

**SAFE WORK PRACTICES AND COMPLIANCE
STANDARDS HANDBOOK (Revised March 1999)**

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PREFACE

Accidents in the workplace and its costs, in terms of injuries to employees and other losses, is a serious concern and has always been the focus of the Department's loss prevention program. The data from the Division of Risk Management, Florida Department of Insurance, indicates that **more than 57% of total incurred cost of all claims for FDOT represents worker's compensation**, the rest of the costs distributed among general liability, auto liability, property loss and others. Implementation of the loss prevention procedure and observance of the safe work practices would help reduce the incidents resulting in these losses.

The purpose of this Handbook is to provide FDOT employees with information on safe work practices that must be observed in work activities and operations conducted at FDOT facilities. The Handbook will also provide information on the requirements of the workplace safety and health standards of the State Department of Labor and Employment Security under **Rule Chapters 38I-10, 20, 30, 40, 50, 60 and 74 of the Florida Administrative Code**, and the safety

program requirements under *Chapter 284.50, Florida Statutes*.

This Handbook is issued to all FDOT Managers and copies are available from Maps and Publications, free of charge to FDOT employees. Copies may also be obtained from the State Safety Office, 605 Suwannee St., MS 53, Tallahassee, FL 32399-0450.

Updates to the Handbook will be issued by the State Safety Office as needed. Significant changes and updates will be covered at the biannual meetings of FDOT safety personnel. For any questions and suggestions concerning the Handbook, contact the State Safety Office at SUNCOM 278-3546 or (850) 488-3546.

Chapter 1

WORKPLACE SAFETY COMMITTEES

A workplace safety committee is a group of employees in non-supervisory and supervisory capacities, organized to actively participate in the Department's Loss Prevention Program and make recommendations to promote safety and health in the workplace, as required under *Rule Chapter 38I-74, Florida Administrative Code*.

1.1 GENERAL REQUIREMENTS

1.1.1 A workplace safety committee shall be established in each District and the Central Office of the Department. A committee may be established for each unit location or a centralized committee may be established to represent all locations. The District Secretary/Central Office Assistant Secretary or his/her designee, have the discretion as to the form of committee that will be established.

1.1.2 The committee will be composed of employee representatives and employer representatives whose number in the committee shall not exceed the number of employee representatives. The District Secretary/ Assistant Secretary or his/her designee, shall have the discretion of determining the number of members that will serve in the committee, and the length of tenure of the members.

1.2 COMMITTEE FUNCTIONS

1.2.1 To generate and maintain interest in safety for all employees.

1.2.2 Assist in the identification of unsafe conditions and practices and make recommendations for reduction or elimination of such conditions and practices.

1.2.3 Assist in conducting safety inspections and hazard identification as needed, including fleet and maintenance issues.

1.2.4 Make recommendations in publicizing and implementation of safety policies and procedures including safety awareness and incentive programs.

1.2.5 Meet regularly at least once every quarter.

1.3 COMMITTEE STRUCTURE

1.3.1 A chairman shall be selected by the committee to organize and conduct the meetings.

1.3.2 A secretary shall be selected by the committee to take notes during the meetings and distribute the minutes to all employees.

1.3.3 Committee members should be rotated at least annually.

Chapter 2

SAFETY AWARENESS

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Creating and maintaining employee interest in safety is a necessary element in the Department's loss prevention program, consistent with the requirements of *Chapter 284.50, Florida Statute*. Employees need to be motivated into being involved and take part in the loss prevention program activities.

2.1 OBJECTIVES

2.1.1 Safety awareness program should aim towards:

- (A) Developing safe habits and attitudes among employees.
- (B) Focusing attention to specific causes of accidents.
- (C) Creating an opportunity for employees to participate in program activities.
- (D) Providing a channel of communication between employees and management.

2.2 PROGRAM ACTIVITIES

2.2.1 Each Unit Manager/Office Heads shall ensure that:

- (A) An employee awareness program is promoted to develop and maintain an on- going interest in safety among employees
- (B) Adequate facilities including classrooms, equipment and supplies necessary to effectively conduct the program are made available.

2.2.2 The following activities are given consideration for the awareness program.

(A) Safety Meetings - Both on and off-the-job safety related subjects may be topics for safety meetings. Safety themes provided for each month in the Department's "Safety Advisor" may also be used as topics for the meetings.

(1) Meetings will be conducted by the Supervisor or any other personnel that the Unit Manager/or Office Head may designate. Meetings should be held monthly, or in the case of an office environment, meetings should be held at least quarterly. All personnel will be encouraged to attend the meetings.

(2) Topics for the safety meetings should be as specific as possible, for example, potential hazards of a job, reports of injuries since last meeting, or findings of a safety inspection.

(3) Safety and Health Specialists/ designated safety persons will assist those who will conduct the meetings by helping in the selection of videos, safety materials and other visual aids.

(4) Documentation of topics and employees' attendance to be maintained for one (1) calendar year at the unit level.

(B) Safety committees. Employee membership and participation in safety committees should be encouraged.

(C) Safety bulletin boards. Safety bulletin boards where the "Safety Advisor", notices and minutes of safety meetings, and relevant safety information can be posted should be available and maintained. Safety news and photographs of activities and other publications should also be posted.

(D) Newsletter(s). The "Safety Advisor", published by the Safety Office should be distributed and made available to all employees. These may also be available in facility reception areas and break rooms. Other safety related publications may also be utilized.

(E) Employee training. Short training courses that will increase employees safety awareness both on-or off-the job.

(F) Safety Awards. Awards should be considered to recognize individuals or group of employees or units/offices for participation and involvement in safety programs, activities or for exemplary or notable safety achievements.

(G) Safety Observation. Employee participation in reporting work area conditions and work practices.

2.2.3 District Safety and Health Managers/designated safety persons shall ensure that the awareness program is actively promoted.

Chapter 3

SAFETY INSPECTION

3.1 PURPOSE

The purpose of safety inspections is to identify and control hazards and unsafe work practices. Hazards and unsafe work practices found during these safety inspections should be reported and measures taken to have it corrected. A safety checklist would be a useful tool in conducting these safety inspections. The checklists need not include every item that will be observed in any facility/ activity, nor must it be referred to in a step by step fashion. However, it should be comprehensive enough to cover the important details of operations, functions, and facilities.

3.2 SAFETY INSPECTION

The Unit Manager/Office Head shall ensure that safety inspection of work activities and facilities are conducted in a regular basis. Safety inspection shall be made an integral part of the function of the supervisors and the safety personnel/ designated safety person.

3.3 RESPONSIBILITIES

3.3.1 Supervisors shall:

- (A) Conduct inspection of all work operations and facilities for which they are responsible for on regular basis. This should include inspections done on routine periodic basis, for example, weekly, monthly, or quarterly and informal daily inspection.
- (B) Use an inspection checklist as a guide in conducting the inspection.
- (C) Document any deficiencies found during the inspection and include what action needs to be taken to

correct the deficiencies. Follow up _____ to ensure that the corrective action was taken.

(D) Maintain inspection records for one calendar year.

3.3.2 Safety and Health Specialist/Designated safety person shall:

(A) Conduct periodic inspections, for example, monthly, quarterly, or _____ semi-annually, work operations and facilities.

(B) Use a safety check list as a guide in conducting the inspection.

(C) When deficiencies are identified, record action(s) to be taken to correct _____ the deficiencies. Follow-up to ensure that action was taken.

(D) Maintain inspection records for one calendar year.

3.3.3 District Safety and Health Managers shall:

(A) Conduct spot inspections to ensure that safety inspections are being conducted and that action have been taken to correct deficiencies found during the safety inspection.

(B) Assist in the development of safety inspection check lists.

(C) Monitor the progress of the safety inspection program.

3.4 ACCIDENT PREVENTION TAGS

During daily work and maintenance of the FDOT facilities, it is necessary _____ to work on electric lines, equipment, machinery, piping systems, and other _____ processes. As a means of warning employees of a hazardous condition, _____ defective equipment or other hazards, different type of accident _____ prevention tags are used.

3.4.1 Authority To Issue Accident Prevention Tags

Each unit manager/office shall designate employees who are authorized to issue accident prevention tags. Only those designated employees and the District Safety and Health Managers will have the authority to issue these tags.

3.4.2 Tags

As a means of warning employees of potential or immediate safety hazards, different types of tags are used.

(A) **Danger Tags** are used to identify major safety hazards of materials, tools, structures, and equipment and indicates that these materials, tools, structures and equipment are no longer safe to use because of defects, abuse, and wear.

(B) **Caution Tags** are used only to warn against potential hazards and caution against unsafe practices or conditions.

(C) **Out-of-Order Tags** are used to indicate that a specific piece of equipment or machinery it is out of order and any attempt to use it is prohibited.

3.4.3 Removal of Tags

3.4.3.1 Only employees authorized to issue accident prevention tags can remove the tags. Tags will be removed only when the authorized employee has determined that:

(A) The unsafe item or equipment has been taken out of service and repaired, replaced or taken out of service permanently; or

(B) The unsafe condition has been corrected or eliminated.

3.5 UNAUTHORIZED REMOVAL OF TAGS

Any employee removing a tag without the authorized employee's knowledge shall be subject to disciplinary action in accordance with the Department's *Conduct Standards, Rule 14.17.012, F.A.C.*

Chapter 4

FIRST AID/UNIVERSAL PRECAUTIONS

4.1 GENERAL

4.1.1 Medical attention must be available to all employees in the event of serious injuries.

4.1.2 Transportation must also be made available to transport an injured employee to an appropriate physician, walk-in facility, emergency medical facility or other health care facility.

4.1.3 Emergency telephone numbers, "911" or for medical clinics or health care facilities where injured employees could be referred, shall be posted in plain view on or near each telephone.

4.1.4 First aid kits are available at all work sites including offices and, at a minimum, stocked with the following:

Band aids	2 boxes
2" compress bandages	1 box
4" compress bandages	1 box
Triangular bandage	1 box
Eye first aid dressing	1 box
Ammonia (inhalants)	1 box
Alcohol wipes	1 box
Antiseptic ointment (cream)	1 box
Sting kill wipes	1 box
Mouth shield (rescue breather)	1 each
Gloves, latex, disposable	2 pairs
Goggles	1 pair
Waste Disposal Bag (Baggie)	2 bags

4.1.5 In all work areas or operations where the eyes and body of employees may be exposed to injurious corrosive materials, facilities for quick washing or drenching of the eyes and body are available.

4.2 SAFE WORK PRACTICES

4.2.1 When an employee is injured, the immediate supervisor shall see to it that the employee receives assistance, and either first aid or medical treatment is provided. Depending on the extent of injury, there may be a need to call "911" or the employee may be directed or assisted to the appropriate walk-in facility, emergency medical facility or other health care facility.

4.2.2 Whenever possible the injured employee, if physically able, will be assisted in performing self-aid and clean-up so as not to expose other employees to blood and other body fluids.

4.2.3 **Universal precautions** should be observed while assisting injured employees to prevent unanticipated exposure to blood or other body fluids. Gloves should be worn to prevent skin contact with the fluids.

4.2.4 Hands shall be washed immediately with soap and water after removal of the gloves.

4.2.5 Contaminated bandages, gauzes, and gloves shall be placed in the plastic bag (baggie) and disposed of as ordinary trash.

4.2.6 Exposure incidents involving blood or other body fluids shall be reported in accordance with the requirements of the Bloodborne Pathogens Exposure Control Plan, *Chapter 8, Section 6* of this Handbook.

Chapter 5

SAFE WORK PRACTICES

Safe work practices have been established for certain operations conducted at FDOT facilities. This chapter provides information on work practices which when observed, should minimize the occurrence of accidents thereby reducing the incidence of injuries while performing such operations.

Section 1

MANUAL MATERIALS HANDLING

5.1.1 The Unit Manager/Office Head must ensure, whenever feasible, that mechanical lifting and carrying aids are provided or made available to employees where manual materials handling operations are routinely being performed.

5.1.2 **Lifting.** Before attempting to manually handle any load, the employee shall:

- (A) Size up the load as to its weight, size and shape;
- (B) Use, when available, lifting and carrying aids such as hand trucks, dollies, pallet jacks and carts; or
- (C) Get assistance from a co-employee.
- (D) Observe the following:
 - (1) Plan the move before lifting; remove obstructions from the chosen pathway.
 - (2) Place the feet about a foot apart and close to the object for good balance.
 - (3) Bend the knees to a comfortable position and get a good grip of the object with the hands and fingers. Use handles when present. Never lift objects if hands are greasy or wet.
 - (4) Using both leg and back muscles, lift the load straight up, smoothly and evenly. Push with the legs, keep load close to the body.
 - (5) Lift the object into carrying position, avoiding twisting movements until the lift is completed.
 - (6) Turn the body with changes of foot position, making sure the path of travel is clear.
 - (7) Using both leg and back muscles, comfortably lower the load by bending the knees. When the load is securely in place, release the grip. Setting down the load properly is just as important as picking it up.

- (8) Do not lift an object from the floor to a level above the waist in one motion. Set the load down on a table or bench and then adjust the grip before lifting it higher.
- (9) Slide materials to the end of the tailgate before attempting to lift them off a pick-up truck. Do not lift over the walls or tailgate of the truck bed.
- (10) If assistance is available, coordinate and communicate movements with the employee assisting with the lift.

Section 2

PERSONAL PROTECTIVE EQUIPMENT AND LIFE SAVING EQUIPMENT

5.2.1 PERSONAL PROTECTIVE EQUIPMENT

The purpose of personal protective equipment is to provide a barrier or shield between the employees and chemical or physical hazards present in the workplace or isolate employee from such hazards. Employees are required to wear personal protective equipment appropriate for tasks that they will perform.

5.2.1.1 Hazard Assessment and Equipment Selection

5.2.1.1.1 The Unit Manager/Office Head shall ensure that:

- (A) An assessment is conducted to determine what hazards are present of the workplace which would necessitate the use of personal protective equipment;
- (B) Sources of hazards are identified and the type and level of risk or seriousness of potential injury from each identified hazard;
- (C) Proper personal protective equipment is selected and used that will protect the affected

employee(s) from the identified hazards;

(D) Approved equipment are used, tested, inspected, and properly maintained;

(E) Employees are trained on:

(1) When personal protective equipment is necessary;

(2) What personal protective equipment is necessary;

(3) How to properly don, doff, adjust and wear personal protective equipment;

(4) The limitations of the personal protective equipment;

(5) The proper care, maintenance, useful life and disposal of the personal protective equipment; and

(F) Employees are retrained when there is reason to believe that an affected employee already trained does not have the understanding and skill to demonstrate proper use and care of personal protective equipment, or if there are changes in the workplace or changes in types of personal protective equipment used.

5.2.1.2 Head Protection

(A) All employees shall be required and supervisors shall make sure that appropriate head protection is worn when working at or visiting Department work sites where there is a possible danger of head injury from the impact of falling or flying objects, electrical shocks, or burns.

(B) Head protection must be worn in the following work sites and operations:

(1) Tree trimming;

(2) Under over-head construction/maintenance work;

(3) Sign work;

(4) Working around equipment with moving or working parts over shoulder height;

(5) Using chain saws;

(6) Working in excavations/trenches, manholes or catch basins which are four (4) feet or

more in depth; and

(7) On construction sites designated as hard hat areas.

