materials may be generated, and eye, nose, or mouth contamination can be reasonably anticipated.

(4) Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, or other infectious material, and when handling or touching contaminated items or surfaces.

(5) All garments penetrated by blood shall be removed as soon as possible. All personal protective equipment must be removed prior to leaving the work area. All contaminated clothing, gloves, masks, goggles, etc. must be placed in a biohazard bag. This biohazard bag must be sealed and disposed of in accordance with local laws governing disposal of bio-hazardous material. It is not to be placed in the general trash. (Review disposal of bio-hazardous material with local medical providers or responding rescue personnel)

(6) The site exposure control plan should specifically outline what PPE is to be worn and under what circumstances. The plan should also state the method of distribution for the PPE, and disposal procedures in accordance with local laws and the requirements of this regulation.

d. Housekeeping.

(1) Supervisors shall ensure that the worksite is maintained in a clean and sanitary condition.

(2) In the event that an area, such as a road, sidewalk, building floor, vehicle, work surface, or machine are contaminated with blood or other infectious material, the surface will be decontaminated with bleach, using appropriate PPE as soon as possible. All materials and PPE shall be disposed of in accordance with local laws governing the disposal of bio-hazardous material. The site exposure control plan should explain the exact procedures for the decontamination of contaminated surfaces. Operations and project managers may elect to call local fire and rescue to perform decontamination procedures whenever feasible.

e. Contaminated Sharps Discarding.

Contaminated needles and sharps shall not be bent, recapped, or removed from the "approved" sharps container. When picking up discarded needles, syringes, lancets or other sharps, a mechanical device, such as pliers should be used. Items which cannot be grasped with pliers, should be swept into a dustpan, and then grasped with pliers for discarding. Used needles and other sharps must be discarded in an "approved" sharps container. An approved sharps container will be one that is closable, puncture resistant, leak proof on the sides and bottom, and labeled or color-coded with the word BIOHAZARD, or the biohazard symbol.

Special care should be taken when removing trash and or placing trash into an open bin, due to the possible presence of exposed sharps.

f. Hepatitis B Vaccination. Operations/project managers shall make available the Hepatitis B vaccination series to all employees who may have occupational exposure to blood or other infectious material. Those individuals who fall into categories 1 and 2 job classification, as explained in section 4a above, should be offered the Hepatitis B vaccination. The Hepatitis B vaccination shall be administered under the following guidelines:

(1) The Hepatitis B vaccination shall ONLY be made available after the employee has received the required training explained in section 6 of this regulation.

(2) The hepatitis B vaccination shall be made available at no cost to the employee and at a reasonable time and place.

(3) The Operations/Project manager shall obtain and provide the employee with a healthcare professional's written opinion of a medical evaluation prior to the initial inoculation of the Hepatitis B vaccine. The written opinion shall be limited to whether the Hepatitis B vaccination is indicated for an employee and if the employee has received such a vaccination. The purpose of obtaining an evaluation prior to receiving the vaccine is that some employees may be allergic to a component of the vaccine. Following the evaluation, the healthcare professional can proceed to administer the first inoculation on the same visit. The written opinion ensures the employer that an evaluation was done, informs the employer regarding the employee's HBV vaccination status, and allows the employer to provide a copy to the employee. Administered by or under the supervision of a licensed physician or by or the supervision of another licensed healthcare professional.

(4) Provided according to recommendations of the U.S. Public Health Service except as specified in the 29 CFR 1910.1030(f)

(5) All laboratory test shall be conducted by an accredited laboratory at no cost to the employee..

(6) The employee shall not be made to participate in a prescreening program as a prerequisite for receiving the hepatitis B vaccination.

(7) If the employee initially declines the hepatitis B vaccination, but at a later date while still working in a category 1 or 2 status, decides to accept the vaccination, the employer shall make available the hepatitis B vaccination at that time.

(8) All employees whether they accept or decline the vaccine must read and sign the attached Hepatitis B information sheet. This sheet must be signed by the supervisor also and stored in the employee permanent medical file.

(9) If the employee accepts the vaccination offered, they must sign the following acceptance statement, and the supervisor must file this and all other medical opinions in the employees permanent medical file. This information must be kept in the employee's file for the length of employment plus 30 years.

ACCEPTANCE OF HEPATITIS B VACCINE

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk for infection by the hepatitis B virus (HBV). I have been given the opportunity to be vaccinated with the hepatitis B vaccine, and accept this offer, at no charge to myself.

Employee's Signature _____ Date _____

Supervisor's Signature _____ Date _____

(10) If the employee declines the hepatitis B vaccination offered, they must sign the following declination statement, and the supervisor must file this in the employees permanent medical file. This information must be kept in the employee's file for the length of employment plus 30 years.

DECLINATION OF HEPATITIS B VACCINE

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

Employee's Signature _____ Date _____

Supervisor's Signature _____ Date _____

(11) 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 at no cost to the employee.

g. Post-exposure Evaluation and Follow-up. Following a report of an exposure incident, the project/operations manager shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including the following:

(1) Documentation of the routes of exposure, and the circumstances under which the exposure incident occurred.

(2) Identification and documentation of the source individual, unless the project/operations manager can establish that identification is infeasible or prohibited by state or local law.

(3) The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the project/operations shall establish that legally required consent cannot be obtained. When the law does not require the source individual's consent, the source individual's blood, if available, shall be tested and the results documented. 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.

(4) The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained. If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the same shall be preserved for at least 90 days. If within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

(5) Post-exposure prophylaxis (preventative medical treatment for disease), when medically indicated, shall be provided to the employee at no charge.

(6) Counseling and evaluation of reported illnesses shall also be provided to the employee at no charge.

h. Information Provided to the Healthcare Professional.

The health care provider, responsible for administering the Hepatitis B vaccination, must be provided a copy of the 29 CFR 1910.1030 regulation by the Operations/Project manager. The operations/project manager shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

(1) A copy of the 29 CFR 1910.1030 Bloodborne pathogen regulation

(2) A description of the exposed employee's duties as they relate to the exposure incident

(3) Documentation of the routes of exposure and circumstances under which exposure occurred.

(4) Results of the source individual's blood testing, if available

(5) All medical records relevant to the appropriate treatment of the employee, including vaccination status, must be kept in the employee's permanent medical file, for the length of employment plus 30 years.

(6) The Operations/Project manager shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation. The post-exposure evaluation doctor's written opinion shall be limited to that the employee has been informed of the results of the evaluation, and that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials. All other findings or diagnoses shall remain confidential and shall not be included in the written report.

i. Communication of Hazards to Employees

Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material, and other containers used to store, transport, or ship blood or other potentially infectious materials. The labels shall be fluorescent orange or red and state the word "BIOHAZARD" or have the symbol in place.

Labels required for contaminated equipment shall also state which portions of the equipment remain contaminated.

j. Training.

Operations/project managers must provide Bloodborne Pathogens training for their employees with occupational exposure to bloodborne pathogens. The training shall take place at the time of the initial assignment and at least annually thereafter. Additional training must be provided when changes in tasks or procedures change the employee's exposure to bloodborne pathogens. The additional training may be limited to addressing the new exposures created. The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address. The training program shall contain the following:

(1) An accessible copy of the 29 CFR 1910.1030 bloodborne pathogens regulation with an explanation of its contents.

(2) A general explanation of the epidemiology and symptoms of bloodborne diseases.

(3) An explanation of the modes of transmission of bloodborne pathogens.

(4) An explanation of the operation/project manager's site specific exposure control plan and the means by which the employee can obtain a copy of the written plan.

(5) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposures to blood and other potentially infectious materials.

(6) An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices and personal protective equipment.

(7) Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.

(8) An explanation of the basis for selection of personal protective equipment.

(9) Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.

(10) Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.

(11) An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.

(12) Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident.

(13) An explanation of the signs and labels required by the 29 CFR 1910.1030 bloodborne pathogens standard.

k. Recordkeeping.

(1) Medical Records. The operations/project managers must establish and maintain an accurate medical record for each employee with occupational exposure to bloodborne pathogens. The employee medical record must be kept confidential and not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as may

be required by law. The medical record must be kept for the duration of employment plus 30 years. The record shall include the following:

- Name and social security number of the employee
- A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical record relative to the employee's ability to receive vaccination
- A copy of all results of examinations, medical testing, and follow-up procedures
- The employer's copy of the healthcare professional's written opinion
- A copy of the information provided to the healthcare professional

(2) Training Records. Training records must be maintained for 3 years from the date on which the training occurred and must contain the following items:

- The dates of the training sessions
- Contents or summary of training session information
- Names and qualifications of persons conducting the training
- The names and job titles of all persons attending the training sessions

(3) All records discussed above shall be made available upon request for examination and copying to employees. Medical records shall be made available to anyone having the written consent of the subject employee.

5. Lyme Disease Vaccination Program

a. Lyme disease is a tick-borne ailment caused by an infection with the spirochete, Borrelia burgdorferi, carried by certain species of ticks. The disease is a multi-system, multi-stage inflammatory illness that can lead to serious health complications, if left untreated or is inadequately treated. Early symptoms include a characteristic rash, headache, chills, and joint pain. Late stage rheumatological and neurological complications can become apparent, requiring intensive therapy to combat. The first line of defense against Lyme disease and other tick-borne illnesses is the use of proper personal protective measures such as "DEET" containing repellents, protective clothing, an checking for and removing ticks properly when detected.

b. The Food and Drug Administration has approved and licensed the first Lyme disease vaccine, developed by SmithKline Beecham Pharmaceuticals, named LYMErix. The vaccine provides protection from Lyme Disease and is administered in a three shot series. The Centers for Disease Control have identified the following counties in the Little Rock District as possessing a high or moderate risk for Lyme Disease: in Arkansas: Polk, Sebastian, Franklin, Washington, Madison, Searcy, Stone, and Baxter; in Southern Missouri: Stone, Taney, Howell, Douglas, Webster, Green.

c. Examples of personnel that may need this vaccination include rangers, facility maintenance inspectors, surveyors, and others that routinely work outdoors in the above mentioned areas. Each supervisor should conduct a risk assessment for those personnel to determine if an employee is at risk for this disease. INOCULATION IS VOLUNTARY.

d. It is highly advised that people wishing to get this vaccination seek advice from their medical provider prior to taking this vaccination. The District Occupational Health Nurse is available for consultation.

6. What is Hepatitis B?

Hepatitis B is a serious viral infection of the liver characterized by poor appetite, abdominal discomfort, nausea/vomit, joint pain, rash and sometime yellowing of the skin. Transmission occurs through direct contact with infected blood and body secretions such as saliva, semen, and vaginal fluids. The infection can be transmitted between household contacts, sex partners and anyone who comes in contact with body fluids contaminated with the hepatitis B virus. The time between infection and the onset of symptoms can be between 45-180 days, and infected individuals can transmit the disease from several weeks before the onset of symptoms, while they are sick and sometimes even after they have recovered from the infection. At this time there are no antibiotics to treat Hepatitis B infection, but there is a vaccine that can prevent the disease.

7. What is the Hepatitis B Vaccine?

The vaccine produced in the U.S. is made from recombinant DNA using a yeast base. This vaccine cannot transmit other infections.

Who should get the Hepatitis B Vaccine?

Vaccine is important for the following groups:

- Health care workers and others at occupational risk of exposure to infected blood or body fluids.
- Hemophiliacs and recipients of blood products.
- Household contacts of hepatitis B carriers.
- Household contacts of adoptees from areas with high rates of hepatitis B.
- International travelers who have contact with blood or sexual contact with residents from high or intermediate risk areas.
- Intravenous drug users.
- Sexually active homosexual or bisexual males.
- Heterosexual individuals who have had more than one sex partner in the previous six months and/or those with a recent episode of a sexually transmitted disease.

- All children should receive the Hepatitis B vaccine during the first 18 months of age.

8. Dosage

Dosage consists of a series of 3 injections over a period of 6 months. For adults, a small amount of vaccine fluid is injected into the arm initially, and is followed by two more doses at 1 and 6 months after the first injection.

(a) Possible Side Effects for the Vaccine

Side effects from this vaccine are relatively minor, such as pain at the injection site and fever. Some may experience nausea and flu-like symptoms. Rash and itching are rare.

(b) Simultaneous Use with Other Vaccines

The Hepatitis B vaccine may be given at the same time as many live and inactivated vaccines, but using different injection sites. Individuals needing the Yellow Fever vaccine should separate this vaccination by 1 month from the Hepatitis B vaccination.

Warning

- Individuals with a history of severe allergic or neurologic reaction to a previous dose or other vaccines should check with their health care providers before receiving the vaccine.
- Individuals who are allergic to yeast or vaccine components should check with their health care providers before receiving the vaccine.
- Individuals with severe infections, or severe heart disease should delay vaccinations unless withholding the vaccine poses a greater risk to overall health.
- Individuals who are immunocompromised or elderly may require larger vaccine doses and may not develop high levels of protective immunity as healthy individuals can.
- Women who may be pregnant or are breast-feeding should delay vaccination unless it is clearly needed and benefits outweigh the potential risk.

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APPENDIX Q

Hearing Conservation Program

1. Purpose. The purpose of the Hearing Conservation Program is to protect the hearing of the workers and to educate them concerning the noise hazards within their facility. This Appendix establishes criteria for implementing and administering the SWLR District Hearing Conservation Program.

2. Application. This program applies to all Little Rock District employees, and visitors that are exposed to noise hazards in the workplace.

3. Inclusion Criterion. All employees who routinely work with or around noise hazardous equipment will be included in the hearing conservation program. Normal conversational speech is approximately 60 decibels(A). When you have to shout to be heard in a normal conversation, you generally are being exposed to noise above 85 dBA. Work areas in which noise reaches 85 dBA are classified as "Hazardous Noise Areas."

4. Responsibilities.

a. Safety and Occupational Health Office (SOHO)

(1) Provide over site and administration for the District Hearing Conservation Program, and provide guidance for the reduction and abatement of noise hazards through feasible engineering controls.

(2) Maintain a central record of all District personnel in the Hearing Conservation Program, dates of audiograms, and documentation of hearing conservation training. The SOHO will provide recommendations for employee inclusion into the hearing conservation program and appropriate hearing protection.

b. Project and Operations Managers, Supervisors and Team Leaders

(1) Implement all requirements of the SWLR District Hearing Conservation Program if noise hazards are present at their facility, as determined by the noise monitoring, or special work activities.

(2) Review employee position hazard analyses, noise surveys, and employee special job duties, to ensure employees are wearing required hearing protection.

(3) Provide a full list of employees in their hearing conservation programs, and the date of last audiogram, to the SOHO annually.

(4) Ensure that employees have been provided documented training as outlined in section 7 of this Appendix, and schedule all annual audiograms. (Audiograms and administering facilities must meet all OSHA guidelines described in 29 CFR 1910.95 and its Appendices)

c. Employees. Use hearing protection wherever required, and notify supervisor whenever a noise hazard is presented in the work environment.

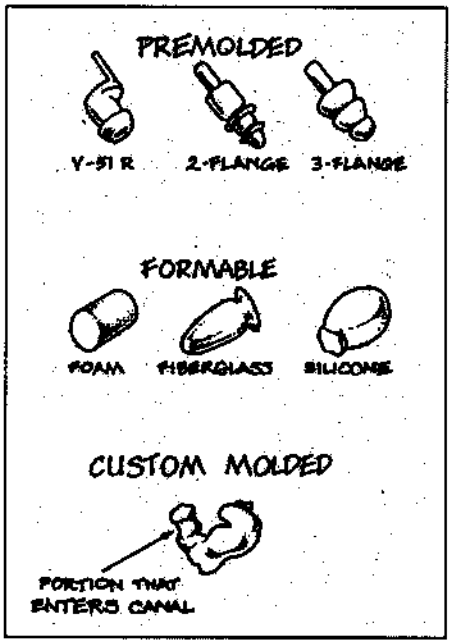
5. Hearing Protection. All SWLR employees are required to wear hearing protection whenever noise levels reach or exceed 85 dBA regardless of duration. Personal protective equipment is recommended only where engineering controls are inefficient or impractical.

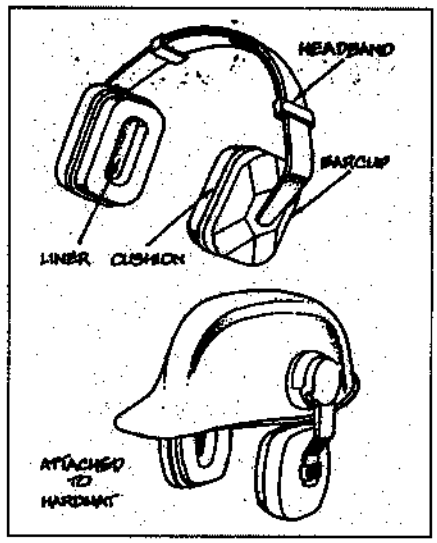
a. Personal protective equipment will include the use of earplugs or earmuffs only. Cotton is not acceptable.

b. Both earplugs and earmuffs will be worn in combination when noise levels exceed 100 decibels.

c. Hearing protection shall be worn regardless if the employee already has some hearing loss.

d. All District employees, contractors, and visitors shall wear hearing protection, when entering powerhouse erection areas, generator bays, and turbine areas.





6. Training.

a. Initial Orientation. All personnel in the Hearing Conservation Program will receive orientation training which includes:

(1) Review of the Little Rock District Hearing Conservation Program and the 29 CFR 1910.95 OSHA regulation.