(C) Helmets shall be inspected regularly by the employee and turned in to their supervisor and replaced immediately when found defective. A helmet is considered defective if it is cracked or otherwise damaged, faded, modified, or not equipped with an inner suspension liner.

5.2.1.3 Eye and Face Protection

(A) All employees shall be required and supervisors shall ensure that appropriate eye and face protection is worn when work takes place in area where an employee's eyes and face are exposed to hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical fumes, gases or vapors, or potentially injurious radiation.

(B) Eye and face protection must be worn in the following operations.

(1) Acetylene burning, cutting, and welding

(2) Electric (ARC) welding

(3) Abrasive blasting

(4) Chemical handling

(5) Grinding

(6) Spot welding

(7) Using power/powder activated tools

(8) Sledging, hammering, chiseling, scaling, drilling, dressing, buffing, polishing, wire brushing, weeding or any other operation where flying objects or dust particles are generated

(9) Around injurious radiation

(10) Cleaning with compressed air

(11) Chain saw operations

(C) Employees whose vision requires the use of corrective lens spectacles while engaged in operations that involve eye hazards shall wear eye protection that can be worn over the prescription glasses without interference.

(D) The supervisor shall require an employee to wear an appropriate eye or face protection when in is/her judgement the work activity being performed presents a condition capable causing injury to the employee's eyes and face.

5.2.1.4 Hand Protection

All employees shall be required and the supervisors shall ensure that the appropriate hand protection is worn when the employee's hands are exposed to hazards that can cause cuts or lacerations; abrasions; punctures; chemical burns from acids or alkalies; absorption through the skin of harmful substances such as organic solvents; thermal burns from hot tar or thermoplastics; and harmful temperature extremes.

5.2.1.5 Foot Protection

All employees shall wear and the supervisors shall ensure that foot protection is worn when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where the employee's feet are exposed to electrical hazards.

5.2.1.6 Respiratory Protection

(A) When airborne contaminants such as dusts, fumes, gases or vapors cannot be eliminated in the workplace by accepted control measures such as enclosures, local or general ventilation, or when such measures are not feasible, respirators will be required to be worn by employees exposed after an assessment has been conducted on those air-borne contaminants by an industrial hygienist.

(B) Supervisors shall ensure that when respirators are required to be worn by employees, the respiratory program in *Chapter 8, Section 2*, of this Handbook is followed. The unit safety and health specialist /designated safety person shall provide assistance in implementing the program.

(C) Employees are responsible for using the respirators in accordance with the training and instructions received.

5.2.1.7 Hearing Protection

(A) Employees shall be required to wear hearing protection in designated work areas or operations where the Unit Manager/Office Head has determined that the noise levels, exceed allowable limits.

(B) A hearing conservation program will be administered in units where employee exposure to noise levels exceeds the allowable limits according to the hearing conservation program in *Chapter 8, Section 3*, of this Handbook.

5.2.2 FALL PROTECTION EQUIPMENT

5.2.2.1 Safety Harnesses, Safety Belts, Lifelines & Lanyards

(A) Safety harnesses/safety belts, lanyards, lifelines or guardrails are required when employees are doing construction work, repairing, painting, 6 feet or more above any work surface.

(B) Body harnesses/safety belts and lanyards shall be worn when working in aerial platforms, bucket trucks, or forklift platforms.

(C) Lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a dead weight of 5,400 pounds (2,450 kg.).

(D) If a belt/lanyard or lifeline is subject to inservice loading, it shall be replaced and not used.

(E) Body harnesses shall be used for fall arresting and safety belts shall be used as positioning devices.

(F) Safety belts or equipment shall be used by employees placing or tying reinforcement steel more than 6 feet (1.83 meters) above any adjacent working surface.

(G) Only locking-type snap hooks shall be used.

Note: Body harnesses should be purchased as replacement for safety belts being used for fall arrest protection.

5.2.2.2 Safety Nets

(A) Safety nets shall be provided for work places (construction activities) more than 25 feet (7.62 meters) above any surface where ladders, scaffolds, catch platforms, safety lines and belts are impractical.

- (B) When nets are used they shall extend not less than 8 feet (2.43 meters) beyond the edge of the work surface, not more than 25 feet (7.62 meters) below the work surface.
- (C) Work operations shall not be undertaken until safety nets are in place.
- (D) Nets shall be kept free from debris.
- (E) Impact load testing must be accomplished prior to using the net.

5.2.2.3 Working Over or Near Water

(A) All employees working over or near water where the danger of drowning exists are required to wear a U.S. Coast Guard approved life jacket or buoyant work vest. These shall be inspected prior to and after each use for defects which would alter their strength or buoyancy.

(B) Supervisors shall designate the nearest area free of water as a place of safety, and make sure that:

(1) This area is provided with ring buoys that have a minimum of 90 feet (27.43 meters) of the line attached with a minimum distance of 200 feet (60.96 meters) between them; and

(2) A life-saving skiff or boat is immediately available for rescue operations where employees are working over or adjacent to water and involving construction activities, repairing, painting or any other maintenance-related activities.

5.2.3 SAFETY VESTS

(A) All employees who are working within 15 feet (4.57 meters) of the roadway or within the roadway itself or in construction/maintenance operations where employees are exposed to roadway traffic, are required to wear a high visibility reflective safety vest, except when operating chain saws and feeding the chipper. Employees who are wearing the FDOT orange and yellow raincoats do not have to wear a safety vest except during nighttime operations.

(B) Requiring employees to wear safety vests for other work activities will be

at the discretion of the employees' immediate supervisor.

Section 3

FIRE PREVENTION AND PROTECTION

5.3.1 PORTABLE FIRE EXTINGUISHERS

5.3.1.1 Appropriate portable extinguishers, suitable to the type of hazard must be readily available at all work sites, as required by the *rules of the State*

Fire Marshal.

5.3.1.2 Portable fire extinguishers will are conspicuously located, easily accessible and identified through the use of signs, arrows, or other appropriate means.

5.3.1.3 No supplies, materials, tools or cabinets will be placed near portable fire extinguishers so as to obstruct their use.

5.3.1.4 Supervisors will be responsible for the inspection, maintenance, and testing of portable fire extinguishers.

(A) Inspection - Monthly documented inspection of portable fire extinguishers to:

(1) Ensure that extinguishers are properly located;

(2) Ensure that extinguishers are fully charged;

(3) Ensure that extinguishers have not been actuated or tampered with;

(4) Check pressure gauge and nozzle;

(5) Detect any obvious physical damage, corrosion or other defects; and

(6) Ensure that operating instructions are clearly visible on the front of each extinguisher.

(B) Maintenance - Portable fire extinguishers shall be thoroughly examined and/or **recharged annually**.

(C) Replacement - Portable fire extinguishers that are removed for maintenance or recharging shall be immediately replaced by spare extinguishers of the same type and equal rating or greater.

(D) Testing - Portable fire extinguishers will be hydrostatically tested as required.

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5.3.1.5 Supervisors are responsible for ensuring that employees who are assigned to use portable fire extinguishers are trained in its use fire fighting.
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5.3.2 FIRE PREVENTION

5.3.2.1 Housekeeping

- (A) Offices are to be kept clean and trash cans must be emptied regularly.
- (B) Oily rags and other flammable or combustible wastes must be disposed of in metal containers with self-closing lids, the containers clearly marked "**Flammable Waste**". These containers must be emptied daily.
- (C) Combustible rubbish accumulated in the workplace must be disposed of in metal containers with tight-fitting lids, the containers clearly marked "**Trash Only**".
- (D) Combustible materials such as lumber and liquids must be piled with due regard to stability.
- (E) Storage areas must be kept free from accumulated rubbish. Weeds and grass must be controlled.
- (F) All materials shall be stored with regard to their fire characteristics.
- (G) Exits shall not be obstructed.
- (H). Adequate aisles and clearance must be maintained.

5.3.2.2 Ignition Hazards

- (A) Internal combustion engine-powered equipment shall be located so that the exhausts are well away from flammable and/or combustible materials.
- (B) Smoking is prohibited within fifty (50) feet of fuel storage areas or gas service stations. "**No Smoking or Open Flame**" signs shall be posted in these areas.

(C) **Smoking is prohibited in all of the Department's buildings.**

5.3.2.3 Emergency Action Plan

An emergency action plan shall be implemented to ensure employee safety in the event of fire and other emergencies, including hazardous materials and bomb threats. The emergency action plan must be posted and accessible to all employees.

Section 4

ELECTRICAL SAFETY

A common cause of electrical accidents in the workplace is contact with electrical current that can result in death by electrocution or electric burns, or other physical injuries, or overheating that can cause fire or explosion. Electric appliances and machines, electrical wiring and other electrical delivery systems such as fuse boxes, circuit breaker boxes, or wiring within conduits are sources of electrical hazards.

5.4 SAFE WORK PRACTICES

5.4.1 Before any work is begun, the supervisor in charge must make sure that any part of an electric power circuit, exposed or concealed, is so located that the performance of the work will not bring any employee, tools or machine into contact with the circuit. Warning signs must be posted and maintained where such circuit exists.

5.4.2 No employee will be allowed to work near any part of an electric power circuit which the employee may accidentally contact, unless the circuit is de-energized or guarded by effective insulation. Tags shall be placed to identify plainly the equipment or circuit(s) being worked on.

5.4.3 Only trained employees shall be permitted to work on electrical installations or perform maintenance or conduct electrical tests. Refer to training requirement, *Chapter 7* of this Handbook.

5.4.4 All electric power tools, line cords and plugs must be inspected by the employee before use on each shift. Defective tools and equipment shall be turned in, tagged "**out of service**" and replaced.

5.4.5 Flexible cords connected to equipment shall not be used for raising or lowering the equipment.

- 5.4.6** Plugs are not to be removed from the wall outlets by tugging on the line on plug. cord. Grip and pull
- 5.4.7** Extension cords are prohibited from use inside any office, crew room, warehouse or any other indoor area as permanent wiring. Only heavy extension cords are authorized to be used for temporary electrical service for audio-visual equipment, janitorial equipment, or in construction/ maintenance activities. bridge tenders office,
- 5.4.8** Adapters that interrupt the continuity of the equipment grounding connection must not be used.
- 5.4.9** Only authorized and approved current, voltage or other electrical instruments are allowed to be used.
- 5.4.10** Metal ladders or conductive (metal) hard hats shall not be used when working on energized electrical system.
- 5.4.11** Only ANSI approved and labeled rubber protective devices will be allowed to be used in electrical maintenance work.
- 5.4.12** Ground fault current interrupter should be checked at least **quarterly**.

Section 5

LABORATORY SAFETY

Established safety requirements and safe work practices in performing laboratory work will reduce the exposure of laboratory employees to hazardous chemicals and enable them to handle chemicals in a safe manner.

5.5.1 HAZARDS OF CHEMICALS

5.5.1.1 Hazards of chemicals generally fall into two categories.

- (A)** Physical hazards such fire, explosion or reaction with other chemicals.
- (B)** Health hazards developing from inhaling, swallowing, or having eye or skin contact.

5.5.2 General Requirements

5.5.2.1 The unit manager or office head of a laboratory facility shall ensure that:

- (A) An employee, qualified by training and experience and who is familiar with the specific laboratory operation is designated to provide technical guidance and implementation of safe laboratory work practices and procedures;
- (B) An inventory and listing of all chemicals used the laboratory is conducted to identify hazardous chemicals;
- (C) Exposure levels of employees to the hazardous chemicals are determined or measured by a qualified industrial hygienist;
- (D) Records are maintained of any measurement taken to monitor employee exposure;
- (E) Control measures are provided and used to reduce employee exposure, including the use of personal protective equipment;
- (F) The laboratory and the areas where chemicals are stored are well ventilated;
- (G) Fume hoods and other local ventilation devices are installed and function properly;
- (H) Employees are trained to recognize and understand the hazardous chemicals they are working with. [Refer to hazard communication training, *Section 6, 5.6.4* of this Chapter];
- (I) Material Safety Data Sheets (MSDS) are available for each of the hazardous chemicals used;
- (J) Eyewash fountains and showers are provided for quick drenching or flushing of the eyes and body for emergency use of employees exposed to corrosive chemicals; and
- (K) Waste chemicals are placed in labeled containers and disposed of in the approved manner.

5.5.3 Laboratory Safe Work Practices

- (A) Before starting work with hazardous chemicals, read container label information and the material safety data sheet (MSDS) and follow the precautions they contain.
- (B) Do not remove any container label and report to the supervisor any container without any label.
- (C) Periodically check all stored containers to make sure that containers, labels, and contents are in good condition.
- (D) Use fume hoods for any operation where chemical fumes, vapors, or dusts are released. Keep hood closed except when making adjustments to it.
- (E) Do not store materials in hoods or in places that can block vents or air flow.
- (F) Use personal protective equipment and clothing such as goggles, gloves, and long-sleeved clothing that has been specifically selected and provided for the operation being performed.
- (G) Waste chemicals must be placed in properly covered and labeled containers. **Do not pour** waste chemicals down drains or place them in regular trash cans.
- (H) Do not touch electrical equipment with wet hands or while standing on a wet surface.
 - (1) Check wires and plugs to be sure they are not frayed or otherwise damaged.
- (J) Only operate equipment for which you have been trained in its proper use.
- (K) Use tongs or heat-resistant gloves when working with equipment that uses heat.
- (L) Do not eat, drink, chew gum, or apply cosmetics in areas containing hazardous chemicals.
- (M) Always wash areas of exposed skin before leaving the lab.

- (N) After completion of task and/or at the end of the work day, clean up the work area(s). Do not leave any operation unattended.

Section 6

HAZARD COMMUNICATION

This section provides information on how employees can have access to information on hazards of chemicals and how to recognize and handle hazardous chemicals used in the workplace.

5.6.1 CONTAINER LABELING

(A) Supervisors shall ensure that all containers of hazardous chemicals used in the workplace are labeled, tagged or marked with information giving the identity of the hazardous chemical and the appropriate hazard warnings, including portable containers, except those portable containers into which the hazardous chemical are transferred from labeled containers, and which are intended **only** for the immediate use of the employee who performs the transfer.

(B) Employees must not deface or remove container labels and report any missing or defaced labels to their supervisors immediately.

5.6.2 HAZARDOUS CHEMICAL INVENTORY

(A) Supervisors shall make a list of hazardous chemicals in the work area they are responsible for. The list must include the chemical name, where used, (for example, crew operation) and where the material safety data sheets (MSDS) are located.

(B) Products with hazardous chemical ingredients used in the workplace where the duration and frequency of employee exposure to the products is determined not to be greater than exposures experienced during normal household use of the product, should not be included in this list.

5.6.3 MATERIAL SAFETY DATA SHEETS (MSDS)

(A) The supervisor shall maintain copies the MSDS for chemicals used in the workplace/shop/or field activity he/she is responsible for. The MSDS shall be obtained for all chemicals received through the Department's

Warehouse and for any chemical purchased locally.

(B) Copies of the MSDS sheets shall be located in the supervisor's office and must be accessible to all employees.

(3) A master copy of all MSDS sheets will be maintained by the warehouse.

5.6.4 TRAINING

5.6.4.1 Employees Who Use Hazardous Chemicals

(A) Supervisors shall instruct the employees:

- (1)** On the nature and effects of each hazardous chemical;
- (2)** How to read and interpret information on labels and MSDS;
- (3)** On the physical and health hazards of chemicals;
- (4)** Specific procedures to provide protection such as safe work practices, emergency procedures and use of personal protective equipment;
- (5)** Within thirty (30) days of employment, when new hazardous chemicals are used, and annually thereafter.