(2) The effects of noise on hearing and balance.

(3) Specific machinery at the job site that can produce hazardous noise exposures.

(4) The purpose of hearing protection, its advantages, disadvantages, and instruction on use, fitting and care.

(5) The purpose of audiometric testing and an explanation of the testing procedure.

b. Periodic Training. Each employee in the hearing conservation program will also be given refresher training on the subject of hearing conservation at least annually.

7. Caution Signs for Noise Hazardous Areas.

a. Signs will be posted at entrances to all work areas in which employees could be exposed to hazardous noise.

b. Warning signs will clearly indicate that the area is a "Hazardous Noise Area," and shall indicate that hearing protection is required. Signs will be in accordance with 29 CFR 1910.95

c. When an individual machine or piece of equipment exceeds a noise level of 85 decibels, a sign, label, or decal shall be placed on or near the machine to warn of hazardous noise exposure, and that hearing protection is required.

8. Noise Monitoring.

a. Noise monitoring, in accordance with this Appendix, will be conducted during the annual industrial hygiene surveys of each District facility and special project. Exposure assessments of all District facilities and special projects will be made to determine noise hazards.

b. Monitoring shall be repeated whenever a change in process, equipment, or controls increases noise exposure to the extent that:

(1) Additional employees are exposed to noise above the action level.

(2) Attenuation of the noise hazard by hearing protection, currently used by employees, is rendered inadequate to meet present requirements.

9. Audiometric Testing.

a. Audiometric exams shall be administered in accordance with 29 CFR 1910.95, its appendices, and all applicable DOD regulations. Audiometric tests shall be offered annually to all Corps of Engineer employees included in the Hearing Conservation Program. All audiograms should be preceded by 14 hours of both workplace and non-workplace noise avoidance to ensure documentation of permanent, not temporary, hearing loss.

b. Audiogram Testing Requirements.

(1) The medical vendor must provide the Little Rock District Safety and Occupational Health Office (SOHO), written documentation that they have met all the requirements set forth in this Appendix, as required by the Occupational Safety and Health Administration 29 CFR 1910.95, the U.S. Army Corps of Engineers EM 385-1-1, and the American National Standards Institute.

(2) Audiometric tests shall be performed by a licensed or certified audiologists, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining, and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified, but their training must be documented. A technician who performs audiometric tests must be responsible to an audiologists, otolaryngologist, or physician.

c. Audiometric Test Requirements - 29 CFR 1910.95(h)

(1) Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency shall be taken separately for each ear.

(2) Audiometric tests shall be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969, which is incorporated by reference as specified in the 29 CFR 1910.6.

(3) Audiometric examinations shall be administered in a room meeting the requirements listed in Appendix D of the 29 CFR 1910.95: "Audiometric Test Rooms."

d. Audiometric Measuring Instruments – 29 CFR 1910.95 App C

(1) In the event that pulsed-tone audiometers are used, they shall have a tone on-time of at least 200 milliseconds.

(2) Self-recording audiometers shall comply with the following requirements:

(a) The chart upon which the audiogram is traced shall have lines at positions corresponding to all multiples of 10 dB hearing level within the intensity range spanned by the audiometer. The lines shall be equally spaced and shall be separated by at least 1/4 inch. Additional increments are optional. The audiogram pen tracings shall not exceed 2 dB in width.

(b) It shall be possible to set the stylus manually at the 10-dB increment lines for calibration purposes.

(c) The slewing rate for the audiometer attenuator shall not be more than 6 dB/sec except that an initial slewing rate greater than 6 dB/sec is permitted at the beginning of each new test frequency, but only until the second subject response.

(d) The audiometer shall remain at each required test frequency for 30 seconds (+ or - 3 seconds). The audiogram shall be clearly marked at each change of frequency and the actual frequency change of the audiometer shall not deviate from the frequency boundaries marked on the audiogram by more than + or - 3 seconds.

(e) It must be possible at each test frequency to place a horizontal line segment parallel to the time axis on the audiogram, such that the audiometric tracing crosses the line segment at least six times at that test frequency. At each test frequency the threshold shall be the average of the midpoints of the tracing excursions.

e. Audiometric test rooms – 29 CFR 1910.95 App D

Certification of Audiometric Test Room should be provided to the SOHO annually, prior to the start of medical examinations. Rooms used for audiometric testing shall not have background sound pressure levels exceeding those in Table D-1 when measured by equipment conforming at least to the Type 2 requirements of the American National Standard Specification for Sound Level Meters, S1.4-1971 (R1976), and to the Class II requirements of American National Standard Specification for Octave, Half-Octave, and Third-Octave Band Filter Sets, S1.11-1971 (R1976).

TABLE D-1 - MAXIMUM ALLOWABLE OCTAVE-BAND SOUND PRESSURE LEVELS FOR AUDIOMETRIC TEST ROOMS

Octave-band center frequency (Hz)	500	1000	2000	4000	8000
Sound pressure level (dB)	40	40	47	57	62

f. Audiometer calibration - 29 CFR 1910.95(h)(5)

(1) Audiometer calibration certificate for the current year should be provided to the SOHO prior to the start of medical examinations.

(2) The functional operation of the audiometer shall be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.

(3) Audiometer calibration shall be checked acoustically at least annually in accordance with Appendix E of the 29 CFR 1910.95: "Acoustic Calibration of Audiometers." Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.

(4) An exhaustive calibration shall be performed on the audiometer, at least every two years in accordance with sections 4.1.2; 4.1.3.; 4.1.4.3; 4.2; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.

g. Acoustic calibration of audiometers– 29 CFR 1910.95 App E

The medical vendor must provide written documentation that the audiometer has been calibrated in the following manner:

Audiometer calibration shall be checked acoustically, at least annually, according to the procedures described in Appendix E, of the 29 CFR 1910.95. The equipment necessary to perform these measurements is a sound level meter, octave-band filter set, and a National Bureau of Standards 9A coupler. In making these measurements, the accuracy of the calibrating equipment shall be sufficient to determine that the audiometer is within the tolerances permitted by American Standard Specification for Audiometers, S3.6-1969.

(1) "Sound Pressure Output Check"

(a) Place the earphone coupler over the microphone of the sound level meter and place the earphone on the coupler.

(b) Set the audiometer's hearing threshold level (HTL) dial to 70 dB.

(c) Measure the sound pressure level of the tones at each test frequency from 500 Hz through 6000 Hz for each earphone.

(d) At each frequency the readout on the sound level meter should correspond to the levels in Table E-1 or Table E-2, as appropriate, for the type of earphone, in the column entitled "sound level meter reading."

(2) "Linearity Check"

(a) With the earphone in place, set the frequency to 1000 Hz and the HTL dial on the audiometer to 70 dB.

(b) Measure the sound levels in the coupler at each 10-dB decrement from 70 dB to 10 dB, noting the sound level meter reading at each setting.

(c) For each 10-dB decrement on the audiometer the sound level meter should indicate a corresponding 10 dB decrease.

(d) This measurement may be made electrically with a voltmeter connected to the earphone terminals.

(3) "Tolerances"

When any of the measured sound levels deviate from the levels in Table E-1 or Table E-2 by + or - 3 dB at any test frequency between 500 and 3000 Hz, 4 dB at 4000 Hz, or 5 dB at 6000 Hz, an exhaustive calibration is advised. An exhaustive calibration is required if the deviations are greater than 15 dB or greater at any test frequency.

TABLE E-1 - REFERENCE THRESHOLD LEVELS FOR TELEPHONICS - TDH-39 EARPHONES

Frequency, Hz	Reference threshold level for TDH-39 earphones, dB	Sound level meter reading, dB
500	11.5	81.5
1000	7	77
2000	9	79
3000	10	80
4000	9.5	79.5
6000	15.5	85.5

TABLE E-2 - REFERENCE THRESHOLD LEVELS FOR TELEPHONICS - TDH-49 EARPHONES

Frequency, Hz	Reference threshold level for TDH-49 earphones, dB	Sound level meter reading, dB
500	13.5	83.5
1000	7.5	77.5
2000	11	81.0
3000	9.5	79.5
4000	10.5	80.5
6000	13.5	83.5

10. References. 29 CFR 1910.95, EM 385-1-1, 29 CFR 1926.52

APPENDIX R

Respiratory Protection Program

1. Purpose. The purpose of the Respiratory Protection Program is to ensure that all employees are protected from potential respiratory hazards encountered in the work environment.

2. Applicability. This program applies to all Little Rock District employees, who may be potentially exposed to respiratory hazards present in the workplace. Contractors working within the Little Rock District will be required to develop and implement a respiratory protection program, which meets the requirements described within this program, when respiratory hazards are present in their work operation.