5.6.4.2 Employees Who Only Work Around Stored, Closed Container of Hazardous Chemicals

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The supervisor shall instruct employees on proper procedure for dealing with emergency situations such leaks and spills.

5.6.4.3 Supervisors

Unit Managers/Office Heads shall ensure that supervisors are provided the training to enable them to properly instruct their employees concerning hazardous chemicals.

5.6.4.4 Documentation

Supervisors shall make sure that a record of the training is completed for every employee trained. A copy of this record is retained by the supervisor, a copy goes to personnel file and a copy sent to the warehouse. TRESS forms shall also be completed for all training.

5.6.5 RESPONSIBILITIES OF OTHER EMPLOYEES

5.6.5.1 FDOT employees responsible for ordering and receiving hazardous chemicals shall make sure that:

- (A) Copies of MSDS are furnished with the chemicals ordered;
- (B) Containers are appropriately labeled with identity of contents and appropriate hazard warnings;
- (C) No hazardous chemicals are issued to employees unless MSDS are available;
- (D) No hazardous chemicals are accepted without the appropriate labels and/or the required MSDS.
- (E) Non-hazardous chemicals are ordered, if at all possible.

5.6.5.2 Non-FDOT employees, such as contractors, contract laborers, inmates, who may encounter any hazardous chemicals during the normal course of work in DOT facilities, will be provided with the following information by the supervisor.

- (A) Hazards of the chemicals.
- (B) Labeling system in use.
- (C) Protective measures in effect.
- (D) Safe handling procedures.
- (E) Location of MSDS sheets.

5.6.5.3 Unit Managers/Office Heads shall make sure that any contractor who bring hazardous chemicals on FDOT property or worksites have copies of MSDS available on those chemicals and that containers of those chemicals are properly labeled.

5.6.6 "RIGHT TO KNOW" POSTER

The State-required "Right-To-Know" poster shall be posted on bulletin boards at all facilities using and storing hazardous chemicals. The "**Right-to-Know**" posters are available from the Division of Safety, Florida Department of Labor and Employment Security, at 1-800-367-4378.

5.6.7 SIGNS

Buildings containing hazardous chemicals shall be placarded according to the rules of the *State Fire Marshal*.

Section 7

CHAIN SAW OPERATIONS

5.7.1 Chain saw operators shall wear hard hats, eye protection, gloves, and chaps.

5.7.2 Chain saw operators shall not wear any jewelry or excessively loose-fitting clothing which could become entangled in the machine's operating parts.

5.7.3 Chain saws shall be inspected prior to use to assure that all handles and guards are in place and tight, that all controls function properly, and that the muffler is in good condition.

5.7.4 The manufacturer's instruction shall be followed as to operation and adjustment of chain saws.

5.7.5 Chain saws shall be fueled only in safe areas, and not under conditions conducive to fire, such as near smoking areas, hot engines, etc.

5.7.6 Fuel shall be stored and dispensed from approved, plainly marked safety containers.

5.7.7 Chain saws shall be started at least 10 feet away from refueling areas.

5.7.8 Chain saws shall be started only on the ground or when otherwise firmly supported.

5.7.9 Operators shall be certain of footing and shall clear away all brush which might interfere with cutting prior

to starting a cut.

5.7.10 Chain saws shall be held with both hands in order to maintain control of saws during operation.

5.7.11 Chain saws shall be turned off when carried in hazardous conditions such as slippery surfaces or heavy underbrush.

5.7.12 Chain saws shall not be used to cut directly overhead or at a distance that would require the operator to lose a safe grip on the saw.

Section 8

FLAGGING

5.8.1 When operations are such that signs, signals, and barricades do not provide adequate protection on or adjacent to a highway or street, flaggers and/or other appropriate traffic controls shall be provided.

5.8.2 Signalling shall be accomplished by flaggers in conformance with the *MUTCD (ANSI standard D.6.1.1971)* and *DOT Roadways and Traffic Design Standards/Manual on Uniform Traffic Control Devices*.

5.8.3 Flaggers shall have and use the following minimum equipment:

- (A) Orange Hat- reflectorized at night
- (B) Orange Vest- reflectorized at night

5.8.4 The supervisor in charge shall ensure that the individual selected for flagger duty is fully trained to perform his/her duties at the work sites.

5.8.5 In periods of darkness, proper illumination of the flagger shall be provided. This can be accomplished by lighting the flagging station and/or a reflectorized paddle plus a flashlight, lantern or other lighted signals that will display a red warning light.

5.8.6 Red flags are only to be used for emergency operations.

Section 9

LADDERS

5.9.1 PORTABLE WOOD LADDERS

- (A) All wood parts shall be free from sharp edges and splinter; sound and free from shake, wane, compression failure, decay or other irregularities; the joint between the stops and side rails shall be tight and all hardware and fitting securely attached.
- (B) Inspections shall be conducted frequently on all extension and step ladders.
- (C) Ladders equipped with safety feet and other auxiliary equipment shall be kept in serviceable condition.
- (4) Ladders that are defective shall be red-tagged as "**Dangerous-Do Not Use**", and taken out of service.
- (E) Ladders shall be used at the proper angle. The ladder shall be used at such a pitch that the horizontal distance from the top support of the foot of the ladder is 1/4 the working length of the ladder (i.e. if the object is 20 feet (6.10 meters) high the foot of the ladder will be placed 5 feet (1.52 meters) from the bottom of the object.
- (E) Ladders shall be placed to prevent slipping or shall be lashed or held in position while in use.
- (F) Ladders shall not be placed on unstable bases.
- (G) Splicing or tying together of two ladders is prohibited.
- (1) Standing on the top step of a step ladder is prohibited.
- (I) Ladders used to access roofs shall extend at least 36 inches (91.44 centimeters) past the landing surface.

5.9.2 PORTABLE METAL LADDERS

- (A) Rungs and steps shall be corrugated or treated with non-skid material to prevent slipping.
- (B) Single ladders shall not exceed 30 feet (9.14 meters).
- (C) Two-section ladders shall not exceed 48 feet (14.63 meters) in length.
- (D) Portable metal ladders shall be prohibited from being used for electrical work or where they may contact electrical conductors.
- (E) Ladders shall be maintained in good condition and inspected regularly for damage.
- (F) Ladders having defects shall be red-tagged and taken out of service until repaired.
- (G) Ladders exposed to oil or grease should be immediately cleaned.
- (H) The ladder shall be set up at the proper angle, with the base placed one fourth of the working length of the ladder from the vertical wall.
- (I) Ladders shall have secured footing.
- (J) Ladders shall be protected from corrosion.

5.9.3 FIXED LADDERS

- (A) Metal rungs shall be treated to prevent corrosion.
- (B) Wood ladders shall be treated to resist decay using preservatives non-injurious to employees.

- (C) Ladders installed at 90 degrees to the horizontal shall have at least a 30 inches (76.20 centimeter) space between the ladder and any permanent object on the climbing side.
- (D) Rungs shall be free of splinters, sharp edges, burrs, or projections that may create a hazard.
- (E) Cages shall be provided on all ladders that are more than 20 feet (6.10 meters) to an unbroken length of 30 feet (9.14 meters) in length.
- (F) Landing platforms shall be provided for each 30 feet (9.14 meters) of height on ladders with cages, wells or ladder safety devices, and each 20 feet (6.10 meters) of height on ladders without such devices.
- (2) Landing platforms shall have standard railings and toeboards.
- (H) Ladder safety devices shall be used on tower, chimney and water tank ladders.

Section 10

MOTOR VEHICLE AND EQUIPMENT OPERATIONS

5.10.1 The safe operation of FDOT motor vehicles or equipment is the responsibility of the operator.

5.10.2 All employees shall be properly licensed to operate FDOT owned or leased motor vehicles or equipment and be familiar with and comply with all state and local traffic laws and ordinances.

5.10.3 A program has been established to train and provide written authorization for employees to operate vehicles 1.81 metric tons (2 tons) or greater to include all off road equipment regardless of weight, and shall be implemented according to the Motor Vehicle/Heavy Industrial Equipment Operation Authorization, *Chapter 8, Section 4* of this Handbook.

5.10.4 VEHICLE OPERATION

(A) All occupants of a motor vehicle are required to use the seat belts provided whenever the vehicle is in

operation, except when conducting hay operations, herbicide applications, locating or replacing vehicle barricades, cones or signs where employees are required to work from the bed of a truck or approved platform. In conducting these operations, the vehicle shall remain in the work zone areas and vehicle speed shall not exceed 15 miles per hour (24.14 kph).

- (B) Always drive within the posted speed limit and govern adjust speed according to posted speed limits, road conditions, and traffic conditions.
- (C) Signal in sufficient time to adequately warn other drivers of intended action.
- (D) Avoid sudden stops or other abrupt maneuvers.
- (E) Use proper following distances. Allow sufficient space to react to unexpected conditions.
- (F) Allow plenty of room when passing.
- (G) Yield to pedestrians.
- (H) When parking a vehicle or piece of equipment, set the brake, turn ignition off, place transmission in low gear or in "park" if it has an automatic transmission. Some circumstances may also require the vehicle to be chocked or blocked to prevent the vehicle from rolling when parked.
- (I) Loads must be properly secured to prevent injuries to employees and the public.
- (J) Loads shall not exceed the rated vehicle payload capacities. The maximum load capacities (stenciled on the manufacturer's sticker) shall be posted on all trailer and trailer-hitches or other equipment being towed to ensure that load capacities are not exceeded.
- (K) Loads that extend beyond the body length of the vehicle shall be properly identified by warning signs, flags, or lights, in accordance with State Motor Vehicle Code.
- (L) Loads shall not totally block the operator's field of view.
- (M) Where possible, all vehicles will be parked so that backing is not required on departure.

(N) All vehicle operators shall circle their vehicle prior to departure except when assistance is provided during the backing maneuver.

(O) All vehicles with restricted view to the rear will use a spotter for assistance when backing.

(P) When transporting flammable or volatile liquids or chemicals, only approved safety containers meeting Underwriters Laboratory and State Fire Marshal's specifications shall be used.

5.10.5 CONSTRUCTION EQUIPMENT, LAND CLEARING VEHICLES

(A) All equipment left unattended at night within 30 feet (9.144 meters) of a highway in normal use, or adjacent to construction areas where work is in progress, must have appropriate lights or reflectors to identify the location of the equipment.

(B) Bulldozer and scraper blades, front-end loaders, buckets, dump beds, and similar equipment must be either fully lowered or blocked when being repaired or when not in use.

(C) The operator and other persons shall be protected from hazards created by pinch points, rotating parts of the equipment or flying chips/debris.

5.10.6 JUMP STARTING VEHICLES

(A) Connect one red end on the jumper cable to the positive (+) terminal of the good battery.

(B) Connect the other red end on the jumper cable to the positive (+) terminal of dead battery.

(C) Connect black end on the jumper cable to the negative (-) terminal of the good battery.

(D) Attach the other black end on the jumper cable to the engine block of the vehicle to be started.

(E) Make sure that cable is clear of fan blades and belts.

(F) After stalled vehicle has been restarted, remove cable connections in reverse order.

Section 11

FORKLIFT OPERATIONS

5.11.1 No employee will be allowed to operate forklifts unless trained and authorized by his/her supervisor.

5.11.2 Unauthorized employees shall not be permitted to ride on forklifts.

5.11.3 Forklifts shall not be driven up to a person who is standing in front of a bench or other fixed object.

5.11.4 No employee shall be allowed to stand or pass under the elevated portion of forklift, whether loaded or empty.

5.11.5 When an operator leaves a forklift unattended, he/she must fully lower the load engaging means, neutralize the controls, shut off the power, set the brakes and remove the key. If parked on an incline, the wheels must be blocked.

5.11.6 A forklift is unattended when an operator is twenty-five (25) feet or more away from the truck whether or not the truck remains in the operator's view.

5.11.7 When an operator is dismounted and within twenty-five (25) feet of the truck still in his/her view, the operator must fully lower the load engaging means, neutralize the controls and set the brakes to prevent movement.

5.11.8 Operators must slow down, stop, and sound the horn at cross aisles and other places where the vision is obstructed.

5.11.9 Dockboards or bridge plates must be properly secured before they are driven over.

5.11.10 Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-centered loads. The load capacity of the forklift must not be exceeded.

5.11.11 The supervisor shall ensure that the forklift is checked daily before use and if found to be in need of repair, defective, or in any way unsafe, the forklift shall be taken out of service until it has been restored to a safe operating condition.

Section 12

OFFICE SAFETY

5.12 OFFICE HAZARDS AND SAFE PRACTICES

Types of hazards that are most common in office settings and safe practices to control exposure to these hazards.

5.12.1 Slips, Trips, and Falls

- (A)** Do not stand on office furniture or boxes to retrieve or store items on shelving over-shoulder height or other high locations. Use a ladder or step-stool.
- (B)** Do not leave objects such as boxes or packages where they block access through aisles or stairwells.
- (C)** On stairways, use handrails and take one step at a time. Report worn, broken or loose stair treads.
- (D)** Do not carry heavy or bulky materials up or down stairs.
- (E)** Clean up wet spots, oil or grease all spills immediately.
- (F)** Keep floor clear of items such as pencils, paper clips, tacks or staples and other objects that might cause a slip.
- (G)** Keep all 4 legs of your chair on the floor. Tilting back in a chair often results in over-balancing and a fall.
- (H)** Do not lean sideways in a chair to pick up objects on the floor.
- (J)** Watch out for recently waxed floor, loose carpeting, floorboards, tiles and uneven floors. These hazards

should be reported to the supervisor.

5.12.2 Falling Objects

- (A) Store boxes, records and equipment in the properly assigned storage areas. Store heavy or breakable items on lower shelves.
- (B) Materials should be stacked or piled in stable configurations. Keep frequently used materials within easy reach.
- (C) Lateral files are top heavy. Load heavy material on the bottom drawer, not the top.
- (D) Open only one file drawer at a time to prevent the file cabinet toppling over.

5.12.3 Striking Against Objects

- (A) Close file drawers and cabinet doors immediately after use.
- (B) Situate file cabinets so that drawers do not obstruct doorways and walkways.
- (C) Make sure vision is not blocked when carrying loads.
- (D) Approach solid doors from the side away from the hinges. This will enable you to step out of the way if someone comes through.

5.12.4 Other Office Safe Practices

- (A) Use cabinet handles when closing doors, drawers to avoid pinching fingers.
- (B) Keep fingers out of file drawers when closing.
- (C) Be alert for electrical hazards such as frayed or bare wires, overloaded outlets or improperly

grounded wires. Report such hazards to the

supervisor promptly.

(D) Only extension cords with UL approved surge suppressors will be allowed to be used.

(E) Store sharp objects (such as letter openers, scissors, pencils) flat inside drawers or point down in a container to prevent cuts and puncture wounds.

(F) Use separate containers for storing push pins or tacks. Do not mix push pins with paper clips.

(G) Wear finger guards when handling stacks of paper. Moisten stamps and envelopes with a sponge or sealing device.

(H) Keep fingers away from paper cutter blade. Avoid cutting too many sheets at one time.

5.12.5 LIFTING

When it is necessary to lift objects, observe the safe lifting practice described in *Section 1, paragraph 5.1.2* of this Chapter.

Chapter 6

COMPLIANCE STANDARDS

The requirements in this chapter are consistent with the safety standards adopted by the Florida Department of Labor and Employment Security (DLES), Division of Safety. This chapter does not contain all of the safety standards, but cover those standards that apply to FDOT work activities, operations and facilities. For any workplace issue or situations which are not addressed in this chapter, the adopted standards should be consulted. [The bracketed number after each topic refers to the regulation, i.e., 29 Code of Federal Regulation (CFR), adopted by the DLES, under Rule 38I-20, F.A.C.]

Section 1

LABELS, SIGNS AND FACILITY MARKINGS

This Section provides information on the labels, signs and markings required by the regulations and applicable to FDOT facilities or operations.

6.1.1 CLASSIFICATION OF SIGNS AND COLOR SPECIFICATIONS [§1910.145]

(A) **Danger signs** indicates immediate danger and that special precautions are necessary. The colors are **red, black and white**.

(B) **Caution signs** indicates a potential hazards against which proper precautions should be taken. **Yellow background** with a **black panel** and **yellow lettering**.

(C) **Safety Instruction** signs provides specific safety instructions. **White background;** and panel, **green with white letters**.

6.1.2 WAREHOUSE

(A) Identify all reels or cabinets for fire hoses to be used only for fire equipment. [§1910.158]

(B) Where forklifts are used (gas or diesel operated), a placard warning employees of carbon monoxide fumes must be placed (on the wall where they can see it). [§1910.1200]

(C) Permanent aisles and passageways shall be appropriately marked (yellow or yellow/black stripe). [§1910.22]

6.1.3 WELDING

(A) After welding is completed, the hot metal shall be marked or provide some type of warning to other workers. [§1910.252]

(B) Gauges on oxygen regulators shall be marked “Use No Oil”. [§1910.253]

(C) All compressed gas cylinders shall be legibly marked identifying the gas content. [§1910.253]

(D) Hydrogen gas cylinder storage shall be permanently marked “ **Hydrogen - Flammable Gas - No Smoking - No Open Flames**”. [§1910.103]

6.1.4 SPRAY BOOTH/SPRAY FINISHING

"No Smoking" signs shall be posted at all spraying areas and paint storage areas. [§1910.107]

6.1.5 MAINTENANCE SHOP

(A) "No Smoking" signs shall be posted. [§1910.106]

(B) Storage cabinets in which flammable liquids such as gasoline are kept must be labeled "Flammable - Keep Fire Away." [§1910.106]

(C) Safety cans or other portable containers of flammable liquids that have a flash point at or below 80° F. shall be painted red with either a yellow band around the can or the name of the contents stenciled on the can. [§1910.144]

(D) When equipment required the use of a lock-out/tag-out system, the appropriate tags shall be attached - i.e., "Do Not Start", "Do Not Operate", or "Do Not Energize." [§1910.147]

6.1.6 LOADING DOCK

(A) Clearance signs to warn of clearance limits shall be provided. [§1910.176]

(B) A **Carbon Monoxide** wall placard where fumes are likely from forklifts, tow motors and vehicles idling at loading docks. [§1910.1200]

(C) Permanent aisles and passageways shall be appropriately marked. [§1910.22]

6.1.7 CHEMICAL STORAGE

(A) "Flammable - Keep Fire Away" signs must be posted on all storage cabinets for flammable

liquids. [**§1910.106**]

(B) All containers must be labeled with type of contents and an appropriate hazard warning.
[**§1910.1200**]

(C) All facilities that contain hazardous material must be properly placarded on the exterior in accordance with **NFPA 704**.

(D) Safety cans or other portable containers of flammable liquids that have a flash point at or below 80° F. must be painted red with the name of the contents stenciled on the container. [**§1910.144**]

6.1.8 VEHICLE MAINTENANCE AREA

(A) Safety cans or other portable containers of flammable liquids that have a **flash point at or below 80° F.** have to be painted red with the name of the contents stenciled on the container. [**§1910.144**]

(B) Caution signs shall be posted to indicate potential hazards (e.g., those requiring eye, ear protection). [**§1910.145**]

(C) Permanent aisles and passageways shall be appropriately marked. [**§1910.22**]

(D) Compressed gas cylinders shall be legibly marked by means of stenciling, stamping, or labeling. [**§1910.253**]

6.1.9 EXIT MARKINGS

(A) All exits shall be marked by a readily visible sign. [**§1910.37**]

(B) Every exit sign shall be suitably illuminated by a reliable light source. [**§1910.37, NFPA 101**]

(C) Any door, passage or stairway that is neither an exit nor a way of exit access and likely to be mistaken for an exit, must be marked with a sign reading

"Not An Exit." [**§1910.37**]

(D) A sign reading "Exit" with a directional indicator showing the direction of travel shall be placed in every location where the direction of travel to the nearest exit is not apparent. [*§1910.37, NFPA 101*]

6.1.10 CONSTRUCTION SITE

(A) The telephone numbers of physicians, hospitals, or ambulances shall be conspicuously posted. [*§1926.50*]

(B) An "MSDS Information Available Here" sign should be posted. [*§1926.59*]

(C) First aid supplies should be easily accessible. [*§1926.50*]

(D) Containers used to distribute drinking water shall be clearly marked as to the contents. [*§1926.51*]

6.1.11 DIP TANKS CONTAINING FLAMMABLE OR COMBUSTIBLE LIQUIDS

"No Smoking" signs shall be posted in the immediate area. [*§1910.108*]

6.1.12 CRAWLER, LOCOMOTIVE AND TRUCK CRANES

A load rating chart shall be provided and secured in the crane cab which can be easily seen by the crane operator. [*§1910.180*]

6.1.13 RADIAL SAWS

The direction of the saw rotation shall be conspicuously marked on the hood. A permanent label at least 1-1/2 inches by 3/4 inch (3.81 centimeters by 1.905 centimeters) must be affixed to the rear of the guard at about the level of the arbor stating: "Danger - Do Not Rip or Plough From This End". [*§1910.213*]

6.1.14 JACKS

The rated load shall be legibly and permanently marked on jacks and other vehicle lifts by casting, stamping, or other suitable means. [*§1910.244*]

6.1.15 WIRING COMPONENTS

Pull and junction boxes for systems over 600 volts shall be marked

"High Voltage". [*§1910.305*]

6.1.16 BOOM PLATFORMS

A sign shall be affixed to the bucket requiring operators to wear a body belt and attach a lanyard. [*§1910.145 & §1910.67*]

6.1.17 TIRE SERVICING

Current charts and procedures containing instructions, safety precautions and other information applicable to the types of multi-piece rim wheels being serviced and maintained shall be available. [*§1910.177*]

6.18 EYE AND FACE PROTECTION

Areas designated for wearing eye and/or face protection shall be clearly labeled. [*§1910.145*]

6.19 AGRICULTURAL TRACTORS

6.19.1 Each roll-over protective structure shall have a label permanently affixed to the structure. This label shall include:

- (A) Manufacturer or fabricator name and address.
- (B) ROPS model number, if any.
- (C) Tractor make, model, or serial number that the structure is designed to fit.
- (D) A statement that the ROPS was tested in accordance with the requirements of standard. [*§1928.51*]

6.1.20 CONFINED SPACE

- (A) Use lock out/tag out to control hazardous energy. [*§1910.147*]

(B) Caution signs indicating a confined space when workers are present must be posted (yellow background with black letters). [*§1910.145*]

(C) If a permit-required confined space (PRCS), a sign reading "**DANGER- Permit Required Confined Space- DO NOT ENTER**" shall be posted. [*§1910.146*]

6.1.21 LOAD RATING FOR STORAGE

In every building or structure used for storage purposes, the loads approved by the building official shall be marked on plates or painted using stencils, and affixed in a conspicuous place. This includes all overhead storage and second story storage areas. [*§1910.22*]

6.1.22 REFRIGERANT RECYCLING AREA

All used refrigerant must be kept in gray containers with a yellow cover stating "**Dirty Refrigerant, Do Not Use Without Recycling**".

Section 2

COMPETENT PERSONS

This Section provides information on certain operations or equipment where a **competent person** is required either to erect, install or inspect the equipment or operation, or to train employees in performing such operations or in the use of equipment. A **competent person** is one who, because of training or experience, **is capable of identifying hazardous conditions and has the authority to take corrective action**. The competent person shall be selected or designated by the Unit Manager/Office Head.

6.2 Unit Managers/Office Heads or their designees shall ensure that a **competent person is available** whenever the following operations or activities are being conducted.

6.2.1 Scaffolding operations to include erecting, dismantling and moving.

[\$1910.28(f)(7); (h)(10)]

6.2.2 Powered platforms installations. *[\$1910.66]*

6.2.3 Abrasive blasting operations. *[\$1910.94]*

6.2.4 Training and instruction on respirator use. *[\$1910.134(e)5]*

6.2.5 Conducting inspection of slings and all fastenings *[\$1910184(d)]*

- 6.2.6** Welding operations. [*§1910.253; §1910.155*]
- 6.2.7** Telecommunications repair/installation. [*§1910.268*]
- 6.2.8** Use of radioactive materials or x-rays. [*§1926.53(b)*]
- 6.2.9** Identifying hazards and selection of control measures in asbestos operations. [*§1926.1101*]
- 6.2.10** Exposure monitoring for cadmium. [*§1926.1127(d)*]
- 6.2.11** Fitting of ear protective devices. [*§1926.101(b)*]
- 6.2.12** Welding or cutting a preservative coating whose flammability is unknown. [*§1926.354(a)*]
- 6.2.13** Erecting, moving or dismantling scaffold. [*§1926.451*]
- 6.2.14** Safety monitoring system for fall hazards. [*§1926.500; §1926.502*]
- 6.2.15** Crane operations. [*§1926.550*]
- 6.2.16** Operation of personnel hoists. [*§1926.552*]
- 6.2.17** Excavating and trenching. [*§1926.651*]
- 6.2.18** Lifting slab operations. [*§1926.705*]

Section 3

OPERATIONAL REQUIREMENTS

6.3.1 TOOLS, MACHINES AND EQUIPMENT

[§1910 Subparts O and P]

6.3.1.1 General Requirements

- (A) All tools shall be maintained in a safe condition.
- (B) When power operated tools are designed to accommodate guards, they must be equipped with such guards when in use.
- (C) Tools with exposed drives, pulleys, and belts will be guarded to prevent accidental contact with moving parts.
- (D) All personnel shall be trained to safely use all tools and equipment that they are required to use in the performance of their regular duties.
- (E) Employees using hand and power tools and exposed to the hazards of falling, flying, abrasive and/or splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the appropriate personal protective equipment necessary to protect them from the hazard.
- (G) Hand held power tools such as circular saws and chain saws shall be equipped with a switch that will shut off the power when hand pressure is released.
- (H) The supervisor shall not issue or permit the use of unsafe hand tools, such as wrenches with defective jaws, chisels with mushroom heads and wooden handled tools with splintered handles or loose heads.

6.3.1.2 Electric Power--Operated Tools

- (A) Electric power-operated tools shall either be double insulated or grounded (three conductor wires and three-prong plug) and in good repair.
- (B) All double insulated tools shall be marked or labeled.
- (C) Electric cords shall not be used to hoist or lower tools.

6.3.1.3 Pneumatic Power Tools

- (A) Pneumatic power tools must be secured to the hose by a positive means (factory fitting), to prevent the tool from becoming accidentally disconnected.
- (B) Safety clips or retainers are required on percussion pneumatic impact tools, to prevent attachments from accidentally expelled.
- (C) A safety device is required on automatic--feed pneumatically driven nailers, staplers, etc., which operate at more than 100 pounds per square inch (psi) pressure to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.
- (D) Compressed air used for cleaning purposes shall not exceed 30 p.s.i. pressure and shall be used with effective chip guarding and personal protective equipment. This 30 p.s.i. requirement does not apply to concrete form, mill scale, and similar cleaning operations.
- (E) Hoses and other accessories shall not be operated at pressures above the manufacturer's recommended safe operating pressures.
- (F) Air hoses shall not be used for hoisting and lowering tools.
- (G) Air hoses in excess of 1/2 inch inside diameter must have a safety device to reduce pressure at the source of supply in case of hose failure.
- (H) Airless spray guns which atomize paints and fluids at 1,000 pounds or more pounds per square inch must be equipped with safety devices to prevent accidental pulling of the trigger.

6.3.1.4 Fuel Powered Tools

All fuel powered tools must be stopped and cooled before being refueled, serviced, or maintained.

6.3.1.5 Explosive -Actuated Fastening Tools

The use of explosive -actuated tools is restricted only to qualified personnel approved by the engineer or project manager. Testing of explosive actuated tools is required each day prior to loading. These tools must be used only with the correct guard, shield, or attachment in place.

6.3.2 INDUSTRIAL SHOP MACHINES

6.3.2.1 Machine Guarding

- (A) All machines must have effective and properly working guards that are always in place when they are operating.
- (B) Guards will not be removed or made inoperative except for authorized maintenance.
- (B) When guards are removed during machine repair, power control switches will be locked in the "off" position and properly tagged. The machine will remain locked until guards are replaced.

6.3.2.2 Abrasive Wheels

- (A) All employees using abrasive wheels shall be protected by eye protection equipment.
- (B) All abrasive wheel bench and stand grinders shall be provided with safety guards which cover the spindle ends, nuts and flange, and which are strong enough to withstand the effects of a bursting wheel.
- (C) An adjustable work rest of rigid construction shall be used on floor and bench mounted grinders. Such work rest shall be kept at a distance not to exceed 1/8 inch from the surface of the wheel.
- (D) An adjustable tongue guard shall be attached to the peripheral band at the top of the opening and the distance from the wheel will not exceed 1/4 inch.
- (E) All abrasive wheels shall be closely inspected prior to use and tested to insure that they are free cracks or defects.
- (F) Soft metal such as aluminum will not be ground on an abrasive wheel unless the wheel is designed for that purpose.
- (G) All contact surface of the wheel shall be flat and free of foreign matter, i.g. non-ferrous metals such as copper and brass.
- (H) When using the wire wheel, a leather apron, gloves and full face shield shall be used.

6.3.2.3 Drill Presses

- (A) Only drills that are properly sharpened shall be used.
- (B) Drills shall be visually checked to make sure that the drill is running true before using.
- (C) Drills shall be run at the proper speed for the drill size and the stock being drilled.
- (D) Small drills shall be operated at high speeds, large drills at low speeds.
- (E) Chucks shall be removed before starting the drill press.
- (F) Never attempt to hold work under the drill by hand. Clamp the work securely to the table before starting the machine. If the work should slip from the clamp, never attempt to stop it with the hands.
- (G) File or scrape all burrs from drilled holes.
- (H) Do not reach around or in back of a revolving drill.
- (I) Eye protection shall be worn at all times while operating drill presses.
- (J) All gear covers must be in place while operating.
- (K) All drill presses shall be properly grounded.

6.3.2.4 Metal Saws

- (A) The operator shall stand to one side of the saw frame when turning on the power and then adjust the speed to suit the work.

- (B) Do not bend over the saw during operation.
- (C) Mount or tighten the work only when the saw is stopped.
- (D) Material that is to be cut off shall be supported so that the protruding end of long work will not fall and possibly cause injury.
- (E) Protect the protruding end so that others cannot run into it.
- (F) Ensure that the blades for both circular and band saws are in good condition.
- (G) To prevent hand injuries, use a supporting block when cutting short pieces.
- (H) Wear eye protection at all times while operating metal saws.
- (I) All grounds and gear covers must be in place while operating.