3. General Policy. Atmospheric contamination by harmful dusts, fumes, mists, paints, smoke, gases, vapors and/or oxygen deficiencies, will be controlled by engineering and administrative means such as enclosure or confinement of the operation, general and/or local ventilation, or substitution with a less toxic material.

Only after it is has been determined that engineering and administrative controls are not feasible, will the use of respirators be authorized.

4. Responsibilities.

a. Safety and Occupational Health Office (SOHO)

(1) Provide over site and administration for the District Respiratory Protection Program. Perform annual industrial hygiene surveys and exposure assessments of all Little Rock District facilities and special projects to determine respiratory hazards.

(2) Provide guidance for the reduction and elimination of respiratory hazards through the appropriate engineering controls. Provide guidance in determining types of respirators required for specific activities.

(3) Maintain a central record of all District personnel authorized to use respiratory protection, with the physician certification, date of last fit test, and documentation of annual respirator training.

(4) Provide technical assistance in the coordination of all physical evaluations, fit testing, and respirator training activities within the District.

b. Project and Operations Managers, Supervisors and Team Leaders

(1) Develop a written Respiratory Protection Program if respiratory hazards are present at your facility as determined by the industrial hygiene survey, or special work activities. The program must contain all the elements outlined in section 5 of this appendix.

(2) Review employee position hazard analyses and employee special job duties, to determine which employees may be required to use respiratory protection. Attempts should be made to eliminate respiratory hazards through engineering controls.

(3) Provide a copy of the "Request for Respirator Clearance" for each employee to the SOHO prior to medical evaluation and respirator use. A full list of employees required to wear respirators, or who may voluntarily wear respirators shall also be forwarded to the SOHO.

(4) Ensure that employees have been provided documented fit testing for the specific respirator being issued for each task. Schedule all medical clearance physicals, fit-testing and training activities.

c. Employees

(1) Use respiratory protection whenever required, and wear only the respirator issued to them.

(2) Maintain the respirator in a clean and sanitary condition, and be clean shaven whenever wearing a respirator.

(3) Inspect the respirator before each use and determine if respirator is functioning properly. Seek assistance from a competent person when making repairs to respiratory equipment.

(4) Notify supervisor whenever a potentially hazardous atmosphere(dusts, fumes, mist, smoke, gases, vapors, paint, or oxygen deficiencies) exists in the work environment.

(5) Employee shall notify supervisor whenever they request to voluntarily wear a respirator, to ensure that they have been medically cleared to wear a respirator, have been fit-tested to wear the specific respirator requested to be worn, and to ensure the employee has chosen the appropriate respirator for the present respiratory hazard.

5. Respiratory Protection Program. A Respiratory Protection Program, for required and voluntary respirator use, must describe procedures for the following:

a. Training. Each employee required to wear a respirator must be trained in the following areas:

(1) Proper selection, use and limitations of the respirator.

(2) Inspection and fit checking of the respirator.

(3) The nature, extent, and effects of the respiratory hazards to which the employee may be exposed.

(4) An explanation of why engineering or administrative controls are not being applied or are not adequate, and what effort is to be made to reduce or eliminate the need for respiratory protection.

(5) Proper maintenance and cleaning procedures of the respirator

(6) Emergency procedures in the event of respirator failure

b. Respirator Selection.

(1) All respiratory equipment must be certified by the National Institute for Occupational Safety and Health (NIOSH). The selection of all respiratory protective equipment shall comply with all provisions of the OSHA 29 CFR 1910.134(d), regulation governing the selection of respirators.

(2) All respirator equipment used by Little Rock District employees will be furnished by the government through the guidance of the SOHO. The use of non-government furnished respiratory equipment required or for voluntary use is not authorized.

(3) Respirator selection will be based on the type of contaminant(dust, fume, vapor, mist), its concentration, oxygen level, and the concentration of other oxygen displacing gases present.

c. Fit Testing.

(1) Before an employee is required to use any respirator with a negative or positive pressure tight-fighting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. Employee shall be clean shaven for fit test and respirator use.

(2) The fit test will be administered using the OSHA-accepted Qualitative or

Quantitative fit test protocol as contained in Appendix A, of the 29 CFR 1910.134.

(3) Fit testing will be conducted by a competent person, under the direction of the District Industrial Hygienist. Fit testing will be repeated at least annually or under the following conditions:

(a) Weight change of 20 pounds or more since last fit test.

(b) Significant facial scarring in the area of the facepiece seal.

(c) Significant dental changes (multiple extractions or acquiring dentures).

(d) Any other condition that may interfere with facepiece sealing.

d. Medical Surveillance.

(1) Employee selection. Employees selected to perform assignments requiring respiratory protection or who wish to voluntarily wear a respirator must not have a health condition which would impair their ability to wear a respirator.

(2) Medical Evaluation.

(a) Each respirator user shall receive a medical examination, including a pulmonary function test, as outlined in the 29 CFR 1910.134(e) and in accordance with the District Medical Surveillance Program. The medical examination provided shall meet or exceed the standards governing the Federal Occupational Health Service. The employee shall complete the OSHA Medical Respiratory Evaluation Questionnaire, Appendix C of the 29 CFR 1910.134 along with their medical examination.

(b) Follow-up Medical examination. The SOHO shall ensure that a follow-up medical examination is provided for an employee who gives a positive response, to any of questions 1 through 8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination.

(c) The following information must be provided to the physician before the physician can make a recommendation concerning an employee's ability to use a respirator: Type and weight of the respirator to be used, duration and frequency of respirator use, expected physical work effort, additional protective clothing and equipment to be worn, temperature and humidity extremes that may be encountered

(d) The physician shall be provided a copy of the site written respiratory protection program and a copy of the 29 CFR 1910.134 regulation.

(3) Physician Certification. Each respirator user shall, obtain the written opinion of a physician, as to the employee's ability to wear the specific respirator upon which clearance is requested, and that no limiting conditions are present. A copy of the physician certification for respirator use must be forwarded to the SOHO to be kept in the employee's permanent file.

e. Respiratory Equipment Maintenance and Inspection.

(1) Maintenance. All respiratory equipment shall be maintained in accordance with manufacturer's recommendations.

(a) Air Compressors. All oil lubricated, whether standby, station air or stand-alone systems, used for breathing air shall have a high temperature alarm, suitable sorbent beds (oil, water or scale) and a continuous carbon monoxide alarm.

(b) Intake for air compressors shall be located where there is no potential for contamination, or entry of exhaust gases. Fuel powered compressors exhaust shall be at least 20 feet from the intake on the downwind side.

(c) Respirators will be cleaned with soap, water, and disinfectant, and properly stored in plastic bags outlined in 29 CFR 1910.134 Appendix B.

(d) Air cylinders, air supply lines and other respiratory equipment will be properly stored to prevent damage and deterioration.

(2) Inspection. All respiratory equipment shall be thoroughly inspected before and after each use. Equipment in need of repair shall be taken out of service until appropriate corrective actions are performed. All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use.

f. Program Evaluation. The Safety and Occupational Health Office will conduct annual evaluations of all District Facilities in accordance with 29 CFR 1910.134(i) to ensure that the Written Respiratory Protection Programs are being properly implemented. This evaluation will be documented during the annual industrial hygiene surveys.

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APPENDIX S

Personal Protective Clothing and Equipment

1. Purpose. To provide guidance on the selection, use, and maintenance of personal protective equipment (PPE).

2. Applicability. This program applies to all Little Rock District employees.

3. Policy. Personal protective equipment shall not be used as a substitute for engineering, work practice, and/or administrative controls.

4. Responsibilities.

a. Safety and Occupational Health Office (SOHO)

(1) Provide required workplaces assessments and review of job tasks, to determine hazards present, and the necessity for personal protective equipment. 29 CFR 1910.132(d)(1).

(2) Provide over site and recommendations to supervisors in the selection of PPE.

(3) Maintain a central record, updated annually, for each project office on required (documented) PPE training.

b. Project and Operations Managers, Supervisors, and Team Leaders

(1) Provide the type of PPE that is suitable to protect the employee during the accomplishment of their work.

(2) Ensure that funds are available for procurement of needed protective clothing and equipment.

(3) Educate the employee in the correct use and maintenance of their PPE. (Training)

(4) Enforce the correct use of PPE wherever needed.

(5) Inspect employee PPE equipment regularly for defects or wear.

(6) Make provision for the proper cleaning, storage and maintenance of PPE.

c. Employee

(1) Wear the PPE when and wherever required, without any alterations to the equipment.

(2) Properly maintain PPE in accordance with manufactures recommendations.

(3) Inspect PPE before each use and advise supervisors whenever PPE is no longer serviceable.

5. Requirements for PPE program.

a. Assessment and Evaluation. The District IH, project supervisors, and employees, will work together to determine sources of hazards and hazardous work tasks, that exist in the workplace, which may require foot, head, hand, eye, and face protective equipment. Particular categories of hazards to consider are:

(1) Sources of motion: machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects.