6.3.2.5 Lathes

- (A) Before turning the power on, check to see that tail stock, tool holder, and _____ job are properly clamped. If a magnetic chuck is used, be sure the current _____ is on before starting the machine.
- (B) When putting on or removing the chuck or face plate, use hand power only. Do not use the power that operates the lathe.
- (C) Do not leave the chuck wrench or other tools in the chuck.
- (D) Do not use a wrench on revolving work or parts.
- (E) Never try to measure the work, feel the edge, or adjust a cutting tool when the lathe is running.
- (F) When filing, ensure that the tang of the file is protected by a sturdy wooden handle in good condition and stand to one side so that the file is forced upward and away from the body rather than toward it.

6.3.2.6 Woodworking Machines

- (A)** Fixed power driven tools shall be provided with a disconnect switch that can be locked or tagged in the off position.
- (B)** The operating speed shall be etched or otherwise permanently marked, on all circular saws over 20 inches in diameter or operating at over 10,000 peripheral feet per minute.
- (C)** Automatic feed devices shall be installed wherever the work will permit.
- (D)** All moving parts shall be covered or guarded to protect the operator from the hazard point.
- (E)** Portable power driven circular saws shall be equipped with guards above and below the base plate or shoe. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.
- (F)** Circular table saws used for ripping shall be equipped with anti--kickback fingers or dogs.

6.3.3 ABRASIVE BLASTING

[\$1910.94 and §1926.302]

6.3.3.1 Only respiratory protection equipment that has been approved by the Mine Safety and Health Administration and the National Institute of Occupational Safety and Health against dusts produced during abrasive-blasting operations shall be used.

6.3.3.2 Abrasive blasting respirators shall be worn when:

- (A)** Working inside blast cleaning rooms.
- (B)** Using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operation in an exhaust ventilated enclosure.

(C) The concentrations of toxic dust exceed acceptable limits.

6.3.3.3 Dust filter respirators shall only be worn in outside abrasion blasting operations when non-silica abrasive or low toxic materials are used.

6.3.3.4 Dust filter respirators shall not be worn when silica sand is used or toxic materials are being blasted.

6.3.3.5 Operators shall be equipped with heavy canvas or leather gloves and aprons.

6.3.3.6 Safety shoes shall be worn when heavy pieces of work are handled.

6.3.3.7 Equipment for protection of the eyes and face shall be supplied to the operator when the respirator design does not provide the same protection.

6.3.3.8 The air for abrasive blasting respirators shall be free from harmful dusts, mists, or noxious gasses.

6.3.3.9 If the air is supplied from a regular compressed air line:

(A) The trap and carbon filter shall be provided and regularly maintained to remove oil, water, scale and odor.

(B) A pressure-reducing diaphragm or valve shall be installed.

(C) An automatic control shall be provided to either sound an alarm or shut down the compressor in case of overheating.

6.3.3.10 Dust shall not be permitted to accumulate on the floor or ledges outside of an abrasive blasting enclosure.

6.3.3.11 The blast cleaning nozzle must be equipped with an operating valve which can be held open manually. A support shall be provided to hold the nozzle when it is not being used.

6.3.4 SPRAY BOOTH/SPRAY FINISHING

[§1910.107]

6.3.4.1 General Requirements

- (A) Spray booths shall be designed to sweep air currents toward the exhaust outlet.
- (B) Interiors shall be smooth without edges to prevent pocketing of residue.
- (C) Floor covering shall be non-combustible.
- (D) Spray booths shall be designed so the air velocity over the open face of the booth shall not be less than 100 linear feet per minute (30.48 meters per minute). A visible gauge or audible alarm or pressure activated device shall be installed to ensure this requirement is maintained.
- (E) All discarded filter packs shall be disposed of in accordance with local codes.
- (F) Spray booths shall be protected with an automatic sprinkler system.
- (G) Filters shall be non-combustible.
- (H) Spray booths shall be separated from other operations by not less than 3 feet (0.91 meters).
- (I) Spray booths shall be constructed so that all portions are accessible for cleaning. A clear space of not less than 3 feet (0.91 meters) on all sides shall be maintained free from storage or combustible construction.
- (J) All electrical equipment shall be in accordance with the requirements of **29 CFR 1910.107, Subpart C.**
- (K) No open flame or other sources of ignition shall be within 20 feet (6.10 meters) of any spraying area unless separated by a partition.
- (L) Portable electric lamps shall not be used in any spraying area during spraying operations.
- (M) Mechanical ventilation shall be kept in operation at all times while spraying and for a sufficient time

thereafter to allow vapors and residue to be

exhausted.

6.3.4.2 Flammable/Combustible Liquids

- (A) Storage of flammable and combustible liquids shall conform to the requirements of **29 CFR 1910.106**.
- (B) Flammable/combustibles kept in spraying operations should not exceed 1 day or one shift use. Open or glass containers shall not be used.
- (C) Shut-off valves shall be provided where a hose is attached to piping or containers.
- (D) All pressure hoses and coverings shall be inspected daily.

6.3.4.3 Maintenance

- (A) Spraying operations shall not be conducted outside the predetermined spraying areas.
- (B) Spray finishing employees' clothes shall not be left on the premises overnight unless stored in metal lockers.
- (C) **NO SMOKING** signs shall be posted at all spraying areas and paint storage rooms.

6.3.5 DIP TANKS [§1910.108]

6.3.5.1 General Requirements

- (A) Portable containers used for fitting or refilling dip tanks shall be positively grounded and electrically bonded.
- (B) No open flames, spark producing devices, or heated surfaces having a temperature sufficient to ignite the vapors shall be within 20 feet (6.10 meters) of a dip tank.
- (C) Waste cans shall be provided for rags and other impregnated materials. The cans shall be metal and specifically approved for this type of disposal.

- (D) Covers on dip tanks shall be arranged to close automatically in the event of a fire.
- (E) Periodic inspections of dip tank facilities shall be conducted.
- (F) **NO SMOKING** signs shall be posted in the vicinity of dip tanks.
- (G) Areas in the vicinity of dip tanks shall be provided with extinguishers suitable for flammable and combustible liquid fires.

6.3.6 WELDING AND CUTTING [§1910.253 and 254, Subpart Q; §1926 Subpart J; NFPA 51B]

6.3.6.1 General Requirements

- (A) When combustibles cannot be moved from the welding/cutting area, the requirements of **NFPA 51B** shall be followed. No cutting and welding operation will be permitted without authorization from the Unit Manager/Office Head.
- (B) Suitable fire extinguishers shall be available.
- (C) Fire watches are required if welding of cutting and combustibles in the area could be easily ignited by sparks. This could be greater than or less than 35 feet (10.67 meters) from point of operation.
- (D) Cutting or welding shall not be conducted in areas not specifically authorized by the Unit Manager/Office Head, in the presence of explosive atmospheres which exist or may develop, and where quantities of combustibles are store.
- (E) Supervisors are responsible for the safe handling and use of the cutting and welding equipment.
- (F) Areas shall be made fire safe before cutting or welding is conducted.
- (G) No welding or cutting shall be done on used drums, barrels, tanks, or containers until they have been cleaned thoroughly.
- (H) All welding cables shall be placed so they are clear of passageways, ladders and stairways.

6.3.6.2 Oxygen-Fuel, Gas Welding and Cutting

(A) Transporting, Moving, and Storing Compressed Gas Cylinders

- (1) Valve protection caps shall be in place.
- (2) Cylinders shall not be intentionally dropped, struck, or permitted to strike each other violently.
- (3) Cylinders shall be secured in an upright position by a chain or other suitable means.
- (4) Cylinder valves shall be closed when work is finished and when cylinders are empty or are moved.
- (5) When transporting cylinders by cranes or derricks, a cradle, boat, or suitable platform shall be used.
- (6) Valve protection caps shall not be used for lifting.
- (7) Cylinders shall not be moved unless the regulators are removed and valve protection caps are in place, unless they are secured on a special truck.
- (8) Cylinders shall not be placed so close to work that sparks, hot slag, or flame will reach them.
- (9) Cylinders shall be placed so that they will not become part of an electrical circuit.
- (10) Cylinders shall be placed in an upright position, chained or otherwise restrained to prevent falling.

6.3.6.3 Use of Fuel Gases

- (A) Only properly instructed and qualified employees will operate equipment using fuel gases.
- (B) Fuel gas shall not be taken into confined spaces.

- (C) Fuel gas and oxygen manifolds must be clearly identified and placed in well-ventilated area. The manifold hose connections must be such that the hose cannot be interchanged between fuel gas and oxygen manifolds. Header connections will be supplied.
- (D) Oxygen and fuel gas hoses must be easily distinguished from each other by color or surface characteristics. Torches must be inspected at the beginning of each shift for leaking valves, couplings, and connections, Pressure regulators must be in proper working order while in use.
- (E) Cylinders not having fixed hand wheels shall have keys, handles or non-adjustable wrenches on valves stems while in service.
- (F) Valves shall be closed before moving cylinders.
- (G) Valves shall be closed when work is finished.
- (H) Empty cylinder valves shall be closed.
- (I) Before connecting the regulator, the valve shall be opened slightly and closed immediately while the operator stands to one side of the outlet.
- (J) Acetylene cylinder valves shall be opened as little as one-half turn of the spindle - preferably no more than three-fourths of a turn.
- (K) When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use.
- (L) Acetylene shall never be utilized at a pressure in excess of 15 pounds per square inch gage (p.s.i.g.) (1.06 kilograms per square centimeter).

6.3.6.4 Arc Welding and Cutting

- (A) Oxygen cylinders and fitting shall be kept away from combustible material, especially oil and grease, as oxygen is not compatible with these products.
- (B) Only the correct manual electrode holders shall be used. If the portion gripped by the hand contains

current, it must be fully insulated against the maximum voltage encountered to ground.

- (C) Proper welding cables and connectors must be used and must be completely insulated. Splicing, if used, shall be equal to the insulating quality of the cable and shall not be located within 3.05 meters (10 feet) of the electrode holder.
- (D) Ground return cables must have a safe current-carrying capacity equal to or greater than the specified maximum output capacity of the units serviced. When a structure or pipeline is employed as a ground circuit, a determination must be made that the required electric contact exists at all joints.
- (E) The frames of all arc welding and cutting machines shall be grounded with a third wire or a separate wire which is grounded at the source of the current.
- (F) Arc welding or cutting operations shall be shielded by noncombustible or flameproof screens to protect employees and other persons in the vicinity from the direct rays of the arc.
- (G) Employees performing any type of welding, cutting or heating shall be protected by suitable eye protection equipment.

6.3.6.5 Resistance Welding

- (A) All equipment shall be installed by a qualified electrician.
- (B) A safety type disconnecting switch, circuit breaker or circuit interrupter shall be provided near the machine.
- (C) Operators shall be properly trained and judged competent to operate the equipment before being designated to do so.
- (D) Controls of all automatic air and hydraulic chargers shall be guarded against accidental activation.
- (E) All doors and panels shall be kept blocked on the resistance welding machines.
- (F) Appropriate shields shall be provided to protect workers and passing employees from the sparks.

- (G) Fire curtains shall be provided.
- (H) For spot and seam welding, voltage shall not exceed 120 volts during operation.

6.3.6.6 Welding, Cutting, and Heating Relative to Preservation Coatings

- (A) The flammability of protective coatings must be determined before welding, cutting, or heating is commenced on such surfaces.
- (B) When coatings are highly flammable, they shall be stripped from the area to prevent ignition. Protective measures must be taken when the preservative coating is toxic.

6.3.7 BATTERY ROOMS AND BATTERY CHARGING [§1926.441]

6.3.7.1 General Requirements

- (A) Batteries of the unsealed type shall be located in the enclosures with outside vents and arranged so as to prevent escape of fumes, gases, or electrolyte spray into other areas.
- (B) The room/area housing the batteries will be well ventilated to prevent accumulation of explosive gases or toxic vapors.
- (C) Face protection which provides side as well as frontal protection shall be provided and worn.
- (D) Rubber aprons and gloves shall be provided and worn.
- (E) Facilities for quick flushing of eyes will be provided within 25 feet (7.62 meters) of the battery handling area.
- (F) **NO SMOKING** signs will be posted in the area.
- (G) Fire extinguishers shall be provided, as required by the **State Fire Marshal**.
- (H) Racks and trays must be electrolyte resistant. The racks shall be located in an area of minimal personnel and

vehicle traffic; separate rooms are desirable.

(I) Procedures for electrolyte disposal shall be in accordance with environmental regulations.

6.3.7.2 Battery Charging

(A) Battery charging must be located in areas designated for that purpose.

(B) When batteries are being charged, the vent caps shall be kept in place to avoid electrolyte spray.

6.3.8 REFRIGERANT RECYCLING

6.3.8.1 Records must be maintained at all facilities that service motor vehicle air conditioners.

6.3.8.2 All used refrigerant must be kept in gray containers with a yellow cover, with a label reading "**Dirty Refrigerant, Do Not Use Without Recycling**".

6.3.8.3 Refrigerant recycling and recovery equipment manufactured on or after November 15, 1993 shall meet EPA requirements.

6.3.9 AUTOMOTIVE SERVICE STATIONS

6.3.9.1 Fueling facilities both attended and unattended will comply with the requirements of *National Fire Code 30A* and the rules of the *State Fire Marshal*.

(A) A tested automatic closing type hose nozzle shall be provided on island type dispensers used for Class I liquids.

(B) A hose nozzle used for dispensing Class I liquids into a container shall be manually held open during dispensing.

6.3.9.2 Portable Containers

Dispensing of Class I and Class II fuels in portable containers is prohibited unless the container is metal and is an approved container.

6.3.9.3 Unattended Self-Service Stations

(A) Emergency controls (clearly identified) shall be installed at a location acceptable to the *State Fire Marshal* at a minimum of 20 feet (6.10 meters) from the dispenser, but not more than 100 feet (30.48 meters) from the dispenser to shut off power to all dispensing devices in an emergency. Additional controls shall be installed on each group of dispensers or the outdoor equipment used to control the dispensers.

(B) An approved, tested automatic closing type hose nozzle valve with latch hold-open device shall be provided on fuel hoses used for Class I liquids.

(C) A telephone or other approved, clearly identifiable means of notifying the fire department shall be provided on site.

(D) Additional fire protection shall be provided when required by the *State Fire Marshal*.

6.3.9.4 Drainage and Waste Disposal

Crankcase drainings and liquids shall not be dumped into sewers, streams or upon the ground.

6.3.9.5 Sources of Ignition

Smoking, matches and lighters shall not be permitted within 50 feet (15.24 meters) of areas used for fueling.

6.3.9.6 Fire Control

At least one or more Class 40B:C fire extinguishers shall be located within 100 feet (30.48 meters) of each pump dispenser.

6.3.9.7 Signs

(A) The following signs shall be posted in the dispensing area:

(1) **"WARNING - It is unlawful and dangerous to dispense gasoline into unapproved containers. No Smoking - Stop Motor."**

(2) **"IN CASE OF FIRE OR SPILL**

(a) Use emergency stop button.

(b) Report accident by calling [specify local fire department number and phone location]

(B) Operating instructions shall also be conspicuously posted in the dispensing area. These instructions shall include:

(1) Location of emergency controls.

(2) Requirement for user to stay outside of vehicle during dispensing.

6.3.10 SERVICING OF SINGLE AND MULTI-PIECE RIM WHEELS [*§1910.177*]

6.3.10.1 Training and Instruction

(A) No employee shall service a multi-piece rim wheel unless the employee has been trained. Training at a minimum shall include the applicable data contained in the charts or rim manuals and the contents of *§ 1910.177*.

(B) Each employee shall be able to demonstrate his/her ability to service multi-piece rim wheels safely, including performance of the following tasks:

(1) Demounting of tires (including deflation)

(2) Inspection of wheel components

- (3) Mounting of tires (including inflation within a restraining device)
- (4) Handling of wheels
- (5) Inflation of tires when wheels are mounted on a vehicle
- (6) Installation and removal of wheels

6.3.10.2 Tire Servicing Equipment

- (A) A restraining device shall be available. The supervisor will ensure that employees use the restraining device while servicing multi-piece rim wheels.
- (B) The restraining device shall have the capacity to withstand the maximum force that would be transferred to it during an explosive wheel separation occurring at 150 percent of maximum tire specification pressure for the wheels being serviced.
- (C) Restraining devices shall be capable of preventing rim components from being thrown outside or beyond the frame of the device for any wheel position within the device.
- (D) Restraining devices shall be inspected prior to each day's use. Any restraining device or barrier exhibiting damage such as cracks at welds, cracked or broken components, bent or sprung components, pitting or structural damage shall be removed from service immediately.
- (E) When inflating tires, use a clip-on chuck and an in-line valve with a gauge or pressure regulator.
- (F) Current charts and procedures containing instructions, safety precautions, and other information applicable to the types of multi-piece rim wheels being serviced shall be maintained and available in the service area.
- (G) A current rim manual containing instructions for the type rims being serviced shall be available in the service area.
- (H) Only those tools recommended in the rim manual for the type of wheel being serviced may be used to service multi-piece rim wheels.

6.3.10.3 Wheel Component Acceptability

- (A)** Wheel components shall not be interchanged except as provided in the charts or in the applicable rim manual.
- (B)** Wheel components shall be inspected prior to assembly. Rim bases, side rings, or lock rings which are bent out of shape, pitted from corrosion, broken or cracked shall not be used and shall be rendered unusable and discarded.
- (C)** Mating surfaces of the rim gutter, rings and tire shall be free of dirt, surface rust, scale, or rubber buildup prior to mounting and inflation.

6.3.10.4 Operating Instructions for Servicing Multi-Piece Rim Wheels

- (A)** Tires shall be completely deflated by removing the valve core.
- (B)** Tires shall be completely deflated by removing the valve core, before a wheel is removed from the axle in either of the following situations:
 - (1)** When the tire has been under-inflated at 80 percent or less of its recommended pressure.
 - (2)** When there is obvious or suspected damage to the tire or wheel components.
 - (3)** Rubber lubricants shall be applied to bead and rim mating surfaces during assembly of the wheel and inflation of the tire.
- (C)** Tires shall be inflated only when contained by a restraining device except when the wheel assembly is on the vehicle. Tires that are under-inflated but have more than 80 percent of the recommended pressure may be inflated while the wheel is on the vehicle if remote control inflation equipment is used and no employees are in the path of the trajectory.

An exception to this requirement is contained in the following paragraphs.
- (D)** When multi-piece rim wheels are being handled, employees shall stay out of the trajectory unless it can be demonstrated that performance of the servicing makes the employee's presence in the path of trajectory necessary.
- (E)** When a tire is being partially inflated without a restraining device for the purpose of seating the lock ring or to round out the tube, such inflation shall not exceed 3 p.s.i. (0.21 kilograms p.s.cm.).

- (F)** When a tire is in a restraining device, the employee shall not rest or lean any part of his body or of any equipment on or against the restraining device.
- (G)** After inflating the tire, the tire, rim, and rings shall be inspected while still within the restraining device to make sure that they are properly seated and locked. If further adjustment to the tire, rim or rings is necessary, the tire shall be deflated by removal of the valve core before the adjustment is made.
- (H)** No attempt shall be made to correct the seating of side and lock rings by hammering, striking, or forcing the components while the tire is pressurized.
- (I)** Cracked, broken, bent, or otherwise damaged rim components shall not be reworked, welded, brazed, or otherwise heated.
- (J)** Extension handles (cheaters) will not be used on wrenches for the purpose of removing nuts.
- (K)** Mechanical equipment or other assistance will be provided when it is necessary for the tire shop employee(s) to handle heavy or extremely bulky tires and wheels.

6.3.10.5 Operating Instructions for Single Piece Rim Wheels

- (A)** Tires shall be completely deflated by removal of the valve core before dismounting.
- (B)** Mounting and demounting of the tire shall be done only from the narrow ledge of the wheel. Care shall be taken to avoid damaging the tire beads while mounting tires on wheels. Tires shall be mounted only on compatible wheels of matching bead diameter and width.
- (C)** Nonflammable rubber lubricant shall be applied to bead and wheel mating surfaces before assembly of the rim wheel unless the tire or wheel manufacturer recommends against the use of any rubber lubricant.
- (D)** If a tire changing machine is used, the tire shall be inflated only to the minimum pressure to force the tire bead onto the rim ledge while on the tire changing machine.

- (E) If a bead expander is used, it shall be removed before the valve core is installed and as soon as the rim wheel becomes airtight (the tire bead drops onto the bead seat).
- (F) Tires may be inflated only when contained within a restraining device, positioned behind a barrier or bolted on the vehicle with the lug nuts fully tightened.
- (G) Tires shall not be inflated when any flat, solid surface is in the trajectory and within one foot of the sidewalk.
- (H) Employee shall stay out of the trajectory when inflating a tire.
- (I) Tires shall not be inflated to more than the inflation pressure stamped in the sidewall unless a higher pressure is recommended by the manufacturer.
- (J) Tires shall not be inflated above the maximum pressure recommended by the manufacturer to seat the tire bead firmly against the rim flange.
- (K) No heat shall be applied to a single piece wheel.
- (L) Cracked, broken, bent or otherwise damaged wheels shall not be reworked, welded, brazed, or otherwise heated.

6.3.11 VEHICLE ROLLOVER PROTECTION AND WARNING DEVICES

6.3.11.1 The following vehicles will be provided with rollover protection, seat belts, a service braking system capable of stopping or holding the equipment fully loaded, and fenders or mud flaps if the vehicle is capable of exceeding speeds of 15 miles per hour (24.14 k.p.h.).

- (A) Scrapers
- (B) Loaders
- (C) Crawler or wheel tractors
- (D) Bulldozers
- (E) Off-highway trucks
- (F) Graders
- (G) Agricultural or industrial tractors

6.3.11.2 All two directional equipment such as rollers, compactors, bulldozers, etc., must be equipped with an audible

reverse signal or alarm.

6.3.12 HAZARDOUS WASTE DISPOSAL [§ 1910.120]

6.3.12.1 The Unit Manager shall ensure that:

- (A) Hazardous waste are properly stored, handled and disposed of;
- (B) Approved storage facilities are made available for hazardous waste;
- (C) Storage facilities are properly placarded in accordance with *NFPA 704*;
- (D) Appropriate fire suppression equipment is made available;
- (E) Hazardous waste is not stored within 50 feet (15.24 meters) of the facility property line; and
- (F) All containers of hazardous waste are marked "**HAZARDOUS WASTE**", and the date the waste started accumulating must be included.

6.3.12.2 Hazardous Waste Generators

- (A) All FDOT facilities where hazardous wastes are generated must have an assigned U.S. Environmental Protection Agency identification number.
- (B) Storage of hazardous wastes must not exceed the storage requirements as outlined in *40 CFR*.
- (C) The Unit Manager shall ensure that all shipments of hazardous wastes are properly manifested and a log maintained reflecting the manifest number, name of transporter, amount of waste shipped, and the date the original manifest was returned.
- (D) All hazardous waste must be packaged, labeled, marked and placed in accordance with *49 CFR*.
- (E) The generator must maintain records of all its hazardous waste operations. A copy of each manifest with the

handwritten signature of the transporter and the signature and date of acceptance by the designated disposal facility must be maintained for three (3) years.

(F) The generator must keep a copy of each Annual Report and Exception Report for at least three (3) years from the due date of the report (March 1).

(G) The generator must keep records of any test results, waste analysis, or other determinations made for at least three (3) years from the date that the waste was last sent to an on-site or off-site treatment, storage, or disposal facility.

(H) Upon completion of the three (3) year period stated in (e) 1. and 3. above, the generator shall forward the records to the Department of State, Bureau of Archives and Records Management, Mail Station 9A, R.A. Gray Building, Tallahassee, FL 32399.

(I) The generator who ships hazardous waste off-site must submit an Annual Report. Once the generator has received a USEPA identification number, the FDEP will send an annual report form to be submitted.

(J) The generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated treatment, storage, or disposal facility within thirty-five (35) days of the date the waste was accepted by the initial transporter then must contact the transporter and/or owner or operator of the designated facility to determine the status of the hazardous waste.

(K) The generator must submit an Exception Report to the Secretary of the FDEP if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated treatment or disposal facility within forty-five (45) days of the date the waste was accepted by the initial transporter.

6.3.12.3 Hazardous Waste Spills

First responders who are only responsible for notifying proper authorities are required to be trained at the awareness level to understand what hazardous substances are, the risks involved, and what action to take in notifying the proper authorities for clean up.

6.3.13 BOATING OPERATIONS

Technically, a boat is classified as a vessel, but for the purpose of FDOT, they will also be classified as vehicles.

- (A) Smoking in boats is prohibited.
- (B) Employees shall not be authorized to use a boat (with the exception of john boats, utility boats used in culverts, streams) unless they have successfully completed an approved safety course.
- (C) Boats shall be equipped with the appropriate personal flotation device for each person aboard.
- (D) All boats except utility boats shall be required to carry visual distress signals for use during daylight and night-time operations.
- (E) Because certain navigational rules require sound signals, a whistle, horn or bell shall be carried on board all boats, except utility boats used in coastal waters or territorial seas.
- (F) All boats shall use navigational lights between sunset and sunrise.
- (G) Anchor lights shall be used on all boats at anchor unless the boat is less than 23 feet (7.01 meters) in length or the boat is anchored in or near a narrow channel, fairway or anchorage or where other vessels normally navigate.
- (H) For diving operations, the red and white divers flag shall be displayed or the nationally recognized Letter "A" diver's flag. (*Refer to the FDOT Divers Manual for details.*)
- (I) A first aid kit shall be carried in the boat.
- (J) A float plan should be completed and filed with the supervisor before leaving the facility.
- (K) Standing in small utility boats while in the water should be avoided.
- (L) Employees shall not sit on the gunnels, seat backs or raised pedestal seats while underway.
- (M) Unless anchoring both fore and aft, boats shall not be anchored by the stern.
- (N) All equipment in the boat shall be secured before getting underway.

- (O) Fill all portable fuel tanks on the dock. Wipe off all spilled fuel immediately.
- (P) After fueling, open all hatches and windows and let the boat air out; run the blower (if equipped) before starting the engine.
- (Q) All gas powered or diesel powered boats shall have at a minimum one type B-1 hand portable fire extinguisher.
- (R) All employees in boats shall wear a U.S. Coast Guard approved life vest. The only exception would be the divers during diving operations and while wearing a DOT approved flotation device. *(Refer to the FDOT Diver's Manual for details.)*
- (S) Cutting or welding work in a gas powered boat is prohibited.

6.3.14 DIVING OPERATIONS

Working in an underwater environment is inherently hazardous in that it subject divers continually to life-threatening safety and health hazards which include high pressure, temperature extremes, unpredictable sea states, toxic substances, abnormal stresses, physical hazards (such as falling), loose or sharp underwater objects, hazardous sea creatures/plant life, and hazards involved while using underwater tools and equipment. For procedures and requirements for diving operations, refer to *FDOT Dive Manual, Topic 850-010-011*.

6.3.15 STORAGE FACILITIES AND STORAGE AREAS

Both inside and outside storage facilities are used by the Department. Warehouses, storage yards, and supply dumps are all part of storage operation. Safe work practices must be observed by employees working in any type of storage facility to prevent hazards caused by the methods of storage and to protect the materials being stored.

6.3.15.1 Warehouse - Inside Storage

- (A) **Hazardous Substances** - Dangerous materials, such as flammable liquids, corrosives, and toxic substances will

be stored only according to specific instructions of the *State Fire Marshal* and other appropriate state and local standards. Hazardous substances shall be stored in special containers in well ventilated, fire-resistant areas. All sources of ignition including smoking shall be prohibited in these storage areas. Certain other commodities such as oils and grease, which are subject to spontaneous combustion, will be stored where they present no hazards to employees or property.

(B) Floors - Floors in warehouses will not be overloaded at any time. For upper storage areas, safe load capacities will be established and posted in plain view of all employees.

(C) Stacked Material - Materials will be piled in neat stacks, stabilized by dunnage if necessary. Leaning or unbalanced stacks will be re-piled immediately to prevent their falling.

(D) Electric Light Fixture Clearance - Stacked materials will be kept at least 18 inches away from electric light fixtures. Guards shall be installed over hanging light fixtures to prevent accidental breakage of the bulb and injury to employees.

(E) Ignition Hazard - Smoking will not be permitted in any storage area.

(F) Fire Equipment - Stored materials will be kept at least 18 to 36 inches from automatic sprinkler valves, fire hoses, extinguishers, sprinkler heads, exits, and fire doors.

(1) Stacked materials, bins, and shelves will be arranged to permit immediate access to all storage areas during a fire.

(2) Fire exits shall be marked and easily accessible.

(G) Second Deck Storage Bins - Hand rails and ladders (portable or fixed) shall be provided for safe access to second deck storage bins. Materials that requires frequent handling should not be stored in second deck storage bins.

(H) No one will stand on boxes, chairs, tables, desks, or any other makeshift stand to reach supplies or stock stored on shelves. Always use a safe step ladder.

(I) Housekeeping - Floors shall be kept clean and free of tripping hazards. Aisles and stairways shall be kept free of obstructions which interfere with operations.

(J) Aisles - Proper aisles should be maintained for the safe storage/removal of materials. This allows for enough room to carry or transport supplies and equipment by hand or with powered equipment.

(1) Aisle spaces should be kept to a minimum as it limits storage space, but aisles shall be should be adequate for

handling the type of materials to be stored.

- (2) Aisles should be straight, and lead directly to exits.
- (3) Intersections of aisles should be located where there is maximum illumination and visibility.

(K) Mechanical Materials Handling Equipment - Mechanical devices will be used when loads are too heavy or bulky to be lifted or carried efficiently or safely by hand. Fork lifts, conveyors, hand trucks, chutes, rollers, and hoists, when properly used, simplify materials handling and greatly reduce accident, injury, and damage potential.

6.3.15.2 Stored Materials - Outdoors

(A) Both temporary and permanent storage shall be neat and orderly.

Materials piled haphazardly or strewn about increase the possibility of accidents and injuries to employees and damage to materials.

(B) Drums or containers for dispensing flammable or other liquids shall be stored on racks in outside areas. Drip pans shall be provided to catch spills. Flammable liquid drums shall have a means for grounding against static electricity.