(2) Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment.

(3) Sources of chemical exposure.

(4) Sources of harmful dust.

(5) Sources of light radiation: welding, brazing, cutting, furnaces, or heat treating.

(6) Sources of falling objects or potential for employee to fall over 6 feet.

(7) Sources of sharp objects which might pierce the feet or cut the hands.

(8) Sources of rolling, falling, or pinching objects which could crush the feet.

(9) Any electrical hazards.

b. Training. Each employee supplied with PPE must be provided training,which includes all of the following:

(1) When PPE is necessary.

(2) What PPE is necessary.

(3) How to properly don, doff, adjust, and wear the PPE.

(4) The limitations of the PPE.

(5) The proper care, maintenance, useful life and disposal.

(6) Each employee must demonstrate an understanding of his or hers PPE, and ability to
use it properly before being allowed to perform work using the PPE.

c. Certification. The operations/project manager shall verify in writing that each employee has received and understands the required training. Certification should contain the name of employee, date of training, and subject reviewed.

6. Eye and Face Protection.

Prescription Safety Spectacle Program. The supervisor shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors or potentially injurious light radiation. All Little Rock District employees, exposed to the above hazards during the performance of their work, are eligible to receive ANSI Z-87.1 prescription or nonprescription safety spectacles, with permanent side shields, at Government expense. Information should be provided explaining the eye hazard to the employee, the type of eye protection needed (See the selection charts, Tables 1 and 2 below) and the time spent performing tasks involving eye hazards. If prescription glasses are required, the examination will be obtained at the government expense. When the prescription changes, replacement glasses will be provided. Retesting for prescription eyewear is permitted every 2 years. Procurement for safety glasses will be conducted on a standard Corps of Engineers Financial Management System (CEFMS) electronic form 3953.

Table 1. EYE & FACE PROTECTION SELECTION CHART

Source	Assessment of Hazard	Protection
IMPACT-Chipping, grinding, machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding	Flying fragments, large chips, particles, sand, etc	Spectacles with side protection, goggles, or face shields. Goggles with faceshield provides the best protection. 
Heat, Light, & Radiation- Oxy-acetylene & arc Welding, plasma cutting, Oxy-acetylene cutting, air arcing & cavitation repair, torch soldering, torch brazing, casting, and hot dipping	Hot sparks, splash from molten metals, harmful intense rays, optical radiation, glare, high temperatures, poor vision	Welding helmets, tinted welding goggles (coverspec type), welding faceshield. (See Table 2 for filter lens shade numbers for protection against radiant energy) 
Chemicals - Acid and chemicals handling, degreasing, plating	Splash, acid burns, fumes	Goggles, eyecup and cover types. For severe exposure use a face shield over goggles. 
Dust – Woodworking, buffing, general dusty conditions	Nuisance dust	Goggles, eye cup type. 

Note 1. Filter lenses must meet the requirements for shade designations in the 29 CFR 1910.133(a). Tinted and shaded lenses are not filter lenses unless they are marked as such. Protection from light radiation is directly related to filter lens density. Select the darkest shade that allows task performance.
Note 2. Always wear primary eye protection (spectacles with sideshields) under a faceshield.
Note 3. Wears of contact lenses must also wear appropriate eye and face protection devices in eye hazardous environments. Dusty and chemically hazardous environments represent additional hazards to contact lens wearers.
Note 4. Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.

TABLE 2. FILTER LENS SHADE NUMBERS FOR PROTECTION AGAINST RADIANT ENERGY

Welding Operation	Shade Number
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32- inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-,5/32-inch diameter electrodes	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4-inch diameter electrodes	12
Shielded metal-arc welding 5/16-, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8-inch	4 or 5
Gas welding (medium), 1/8-inch to 1/2-inch	5 or 6
Gas welding (heavy), over 1/2-inch	6 or 8
Plasma arc welding, less than 20 arc current	6
Plasma arc welding, 20-100 arc current	8
Plasma arc welding,100-400 arc current	10
Plasma arc welding, 400-800 arc current	11
Air carbon arc cutting (Light), less than 500 arc current	10
Air carbon arc cutting (heavy), 500 to 1000 arc current	11

7. Protective Footwear Program

All District employees whose duties require them to work in a foot-hazard environment, or personnel who frequent field installations and construction projects, are required to use ANSI Z41-1991 approved protective footwear. This footwear will be provided at Government expense. $85 will be allowed for the purchase of safety shoes, and $100 for the purchase of safety boots. Employees who regularly work in foot-hazard areas are authorized the purchase of two serviceable pairs of safety footwear. Employees with appointments less than 180 days are authorized only 1 pair of serviceable safety shoes. When shoes need repair, always replace them, do not repair them. Supervisors should enforce the use safety footwear wherever required.

8. Head Protection: Hard Hat Program

a. All employees working in areas, posing a risk of head injury, will be furnished and required to wear ANSI Z89.1-1986 approved hard hats. Each installation will maintain extra hard hats for visitors. Project/operations managers will be responsible for the enforcement of hard hat usage, and the marking of all hard hat areas at their entry points. Hard hats should not be stored or carried on the rear-window shelf of an automobile, since sunlight and extreme heat may adversely affect the degree of protection.

b. Selection: First, review and understand any electrical hazards

1. Class A helmets, in addition to impact and penetration resistance, provide electrical protection from low-voltage conductors. They are proof tested to 2,200 volts.

2. Class B helmets, in addition to impact and penetration resistance, provide electrical protection from high-voltage conductors. They are proof tested to 20,000 volts)

3. Class C helmets, provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

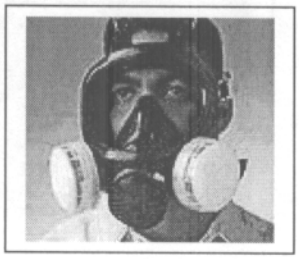
4. Lock and Dam personnel will wear blue hard hats. All other personnel will wear white hard hats marked in accordance with ER 385-1-6. A "Safety Everywhere" sticker should be placed on each side of the hard hat, just above the bands of red reflective tape.

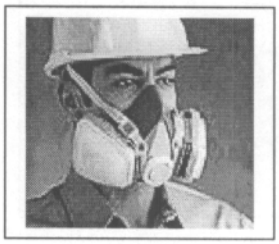
9. Respiratory Protection. Selection of the proper respirator depends upon the following:

The nature of the hazard.
The activity of workers in the hazardous area.
The characteristics of the hazardous operation or process.
The respirator's, capabilities, limitations, assigned protection factors and respirator fit.

2. Those that use activated carbon or other absorbent materials to capture hazardous vapors and gases.

3. A combination of both 1 and 2, dust filtering and gas and vapor filtering.

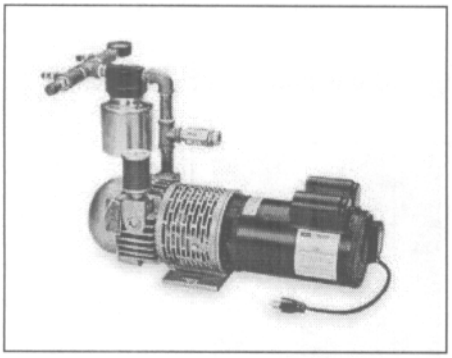




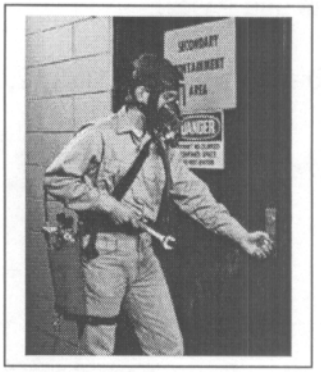
ADVANTAGES AND DISADVANTAGES OF APRs	
Advantages	Disadvantages
• High mobility • Few moving parts • Present little physiological strain to the wearer • Light weight, small size, and ease of maintenance	• Humidity problems • Cannot be used in IDLH or oxygen deficient atmospheres • Limited duration of protection (also hard to determine safe operating time) • Only protects against specific chemicals and up to specific concentrations • Use requires monitoring of contaminant and oxygen levels • Can only be used against gas and vapors provided that the unit has an ESLI (end of service life indicator), or a change out schedule is made available

b. Supplied Air Respirator or Airline Respirator (SAR). The airline respirator has air delivered to the wearer under pressure; either from a compressor or bank of compressed air cylinders. The air may flow continuously, or be delivered as the wearer breathes (pressure demand). The air source must be closely monitored to prevent depletion and no more than 300 feet of airline is allowed. An SCBA escape device is required for entry into an IDLH (immediately dangerous to life and health). Any oxygen deficient atmosphere would represent an IDLH situation.

Respirator Air pump

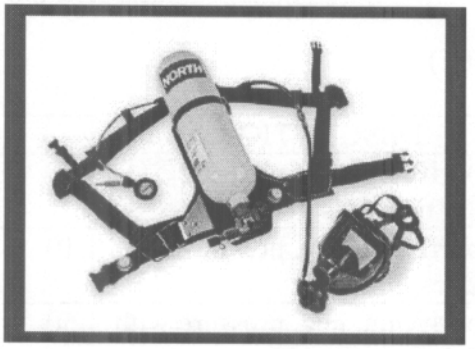


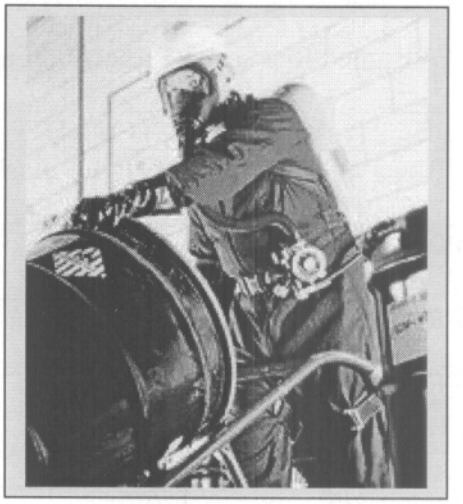
Supplied Airline Respirator with Escape Bottle



ADVANTAGES AND DISADVANTAGES OF SARs	
Advantages	Disadvantages
• Enables longer work periods • Weighs less than SCBA (<5 pounds by itself and around 15 pounds with escape SCBA) • Provides highest level of protection against contaminants and oxygen deficiency (but only with escape SCBA)	• Not for use in IDLH or oxygen deficient atmospheres unless equipped with an escape SCBA • Impairs mobility • Maximum hose length of 300 feet • The longer the hose the less air that is supplied to the facepiece • Airline is vulnerable to damage, chemical contamination, and degradation • Workers must retrace steps to leave work area • Requires supervision/monitoring of air supply system

c. Self-Contained Breathing Apparatus (SCBA). The SCBA consist of a facepiece and regulator mechanism connected to a cylinder of compressed air or oxygen carried by the wearer. The SCBA is used because it allows the wearer to work without being confined by a hose or airline. The wearer of the SCBA completely depends on the air tank to supply clean breathing air.





ADVANTAGES AND DISADVANTAGES OF SCBAs	
Advantages	Disadvantages
• Carries own supply of air allowing comparatively free movement over an unlimited area • Provides highest level of protection against contaminants and oxygen deficiency	• Bulky and heavy making them unsuitable for strenuous work or in a constricted area • Limited service life (30 or 60 minutes)

d. Assigned Respirator Protection Factors (APF)

TYPE	MODE	CONFIG	DESCRIPTION	APF
APR	NP (Neg. Press)	Quarter mask	Air purifying, neg. pressure quarter mask respirator	5
APR	NP	Half mask	Air purifying, neg. pressure half mask respirator	10
APR	NP	FF(full face)	Air purifying, neg. pressure with a full facepiece mask	50
SAR	NP	FF	Self-contained breathing apparatus, demand mode with a full facepiece	50
SAR	PP (Pos. Press)	FF	Supplied air, pressures demand mode with a full facepiece	2,000
SAR	PP	FF	Supplied air, pressure demand mode with a full facepiece, and auxiliary self-contained air supply for escape	10,000 (can be used in IDLH environment)
SAR	PP	FF	Self-contained breathing apparatus, pressure demand mode with a full facepiece, and auxiliary self-contained air supply for escape	10,000 (can be used in IDLH environment)
Note: If Qualitative fit testing is used, then the maximum APF is 10.				

10. Fall Protection.

a. Personal fall arrest systems require the use of body harnesses: body belts are not acceptable as part of personal fall arrest systems.

b. The use of a body belt is permitted in a positioning device system.

c. Full Body Harnesses.

(1) Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials; shall have corrosion resistant finish; and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

(2) D-rings, snaphooks, and other connectors shall have a minimum tensile strength of 5,000 lbs. D-rings and snaphooks shall be proof-tested to a minimum tensile load of 3,600 lbs. without cracking, breaking, or taking permanent deformation.

(3) Full-body harness systems shall decelerate and bring the employee to a complete stop within 1 m (42 in), excluding lifeline elongation, after free fall distance.

(4) Full-body harness systems, when stopping or preventing a fall, shall not produce an arresting force on an employee of more than 10 times the employee's weight or 1,800 lbs, whichever is lower.

d. Lifelines and lanyards.

(1) Lanyards and vertical lifelines shall have a minimum tensile strength of 5,000 lbs.

(2) Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a factor of safety of at least two.

(3) Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 ft or less shall be capable of sustaining a minimum tensile load of 3,000 lbs applied to the device, with the lifeline or lanyard in the fully extended position. Self-retracting lifelines and lanyards that do not limit free fall distance to 2 ft or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 lbs applied to the device with the lifeline or lanyard in the fully extended position.

(4) Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers.

e. Lineman's Equipment

(1) All fabric for safety straps shall be capable of withstanding an alternating current dielectric test of not less than 25,000 volts per foot "dry" for 3 minutes, without visible deterioration.

(2) All fabric and leather used shall be capable of being tested for leakage current and not exceed 1 milliampere when a potential of 3,000 volts is applied to the electrodes 12 inches apart.

(3) Direct current testing may be permitted in lieu of alternating current testing.

11. Personal Flotation Devices.

a. Type III, Type V, or better U.S. Coast Guard approved International Orange personal floatation devices (PFD) shall be provided to and properly worn by all persons in the following circumstances:

- On floating pipelines, pontoons, rafts, or stages.
- On structures extending over or next to water except where guardrails or safety nets are provided for employees.
- Working alone at night where there are drowning hazards, regardless of other safeguards provided.
- In skiffs, small boats, or launches, unless in an inclosed cabin or cockpit.
- Wherever there is a drowning hazard.

b. Before and after each use, the PFD shall be inspected for defects that would alter its strength or buoyancy. Defective devices or devices with less than 13 lbs buoyancy shall be removed from service.

c. Reflective tape and PFD lights.

(1) All PFDs shall be equipped with retroreflective tape as specified in 46 CFR 25.25-15.

(2) PFD lights conforming to 46 CFR 161.012 shall be required whenever there is potential need for life rings to be used after dark. On shore installations, at least one life ring, and every third one thereafter, shall have a PFD light attached. PFD lights on life rings are required only in locations where adequate general lighting is not provided.

(3) On Coast Guard certified vessels, PFDs are required to have automatic floating electric water lights as required by 46 CFR 161.010: on all other floating plant, at least one life ring, and every third one thereafter, shall have an automatic floating electric water light attached.

12. Protective Equipment for Electrical workers. Rubber is the best material for insulating workers against shocks and burns. Rubber protective equipment for electrical workers must conform to the requirements established by ANSI as specified in the following Table.

ITEM	STANDARD
Rubber insulating gloves	ASTM D 120-87.
Rubber matting for use around electrical apparatus	ASTM D 178-88 or 178-93.
Rubber insulating blankets	ASTM D 1048-93 or 1048-88A.
Rubber insulating hoods	ASTM 1048-88 OR 1049-93.
Rubber insulating line hose	ASTM D 1050-90.
Rubber insulating sleeves	ASTM D 1051-87

13. Hand Protection

a. Personal Protective Equipment Check

- Leather Work Gloves for rough product handling.
- Electrical Gloves for all electrical work.
- Chemical Gloves - for acids, corrosives, etc.
- Medical Gloves - for Pathogen cleanup and first aid.
- Cut Resistant Gloves - when using sharp tools and knives.
- Thermal Protection Gloves - for hot and cold handling.

b. Work Area Safety Check

- Ensure machine guards are in place.
- Guard all areas that have pinch, sear or roll points.
- Place protection on all sharp edges.