(C) Lumber Storage

- (1) Lumber shall be sorted by size and length and stored in separate piles.
- (2) Firm ground shall be selected for outdoor lumber piling or stacking.
- (3) The area should be well drained.
- (4) A periodic check should be made to determine if there is shifting of stacked or piled material.
- (5) Used lumber will have all nails removed before it is stacked for storage.

(D) Bagged Materials Storage

- (1) Bagged materials shall not be stacked more than 10 bags high without setbacks, except when restrained by supports of appropriate strength.
- (2) Bags shall be cross-tied with the mouths of the bags toward the inside of the pile.

(3) During unstacking, the pile must never be undermined by the removal of bags from the lower rows first, but from the top.

(4) The entire top of the stack shall be kept nearly level and the necessary setback maintained.

(E) Concrete Blocks, Hay or Straw Bales

(1) These materials shall be stacked in tiers on solid, level surfaces.

(2) The stacks shall be set back and secured to prevent toppling.

(3) Hay or straw bales are a fire hazard and shall be kept dry.

(4) Hay or straw bale storage areas shall be properly posted with "**NO SMOKING**" and "**NO SOURCES OF IGNITION**" signs within 50 feet to prevent fire.

(F) Steel and Aluminum - Reinforcing sheet, structural aluminum, and steel shall be stored in orderly piles away from walkways and roadways. These items shall be securely piled to prevent members from sliding off or the pile toppling over.

(G) Pipe - Pipes shall be stacked and blocked so as to prevent spreading or rolling. Separate stacks shall be made for each size, and should not be more than 5 feet tall.

(H) Round Piling or Poles

(1) Round piling or poles shall be stored in an orderly manner on a solid, level surface.

(2) Either a pyramid stack or battened stack shall be used.

(3) The lower tier of stacks shall have all piles or poles securely chocked to prevent lateral spread.

(4) Unloading of round pilings, poles, or pipe shall be done so that no person be required to be on the unloading side of the carrier after the tie wires have been cut or during the unloading of stakes.

(I) Sand, Gravel, Dirt, Crushed Stone, Asphalt Mix

(1) When operators remove this material from stock piles, either manually or by mechanical means, they shall insure that no overhang or vertical face exists.

(2) Materials stored or stacked against walls or partitions shall not be at a height that will endanger the stability or exceed the strength of walls or partitions.

6.3.16 WORKING SURFACES, FLOOR OPENINGS AND STAIRWAYS**(A) Walking-Working Surfaces [§1910.22]**

- (1) All shop areas, utility rooms, halls, and store rooms shall be kept clean and orderly.
- (2) All floors shall be kept clean and dry as possible.
- (3) Aisles used by material handling equipment shall be appropriately marked on the floor.
- (4) Aisles, passageways and floors shall be kept free of any obstructions such as protruding rails, splinters, holes or loose boards.
- (5) Covers or guardrails shall be provided to protect employees from open holes, ditches, etc.

(B) Guarding Floor Openings, Wall Openings And Holes

[§1910.23 and §1926.500]

- (1) **Floor opening** is any opening measuring at least 12 inches (30.48 cm) or more in any floor, roof, or platform through which a person may fall.
- (2) Every **stairway floor opening** shall be guarded by a standard railing. All exposed sides (except entrance) shall be guarded.
- (3) All **ladder-way floor openings** shall be guarded by a railing with toeboards and a swinging gate.
- (4) Every **hatchway and chute floor opening** shall be guarded by either a hinged floor opening with standard railing or a removable railing with toeboard on two sides and fixed railings with toeboards on all other exposed sides.
- (5) All **pit and trap door openings** infrequently used when the cover is not in place shall either be constantly attended by an employee or protected on all exposed sides by removable railings.
- (6) Every **temporary floor opening** including manholes, when the cover is not in place shall be constantly attended by an employee until the work requiring the opening has ended or protected by removable railings if posting of an employee is ineffective or not feasible.
- (7) **Wall Openings**
 - (a) All wall openings where there is a drop of more than 4 feet (1.22 meters) shall be protected by a rail, roller, picket fence, half door or equivalent barrier.
 - (b) Every temporary wall opening shall have adequate guards.

(8) Open sided Floors, Platforms and Runways

- (a) Every open sided floor or platform 4 feet (1.22 meters) or more above the adjacent floor or ground level shall be guarded by standard railings.
- (b) Toeboards shall be provided when employees can pass beneath the open sides or falling materials could cause a hazard.

(C) Stairway Railings and Guards

Every flight of stairs having four or more risers shall be equipped with standard handrails.

(D) Stair Treads

All treads shall be reasonably slip-resistant and nosings shall be of non-slip finish.

(E) Fixed Industrial Stairs

This requirement includes interior and exterior stairs around machinery, tanks and other equipment, and stairs leading to or from floors, platform or pits.

- (1) The stairs shall be made to carry a load of five times the normal line load anticipated.
- (2) The width of the stairs shall be a minimum width of 22 inches (55.88 cm).
- (3) The stairways shall be designed and installed at angles to the horizontal of between 30 degrees and 50 degrees.
- (4) All treads shall be slip resistant.
- (5) Stairways platforms shall be no less than the width of the stairway and a minimum of 30 inches in length measured in the direction of travel.
- (6) Railings and handrails shall be provided on the open sides of all exposed stairways and stair platforms.
- (7) A vertical clearance above any stair tread shall be at least 7 feet (2.13 meters).

6.3.17 CRANES

(A) Crawler, Locomotive and Truck Cranes [§ 1910.180 and §1926.550]

- (1) Only trained and designated employees shall be permitted to operate a crane.
- (2) Rated load capacities, recommended operating speeds, and special hazard warnings shall be conspicuously posted on all equipment within view of the operator.
- (3) Operator shall be prohibited from dragging loads sideways with the crane.
- (4) The operator shall be prohibited from leaving his position at the controls while the load is suspended.
- (5) Employees shall be prohibited from standing or passing under a load on a hook.
- (6) All tools, equipment, oil cans, waste, etc., shall be prohibited from being allowed to lie loose in or about the cab.
- (7) The minimum clearance between electrical lines and the crane shall be 10 feet (3.05 meters) from lines rated 50 kilovolts or below; greater clearances are needed from higher voltage lines.
- (8) The accessible area within the swing radius of the rear of the superstructure of the crane shall be barricaded in such a manner to prevent an employee or equipment from being struck.
- (9) All hauling vehicles whose payload is loaded by means of cranes, power shovels, etc., shall have a cab shield or canopy.
- (10) Operators of cranes, hoists or similar lifting equipment shall take signals from only one person who is knowledgeable of the standard hand signals. Illustrations of standard hand signals shall be posted.

(11) Inspections

- (a) **Daily**, to be conducted by a by a designated competent person, on all control mechanisms all safety devices, hydraulic systems, hooks, ropes, electrical systems.
- (b) **Annually**, a complete inspection conducted by a competent person or government/private agency Includes and certification record of when, who inspected, results, and what was inspected.

(B) Vehicle-Mounted Elevating and Rotating Work Platforms

[§1910.67]

- (1) Lift controls shall be tested each day prior to using equipment.
- (2) Only trained employees shall be authorized to operate this equipment.
- (3) Employees shall be prohibited from sitting or climbing on the edge of the basket and from using planks, ladders, or other devices for a work position.
- (4) A body belt with lanyard shall be required to be worn and attached to the boom or basket.
- (5) Brakes shall be set, and outriggers, when used, positioned on a solid surface.

- (6) Load limits shall be used when the vehicle is on an incline.
- (7) Wheel chocks shall be used when the vehicle is on an incline.
- (8) Aerial trucks shall be prohibited from being moved when the boom is elevated and employees are in the basket.
- (9) Employees are prohibited from belting off to an adjacent pole, structure or piece of equipment while working from an aerial lift.

(10) Articulating boom and extended boom platforms designed as personnel carriers shall have both platforms and lower controls. The controls shall be plainly marked.

(C) Overhead and Gantry Cranes

- (1) The load rating shall be clearly marked on each side of the crane.
- (2) Only trained, designated employees shall be allowed to operate the crane.
- (3) All exposed moving parts shall be guarded.
- (4) Electrical equipment shall be protected from dirt, grime and moisture.
- (5) All live electrical parts shall be covered.
- (6) Modifications to the cranes shall be prohibited unless authorized and approved in writing by the manufacturer.
- (7) Operators shall be prohibited from moving loads over the heads of employees, leaving lifting devices unattended with a load suspended, and allowing employees to stand under a suspended load.
- (8) Inspections shall be conducted:
 - (a) **Daily** on all functional operational mechanisms, hydraulic systems, tanks, pumps, hooks, hoist chains and connections.
 - (b) **Monthly** on all hooks, hoist chains, ropes (cables). Requires a certification record including date of inspection, signature of inspector, and what was inspected.
 - (c) **Periodic**, at least annually, on all of the above including bolts, units, brakes, gears, electrical, drive gears, sheaves, wire ropes, corrosion and other components.
- (9) Hooks with more than 15 percent in excess of normal throat opening or more than 10 degree

twist from the plane of the unbent hook shall

be discarded.

Chapter 7

TRAINING REQUIREMENTS

This Chapter identifies the training required by the regulation and the training necessary for employees to perform their assigned tasks effectively and in a safe manner.

7.1 GENERAL REQUIREMENTS

7.1.1 All safety training must be coordinated through the responsible HRD and district safety office.

7.1.2 Employees shall be allowed sufficient time during normal duty hours to attend required safety training.

7.1.3 Instructors shall maintain current certification on the courses they are authorized to teach.

7.1.4 All training shall be documented on a TRESS form.

7.2 TRAINING AND INSTRUCTIONS

7.2.1 Unit Managers/Office Heads shall ensure that training and instruction of employees are provided in the following areas.

(A) Awareness training for employees on confined spaces. [**§1910.146**]

- (B)** Noise and hearing protection training for employees when assessment indicates employees are exposed to noise at or above an eight hour time weighted average of 85 decibels or when required to wear hearing protection. *[\$1910.95(k) and §1926.101; Annual]*
- (C)** Respirator training for employees required to wear respirators. *[\$1910.134 and §1926.103; Annual]*
- (D)** General principles of fire extinguisher use and the hazards involved in its use. *[\$1910.157, §1926.150; Annual]*
- (E)** Operation of forklift trucks. *[\$1910.178]*
- (F)** Crane operation (overhead, gantry, truck). *[\$1910.179-180, §1926.550]*
- (G)** Operation of cutting/welding equipment. *[\$1910.253-255, §1926.350 and §1926.351]*
- (H)** Operation of aerial lifts. *[\$1910.67]*
- (I)** First Responder Awareness Level course for all employees who are likely to witness or discover a hazardous substance release. *[\$1910.120]*
- (J)** Work operation requiring employees to use energy control procedures (Lock out/Tag out of energy sources). *[\$1910.147]*
- (K)** Work situation where there is potential exposure to airborne lead at any _____ level. *[\$1910.1025; annual]*
- (L)** Employees who are responsible for electrical repair who faces risks of electrical shock and other electrical hazards. *[\$1910.331-335, §1926.404]*
- (M)** Bloodborne pathogen exposure training for motor carrier law enforcement compliance officers and FDOT divers *[\$1910.1030; annual]*
- (N)** Exposure to harmful plants or animals. *[\$1926.21]*

- (O) Servicing multi-piece rim wheels. [*§1910.177*]
- (P) Safe handling procedures, material contents, safety data sheet for employees who work with hazardous materials. [*Chap. 442, F.S., §1926.21; §1910.106, §1910.1450*]
- (Q) Chain saw operations. [*§1910.266*]
- (R) Paint spray applications per *NFPA 33*.
- (S) When employees are required to wear any type of personal protective equipment. [*§1910.132*]
- (T) Operation of woodworking equipment. [*§1926.302; 304*]
- (U) Installation, removal, operation and maintenance of LP gas. [*§1910.110*]
- (V) Proper use of hand tools. [*§1926.301*]
- (W) Operation of agricultural tractors, upon initial assignment and annually thereafter. [*§1928.51*]
- (X) For all employees on emergency plans and fire prevention plans. [*§1910.38*]
- (Y) Use of ladders and stairways on construction and maintenance related activities. [*§1926.1060*]
- (Z) Recognition and avoidance of unsafe conditions and the regulations applicable to construction and maintenance work and activities. [*§1926.21(b)(2)*]

7.3 SPECIAL TRAINING

- (A) First aid and CPR training, if requested by employees.
- (B) Training for all flaggers on the Manual on Uniform Traffic Control Devices (MUTCD).

- (C) Defensive driving for all new employees who operate FDOT vehicles.
- (D) Equipment operation training for employees who operate state-owned equipment.
- (E) Training on proper lifting procedures for employees who are issued back supports.

Chapter 8

PROGRAMS

Section 1

CONFINED SPACE ENTRY

This section provides the information necessary for identifying confined spaces at FDOT owned or lease properties and the measures to be taken to ensure safe entry of employees in such confined spaces.

8.1.1 DEFINITIONS

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(A) **Confined Space** - An enclosed space that:

- (1) Is large enough for an employee to bodily enter;
- (2) Has limited or restricted means of entry or exit (for example, tanks, vaults, wells, tunnels, pits); and
- (3) Is not designed for continuous employee occupancy.

(B) **Permit-Required Confined Space (PRCS)** - A confined space that has one or more of the following characteristics:

- (1) Contains or has the potential to contain a hazardous atmosphere;
- (2) Contains a material that has the potential for engulfing an entrant;
- (3) Has an inside 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; or
- (4) Contains any other recognized serious hazards.

(C) **Entry** - The action by which a person passes through an opening into a permit-required confined space.

(D) **Entry Permit** - The written or printed document that is provided to allow and control entry into a permit space.

(E) **Engulfment** - The surrounding, capturing, or both, of an entrant by divided particulate matter or liquid.

(F) **Hazardous Atmosphere** - An atmosphere that may expose employees to risk of death, or incapacitation, injury or illness by reason of oxygen deficiency or enrichment (**19.5%-23%**), flammability or explosivity, or toxicity.

(G) **Non-Permit Confined Space (NPCS)** - A space, which by configuration meets the definition of a confined space but which after evaluation is found not to contain or with respect to atmospheric hazards, does not have the potential to contain any hazard capable of causing death or serious physical harm.

8.1.2 GENERAL REQUIREMENTS

(A) Confined Space Identification/Classification

(1) Unit Managers/Officer Heads or their designees shall ensure that the following are conducted:

(a) Confined space awareness training for employees;

(b) A survey of their respective areas of responsibility to identify all potential permit-required confined spaces (PRCS);

(c) An evaluation of the potential PRCS to identify hazards for each confined space;

(d) An evaluation of the hazards, considering scope of hazard exposure; magnitude of hazard; likelihood and consequence of hazard occurrence; changing conditions/activities; impact on need for emergency response; and

(e) Based on the evaluation of hazards, classify and list confined spaces as either permit-required confined space (PRCS) or non-permit confined space (NPCS).

(B) Periodic Evaluation of Hazards

(1) Periodic identification and re-evaluation of the hazards based on possible changes in activities in the confined space or other physical or environmental conditions which could adversely affect the space, must also be conducted.

(2) A space that is identified but has not been classified and listed as a confined space shall be evaluated on a case-to-case basis.

8.1.3 MARKING OF CONFINED SPACES

Signs must be posted or other warnings must be used to alert employees of the danger of the particular confined space. **"Danger. Permit-Required Confined Space. Do Not Enter"** signs or barriers or other

means to keep unauthorized employees out of the permit space may be used.