c. Pre-Use Safety Check

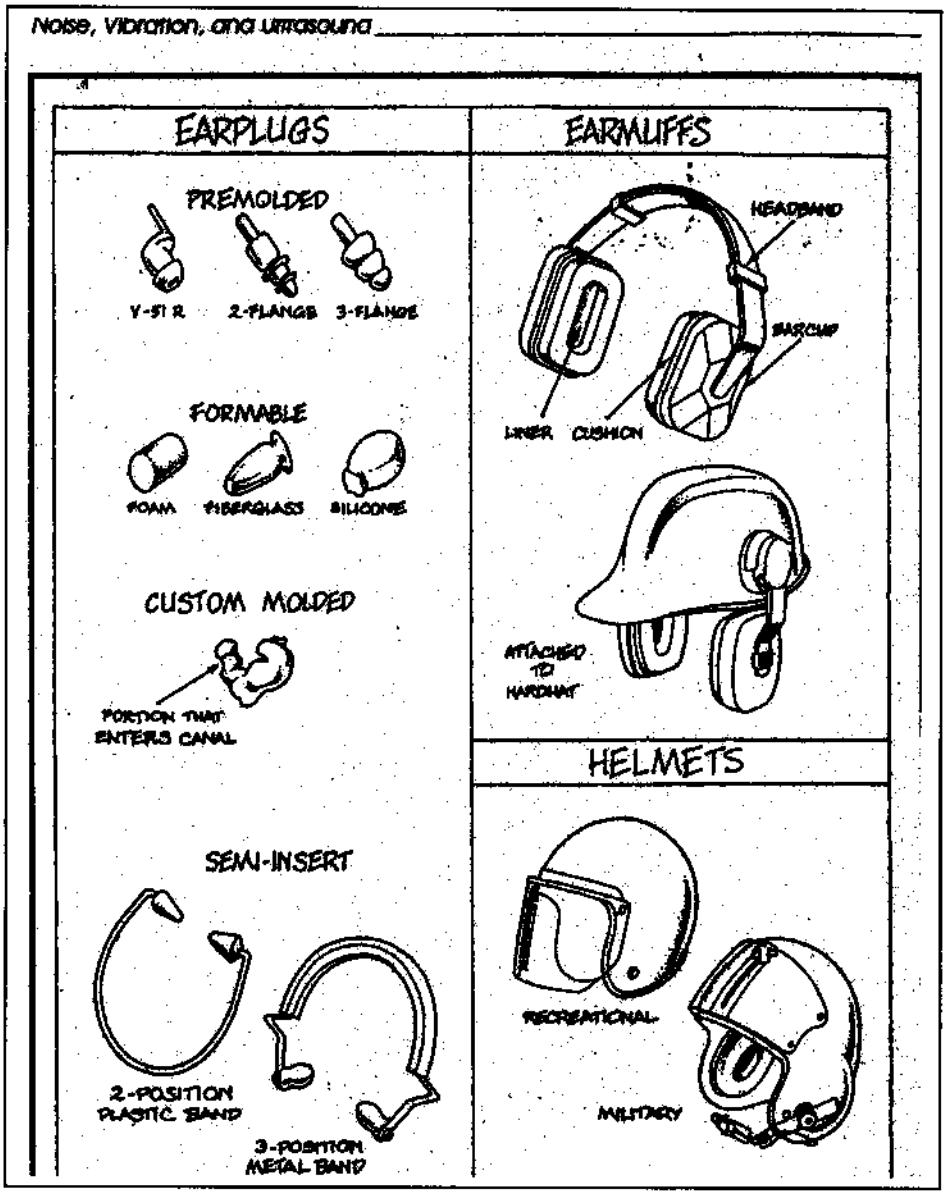
- Use the proper glove for the task .
- Remove rings & bracelets in production areas.
- Do not wear glove if they can be caught in machinery.
- Check gloves for wear and damage.

d. Operation Safety

- Never place hands in machinery.
- Never adjust equipment unless locked and tagged.
- Never use chemicals without training and knowledge of the hazards.
- Wash hands after using chemicals.

- Store gloves properly to prevent damage.

14. Hearing Protection. Hearing protection usage is required by workers exposed to 85 dBA and above. Training should be provided in the proper use of hearing protection, including awareness training of noise hazardous areas at the worksite. It is recommended that when a worker's time weighted average of noise exposure exceeds 75 dBA, that hearing protection be worn.



APPENDIX T

Definitions

1. Air-purifying respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

2. Article means a manufactured item other than a fluid or particle that is 1) Formed to a specific shape or design during manufacture. 2) Has end use function(s) dependent in whole or in part upon its shape or design during end use. 3) Under normal conditions of use does not release more than very small quantities (minute or trace amounts of a hazardous chemical), and does not pose a physical hazard or health risk to employees.

3. Atmosphere-supplying respirator - a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

4. Attendant/Competent Person - An individual stationed outside the confined space who is trained to monitor and observe the authorized entrants working inside the confined space.

5. Authorized Entrant - An employee who is authorized by the employer to enter a confined space.

6. Blanking or Blinding - The absolute closure of a pipe, line, or duct, by fastening across its bore, a solid plate or cap. This must extend at least to the outer edge of the flange at which it is attached, and be capable of withstanding the maximum upstream pressure.

7. Blood means human blood, human blood components, and products made from human blood.

8. Bloodborne Pathogens - pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

9. Canister or cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

10. Chemical means any element, chemical compound or mixture of elements and/or compounds.

11. Chemical manufacturer means an employer with a workplace where chemical(s) are produced for use or distribution.

12. Chemical name means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC), or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

13. Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed using blood or other potentially infectious materials.

14. Combustible liquid means any liquid having a flashpoint at or above 100 deg. F (37.8 deg. C), but below 200 deg. F (93.3 deg. C), except any mixture having components with flashpoints of 200 deg. F (93.3 deg. C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

15. Commercial account means an arrangement whereby a retail distributor sells hazardous chemicals to an employer, generally in large quantities over time and/or at costs that are below the regular retail price.

16. Common name means any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.

17. Compressed gas: 1) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 deg. F (21.1 deg. C). 2) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 deg. F (54.4 deg. C) regardless of the pressure at 70 deg. F (21.1 deg. C). 3) A liquid having a vapor pressure exceeding 40 psi at 100 deg. F (37.8 deg. C) as determined by ASTM D-323-72.

18. Confined Space – A space that: 1) is large enough and so configured that an employee can bodily enter and perform assigned work. 2) has limited or restricted means for entry or exit (tanks, vaults, vessels, silos, storage bins, hoppers vaults, and turbine pits are spaces that might have limited means of entry.

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

20. Contaminant - Any harmful, irritating nuisance material, foreign to the normal atmosphere. Contaminants can be particulates, gases or vapors.

21. Contaminated means the presence or the reasonably anticipated presence of blood, hazardous chemicals, or other potentially infectious materials on an item or surface.

22. Contaminated Laundry - laundry that has been soiled with blood, hazardous chemicals, or other potentially infectious materials or may contain sharps.

23. Contaminated Sharps - any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

24. Decontamination means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

25. Demand respirator means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

26. Double Block and Bleed - The closure of a line, duct or pipe by locking and tagging a drain or vent which is open to the atmosphere in the line between two locked-closed valves.

27. Dusts - A submicroscopic to visible solid, which is generated by such processes as handling, grinding, crushing, drilling or blasting. Dust does not diffuse in air, but settles under the influence of gravity. A fiber is a special class of dust, which has a length at least three times its diameter.

28. Emergency means any occurrence, including failure of hazard control or monitoring equipment, or events internal or external to the confined space, which could endanger entrants.

29. Emergency situation means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

30. Employee exposure means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

31. End-of-service-life indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

32. Engineering Controls (1) are process changes, substitution of material, isolation of work activity, mechanical or natural ventilation, which lower the concentration of respiratory contaminants at the worker's breathing zone below levels which may cause harm to the worker.

33. Engineering Controls (2) means controls (e.g., sharps disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogens hazard from the workplace.

34. Engulfment - The surrounding and effective capture of a person by a liquid or finely divided solid substance.

35. Entry - the act by which a person intentionally passes through an opening into a confined space, including work activities in that space. The entrant is considered to have entered as soon as any part of the entrant's face breaks the plane of an opening into the space.

36. Entry Permit - The written or printed document established by the employer, the content of which is based on the employer's hazard identification and evaluation for that confined space and is the instrument by which the employer authorizes his or her employees to enter that confined space. The permit defines the following:

- conditions under which the space may be entered
- states the reason(s) for entering the space
- the anticipated hazards of the entry
- lists eligible attendants, entrants, and the individuals who may be in charge of the entry
- establishes the length of time for which the permit may remain valid.

37. Escape-only respirator means a respirator intended to be used only for emergency exit.

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

39. Exposure or exposed means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. (Subjected means in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

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

41. Filter or air purifying element means a component used in respirators to remove solid or liquid aerosols from the inspired air.

42. Filtering facepiece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

43. Fit factor - a quantitative estimate of the fit of a particular respirator to a specific worker, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

44. Fit test - the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

45. Flammable - a chemical that falls into one of the following categories:

a. Flammable Aerosol - means an aerosol that, 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 (a flame extending back to the valve) at any degree of valve opening;

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

c. Flammable Liquid - any liquid having a flashpoint below 100 deg. F (37.8 deg. C), except any mixture having components with flashpoints of 100 deg. F (37.8 deg. C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.

d. Flammable Solid - a solid, other than a blasting agent or explosive as defined in 29 CFR 1910.109(a), 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 chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, 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.

46. Flashpoint - the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

47. Fumes - A minute solid particle normally less than one micrometer in diameter, formed by heating of a solid. The
physical change is often accompanied by a chemical reaction such as oxidation.

48. Gases - A substance in the gaseous state at normal work room temperature and pressure.

49. Hand washing Facilities - a facility providing an adequate supply of running potable water, soap, and single use towels or hot air drying machines.

50. HBV means hepatitis B virus.

51. HIV means human immunodeficiency virus.

52. Hazard warning - any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the specific physical and health hazard(s), including target organ effects of the chemical(s) in the container(s).

53. Hazardous Atmosphere - An atmosphere which exposes employees to a risk of death, incapacitation, injury or acute illness from any of the following causes:

- An explosive gas, vapor, or mist in excess of 10% of its lower explosive limit (LEL);

- An airborne combustible dust at a concentration that obscures vision at a distance of five feet or less;

- An atmospheric oxygen concentration below 19.5% or above 22%;

- An atmospheric concentration of any substance in excess of its established permissible exposure limit (PEL)

- Any atmospheric condition recognized as immediately dangerous to life or health.

54. Hazardous chemical - any chemical that poses a physical or health hazard.

55. Health hazard - a chemical for which there is statistically 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. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

56. Helmet means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

57. High efficiency particulate air (HEPA) filter means a filter that is at least 99.97% efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.

58. Hood means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

59. Hot Work Permit – An employer's written authorization to perform operations, within the confined space, which could provide a source of ignition, such as riveting, welding, cutting, burning or heating.

60. Identity - any chemical or common name indicated on the material safety data sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

61. Immediate use - that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

62. Immediately dangerous to life or health (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

63. Imminent danger means any condition or practice of employment which could reasonably be expected to cause death or serious physical harm immediately.

64. Inerting - Rendering the atmosphere of a confined space nonflammable, non-explosive or otherwise chemically non-reactive by such means as displacing or diluting the original atmosphere with steam or gas which is non-reactive with respect to that space.

65. Interior structural fire fighting means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures, which are involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155)

66. Isolation - The separation of a confined space from unwanted forms of energy, which could be a serious hazard to authorized entrants.

67. Label - any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

68. Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

69. Loose-fitting facepiece means a respiratory inlet covering that is designed to form a partial seal with the face.

70. Material safety data sheet (MSDS) - written or printed material concerning a hazardous chemical prepared in accordance with paragraph (g) of the 29 CFR 1910.1200.

71. Mists – A suspended liquid droplet, of submicroscopic to visible in size, generated by condensation from the gaseous to the liquid state or by breaking up a liquid into a dispersed state such as splashing, spraying, bubbling or boiling.

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

73. Negative pressure respirator (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

74. Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

75. Organic peroxide - an organic compound that contains the bivalent -O-O-structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

76. Other Potentially Infectious Materials means (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

77. Oxidizer - a chemical other than a blasting agent or explosive as defined in 29 CFR 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

78. Oxygen deficient atmosphere - an atmosphere with oxygen content below 19.5% by volume.

79. Oxygen Enriched - any atmosphere that contains greater than 22% oxygen by volume.

80. Parenteral means piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

81. Particulates - A suspension of fine solids or liquids in the air such as dust, fumes, mists, or smoke.

82. Permit Required Confined Space - Any space large enough and so configured that an employee can bodily enter and perform work. Confined spaces usually have limited or restricted means of entry or exit, and are not designed, nor intended for permanent employee occupancy. A confined space has one or more of the following characteristics: 1) Contains or has known potential to contain a hazardous atmosphere. 2) Contains materials/chemicals with the potential for suffocation or engulfment of the entrant. 3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or a floor, which slopes downward and tapers to a smaller cross-section. 4) Contains any other recognized serious safety hazard.

83. Personal Protective Equipment is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard, are not considered to be personal protective equipment.

84. 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, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

85. Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services.

86. Positive pressure respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

87. Powered air-purifying respirator (PAPR) - an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

88. Pressure demand respirator - a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

89. Pyrophoric - a chemical that will ignite spontaneously in air at a temperature of 130 deg. F (54.4 deg. C) or below.

90. Qualitative fit test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

91. Quantitative fit test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

92. Regulated Waste –

- Liquid or semi-liquid blood or other potentially infectious material
- Contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed
- Items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling
- Contaminated sharps and pathological and microbiological wastes containing blood or other potentially infectious materials

93. Respirator - A device designed to protect the wearer from the inhalation of harmful atmospheres.

94. Respiratory inlet covering means that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

95. Safety and Health Inspector means any person authorized to perform inspections for the purpose of this regulation. The person may be the District Safety Manager or a District technical or professional employee.

96. Safety Manager means that individual responsible for the management of the District's safety and occupational health program.

97. Self-contained breathing apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

98. Service life - the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

99. Smoke - The aerosol mixture resulting from the incomplete combustion of carbonaceous material such as coal, oil, tar and tobacco.

100. Source Individual - any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.

101. Specific chemical identity - the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

102. Sterilize means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

103. Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

104. Tight-fitting facepiece means a respiratory inlet covering that forms a complete seal with the face.

105. Trade secret - any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.

106. Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

107. Unstable (reactive) - a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

108. Use - to package, handle, react, emit, extract, generate as a byproduct, or transfer.

109. User seal check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

110. Vapors - The gaseous state of a substance that is either liquid or solid at normal work room temperature or pressure.

111. Water-reactive - a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

112. Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed, such as prohibiting recapping of needles by a two-handed technique.

113. Workplace - an establishment, job site, or project, at one geographical location containing one or more work areas.

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APPENDIX U

References

1. Appendix A. Indoctrination, training, and Safety Meetings.

a. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect. 01.B, sect. 03.D

b. 29 CFR 1910 and 29 CFR 1926

2. Appendix B. Fire Prevention Program.

a. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect. 09

b. NFPA standards 10, 11, 12, 15, 17

c. 29 CFR 1910.164, 29 CFR 1910.165

3. Appendix C. Activity Hazard Analysis.

EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect. 01.A.09 and Figure 1-1.

4. Appendix D. Position Hazard Analysis.

EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, section 01.A.06

5. Appendix E. Accident Notification and Reporting.

a. AR 385-40, Accident Reporting and Records, 1 November 1994.

b, EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect.01.D

6. Appendix F. Standard Army Safety and Occupation Health Inspection.

a. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996.

b. 29 CFR 1910

c. 29 CFR 1926

7. Appendix G. Employee Report of Unsafe and Unhealthful Working Conditions.

a. 29 CFR 1960.28 and 29 CFR 1960.46

b. Forms: DA Form 4755, Employee Report of Alleged Unsafe or Unhealthful Working Conditions, DA Form 4756, Installation Hazard Abatement Plan.

8. Appendix H. Safety in Contract Work.

29 CFR 1910, 29 CFR 1926

9. Appendix I. Public Safety.

a. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect.05.i

b. AR 385-15

10. Appendix J. Safety Awards Program.

a. SWDR 672-20, Incentive Awards, dated 15 October 1999.

b. AR 672-20, Decorations, Awards, and Honors, Incentive Awards, dated 26 February 1999.

11. Appendix K. Ergonomics.

DA PAM 40-21, Ergonomics Program, dated 15 May 2000.

12. Appendix L. Industrial Hygiene Program.

a. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996.

b. 29 CFR 1910

c. 29 CFR 1926

13. Appendix M. Hazard Communication Program.

a. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect.06.

b. 29 CFR 1910.1200

14. Appendix N. Confined Space Program.

a. 29 CFR 1910.146

b. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect.06.i.

c. Complete Confined Spaces Handbook by John F. Rekus, MS, CIH, CSP. National Safety Council, Lewis Publishers, 1994.

15. Appendix O. Medical Surveillance Program.

a. 29 CFR 1910.95, Hearing Conservation.

b. 29 CFR 1926.1101, Asbestos.

c. 29 CFR 1926.62, Lead.

d. 29 CFR 1910.1030, Bloodborne pathogens.

e. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, Appendix K.

f. 29 CFR 1910.134.

g. AR 40-5, Preventive Medicine, 15 October 1990.

16. Appendix P. Bloodborne Pathogens Program.

a. 29 CFR 1910.1030.

b. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect.03.A.06.

17. Appendix Q. Hearing Conservation Program.

a. 29 CFR 1910.95.

b. 29 CFR 1926.52.

c. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect.05.C.

18. Appendix R. Respiratory Protection Program.

29 CFR 1910.134

19. Appendix S. Personal Protective Clothing and Equipment.

a. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996, sect.05.

b. 29 CFR 1910.132.

c. American National Standard, Practice for Occupational and Education Eye and Face Protection – ANSI Z87.1-1989.

20. Appendix T. Definitions.

a. 29 CFR 1910.

b. 29 CFR 1926.

c. EM 385-1-1, U. S. Army Corps of Engineers Safety & Health Requirements Manual, dated 3 September 1996.