8.1.4 ENTRY IN CONFINED SPACES

(A) Except under certain conditions, **NO** FDOT employee will be allowed to enter a PRCS. Effective measures such as those mentioned in paragraph **8.1.3** , shall be taken to prevent employees from entering the permit spaces.

(B) If the Unit Manager/Office Head has determined that the only hazard in the identified confined space is atmospheric and ventilation alone can control the hazard, entry into the confined space may be authorized. In such a case, the requirements for alternative protection procedures under of **29 CFR 1910.146(c)(5)** shall be followed and complied with.

8.1.5 CONTRACTORS

Unit Managers/Office Heads shall ensure that when another employer, such as a contractor, perform work that involves entry into a confined space that has been identified as a PRCS, said employer shall be provided with sufficient information about the PRCS involved and the necessary requirements to comply with **29 CFR Part 1910.146**.

Section 2

RESPIRATORY PROTECTION PROGRAM

In the control of occupational diseases caused by breathing harmful airborne contaminants, the primary objective is to prevent atmospheric contamination. This shall be accomplished, where feasible, by accepted engineering control measures such as enclosure or confinement of operations, general and local exhaust ventilation, and substitution of less toxic materials. Respirators are to be used only when engineering controls of respiratory hazards are not feasible, or when engineering controls are being installed, or in emergencies.

8.2.1 RESPONSIBILITIES

(A) Unit Managers/Office Heads or their designees are responsible for ensuring that when respirators are required and used, that the respiratory protection program is implemented.

(B) Employees are responsible for using respiratory protection in accordance with the training and instructions received.

8.2.2 RESPIRATOR NEED AND SELECTION

The need for respiratory protection shall be determined through periodic inspections and testing by industrial hygienists or other qualified competent persons. The basis for respirator selection is dependent upon the airborne contaminant present; the physical, physiological, chemical, and toxicological properties of the contaminant; the applicable threshold limit value or permissible exposure level for the contaminant; the location of the hazardous area with respect to a safe area having respirable air; the period of time for which respiratory protection is to be provided; the activities of workers in the hazardous area; and the physical characteristics, functional capabilities and limitations of respirators of various types.

8.2.3 PHYSICAL EXAMINATION

Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined by a physician that they are physically able to perform the tasks while using a respirator. The user's medical status will also be reviewed annually.

8.2.4 RESPIRATOR TRAINING/INSTRUCTIONS

- (A) Respirator user will be instructed and trained in the proper use of _____ respirators and their limitations. Every respirator wearer will receive fitting _____ instructions, including demonstrations and practice on how the _____ respirator should be worn, how to adjust it and how to determine if it fits _____ properly. The respirator wearer should have an opportunity to handle the _____ respirator, have it fitted properly, test its facepiece-to-face seal, wear it in normal air for familiarity period, and finally to wear it in a test atmosphere.
- (B) Respirators shall not be worn when conditions prevent a good face seal. _____ Such conditions may be growth of beard, sideburns, or temple piece on _____ glasses. The facepiece fit will be checked by the wearer each time the _____ wearer puts on the respirator.
- (C) All training will be documented on the TRESS form.

8.2.5 RESPIRATORS CLEANING, INSPECTION, AND STORAGE

- (A) **Cleaning.** Respirators shall be cleaned and disinfected after each use before reused.
- (B) **Inspection.** Respirators shall be inspected before and after each use. The inspections shall include a check of the tightness of connections and the condition of the facepiece, headband, valves, connecting tubes and canisters. Rubber or elastomer parts shall be checked for pliability and signs of deterioration.
- (C) **Storage.** After inspection, cleaning, and necessary repair, respirators shall be stored and protected from dust, sunlight, heat, excessive moisture, and damaging chemicals. Routinely used respirators may be stored in plastic bags in such a way that the faceplate and exhalation valve will rest in a normal position. Respirators will not be stored in lockers or tool boxes unless they are in carrying cases or cartons.
- (D) Only qualified and experience persons designated by the Unit _____ Manager/Office Head shall be authorized to repair respirators.

8.2.6 PROGRAM MONITORING

To assure the adequacy of the respiratory protection program, monitoring shall be conducted by the supervisors and unit safety and health specialists or designated safety persons.

Section 3

HEARING CONSERVATION PROGRAM

8.3.1 GENERAL REQUIREMENTS

(A) Unit Managers/Office Heads shall ensure that an assessment is made of all work operations or processes which may expose employees to noise levels that **equal or exceed an eight-hour TWA of 85 dBA**.

(B) A noise survey shall be conducted by adequately equipped and qualified personnel to evaluate the noise levels, following the criteria under **29 CFR 1910.95**.

(C) When the evaluation of a work operation or process indicates that the employee's noise exposure **exceeds the allowable levels**, the following shall be instituted:

(1) Administrative / Engineering Controls

These controls must first be considered and used. If these controls are not feasible or do not work, personal protective equipment must be provided.

(a) Hearing protectors must be available to all employees **exposed at or above 85 dBA**.

(b) Employees should be given the opportunity to select hearing protectors, with the assistance from a qualified and trained person, which size and type of protector is suitable for their work environment.

(2) Monitoring Program

- (a) Monitoring should identify employees who need to be included in the program and enable the proper selection of hearing protectors.
- (b) Monitoring shall be conducted by qualified personnel and has to be repeated when ever a change in operation, process, equipment or controls increases noise to an extent that may expose employees to unacceptable levels.
- (c) Each employee **exposed at or above an 8-hour TWA of 85 dBA** must be notified of the results of the monitoring.

(3) Audiometric Testing Program

- (a) Audio-metric testing shall be made available, at no cost, to any employee whose exposure **equals or exceeds an 8-hour TWA of 85 dBA.**
- (b) Audio-metric testing shall be performed by a certified professional or qualified technician, and audiograms established in accordance with the requirements of **29 CFR 1910.95.**

(4) Training

Training shall be conducted for all employees determined to be **exposed to TWA's of 85dBA and above,** repeated **annually** and include:

- (a) The effects of noise on hearing;
- (b) The purpose of hearing protection and information on selection, fitting use and care; and
- (c) The purpose and procedures for audiometric testing.

8.3.2 RECORDKEEPING

- (A) Noise measurement records shall be maintained for two years and audiometric test records shall be maintained for the duration of the

affected employee's employment.

(B) All training shall be documented on the TRESS form.

Section 4

MOTOR VEHICLE/HEAVY INDUSTRIAL EQUIPMENT OPERATION AUTHORIZATION

8.4.1 RESPONSIBILITIES

(A) Unit Manager/Office Head shall ensure that:

(1) Only qualified applicants are hired and employed as FDOT equipment operators. (Refer to *Topic No. 000-250-015-a, and*

Rule 14-17.015); and

(2) A list of currently authorized motor vehicle and equipment operators is prepared and maintained and that each supervisor is provided with this list.

(B) Supervisors shall:

(1) Check the Department of Highway Safety and Motor Vehicles driving transcripts to determine if the employee's driver's license is valid or if six or more points were accumulated in the last twelve months. Employees whose licenses were suspended **will not** be authorized to drive FDOT vehicles.

(2) Immediately suspend driving privileges and/or discipline employees who improperly operate any state-owned vehicle or equipment, or are not authorized to operate it.

(C) Operators shall:

(1) Properly care for and safely operate all vehicles or equipment they are assigned to operate.

(2) Report to their supervisor no later than the next work day following the suspension or revocation of their driver's license or commercial driver's license.

8.4.2 TRAINING AND AUTHORIZATION OF OPERATORS

(A) The Unit Manager/Office/Head or his/her designee shall:

(1) Assign the responsibility for verifying the competency of equipment operators to FDOT operators qualified by experience, training, and knowledge of equipment, or

(2) Contract the training of operators with outside sources.

(B) Current Operators

(1) Unit Safety and Health Specialists/designated safety persons will complete the list of authorized equipment operators to include all operators' names, initials of supervisors, and all vehicles at the facility.

(a) Check off under each piece of equipment the employee is authorized to operate.

(b) Provide a copy of this list to all supervisors and the District Safety and Health Manager.

(2) All operators currently authorized to drive specific equipment will have their authorization reconfirmed with the approval of the Unit Manager/Office Head or his designee.

(C) New Employees

(1) The supervisor shall contact the Unit Safety and Health Specialist/designated safety person and prepare the vehicle operator authorization list.

(a) The supervisor shall either coordinate with the FDOT qualified operators to verify the competency of the employee or, if contractors are being used, the supervisor shall coordinate the enrollment of the employee in the training program.

(b) The supervisor may authorize the employee to operate the equipment provided the new employee can show proof of training by his/her previous employer, the employee can operate the equipment satisfactorily, and knows the proper safety requirements for operation.

(2) The trainer (outside contractor or FDOT qualified operator) will train the employee on all operational characteristics and inspection of the equipment to include proper safety procedures. Training will consist of hands-on operation and instruction.

(3) Upon completion of training, the trainer and trainee will sign the operator vehicle authorization list, acknowledging that training was completed and the list returned to the Unit Safety and Health Specialist/ designated safety person.

(4) The Unit Safety and Health Specialist/designated safety person or supervisor will complete a TRESS report and send it to the District Safety Office.

(5) HRD or the District Safety Office, will input the TRESS report and send a certificate of completion to the employee, unless a training certificate is provided by the outside training contractor.

(6) The Unit Safety and Health Specialist/designated safety person shall update the authorized equipment operator list and distribute copies to the supervisor and the District Safety Office.

(D) Remedial Training

- (1) Competency should be verified annually for all operators who operate the equipment on a part-time basis.
 - (2) HRD or the District Safety Office will input the TRESS report and send a certificate of completion to the employee, unless a training certificate is provided by the outside training contractor.
 - (3) The Unit Safety and Health Specialist/ designated safety person shall update the authorized equipment operator list and distribute copies to the supervisors and the District Safety Office.
- (E) **Vehicle Crash/ Incident Review**

All vehicle crashes/ incidents, where an employee authorized to operate Department equipment or vehicle was determined to have operated it in an unsafe manner, will be reviewed by the appropriate Unit Manager/Office Head or his/her designee to determine if the employee should be allowed to operate said equipment or vehicle.

Section 5

HAZARDOUS ENERGY CONTROL PROGRAM

(LOCK-OUT/TAG OUT)

This program has been established to ensure, whenever the possibility of unexpected machine or equipment start-up exists, or when the unexpected release of stored energy could occur and cause injury to employees, that the machine or equipment is isolated from its energy source(s) and is rendered inoperative prior to servicing or maintenance. Energy sources include electrical, mechanical, hydraulic, chemical, thermal and any other source of energy.

8.5.1 RESPONSIBILITIES

(A) Unit Manager/Office Head

Unit Managers/Office Heads or their designees are responsible for ensuring that:

- (1) Employees authorized to repair, clean or perform maintenance on any machine or equipment follow the lockout/tag out requirements of this program;
- (2) Authorized employees are given instructions and understand the type and magnitude of the energy source(s) that the machine or equipment utilizes and the methods and means necessary to isolate and control the energy source(s);

- (3) Isolating devices, such as manually operated electrical circuit breakers, disconnect switches, or line valves controlling the energy source to the equipment or machines that will be locked-out or tagged-out are located and identified; and
- (4) A list of all equipment requiring energy control is maintained.

(B) Authorized Employees

Before repairing, servicing or performing maintenance on a machine or equipment, the authorized employee must:

- (1) Notify all other employees such as those required to operate or use the machine or equipment or those required to be in the area in which servicing or maintenance of the machine or equipment is being carried

out, that a lock-out/tag out is going to be utilized and the reason for its use;

- (2) Know the type and magnitude of the energy, the hazards of the energy to be controlled and the means of control;
- (3) Shut down the machine or equipment by normal stopping procedure, such as pressing stop button, moving switch to "off" position, or opening toggle switch;
- (4) Isolate main power source, switch(s), valve(s) or other sources of energy by moving to the "off" position rendering it inoperative;
- (5) Place lockout/tag out device on switch(s) or other energy source in a "off" or safe position;
- (6) Make sure that stored or residual energy such as those on springs, hydraulic systems, air, gas steam or water pressure, is relieved or restrained by methods such repositioning, bleeding down or blocking;
- (7) After making sure that no employees are exposed, operate the push button or other normal operating controls(s) to verify or test that the machine or equipment will not operate; and
- (8) Make sure that the operating control(s) are returned to **neutral** or "off" position after the test. The necessary repairs, servicing or maintenance may then be performed.

(C) Other Employees

All other employees, upon observing that there is a lockout or tag-out device in place on an energy-isolating device, must not attempt to start, energize or use the machines or equipment being serviced or maintained.

8.5.2 WHEN MORE THAN ONE AUTHORIZED EMPLOYEE IS INVOLVED

(A) If more than one employee is authorized to lockout or tag-out equipment, each shall place his/her own issued lock or completely filled out tag-out device on the energy-isolating device(s).

(B) When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout or tag-out device (hasp) may be used.

(C) If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use his/her own lock to secure the box cabinet.

(D) As each employee no longer needs to maintain his/her lockout protection, that employee will remove his/her lock from the box or cabinet authorized for group lockout or tag-out.

8.5.3 RESTORING MACHINES OR EQUIPMENT TO SERVICE

(A) When the servicing or maintenance is completed and the machine or equipment is ready for normal operation, the authorized employee shall:

(1) Check the area around the machines or equipment to make sure that no employee is exposed;

(2) After removing all tools, reinstalling guards and other machine or equipment components, remove the lockout devices and reenergize the machine or equipment; and

(3) Notify all other employees that the servicing or maintenance has been completed and the machine or equipment is ready for use.

8.5.4 DRAWBRIDGE EQUIPMENT SERVICING, REPAIR, MAINTENANCE AND INSPECTION

Servicing, repair, maintenance or inspection has to be performed on equipment or machine on drawbridges.

Normally, the energy (power) source to any equipment or machine that has to be maintained or repaired has to be **locked-or tagged-out** to prevent unexpected start-up of the equipment or machine and avoid injury to servicing employee. However, in drawbridge operation, it may not be possible to totally lock-out the power source as drawbridge is expected to render uninterrupted operation or service.

8.5.4.1 To ensure the safety of the employee(s) performing maintenance work on drawbridges while drawbridge remain in operation, the following must be observed:

(A) Authorized Employee. When more than one (1) employee is involved in the maintenance work, only one employee will be designated and authorized to place or remove the lock-or tag-out device, and communicate with designated bridge tender.

(1) The employee authorized to service, repair or perform any maintenance on any drawbridge equipment or machine must:

(a) Be given instructions and understand the type and source of energy the machine or equipment utilizes;

(b) Identify the power source controlling the equipment or machine and place a lock-or tag device on the power source and operating control in the **“off”** position.

(The power source may be located or controlled in the bridge console.)

(c) Inform the designated bridge tender of the reason for locking or tagging the operating control;

(d) Give specific instructions to the designated bridge tender that the lock or tag must not be removed or the controls placed in the **“on”** or operating position without being expressly told to do so; and

(e) Ensure that radio and/or visual communication is maintained with the designated bridge tender at all times.

(B) When informed by the designated bridge tender of a request for a bridge opening and the need to operate drawbridge controls, the authorized employee must first ensure that it is safe, for himself (or any other employee performing the maintenance work) and for operation of the equipment or

machine being maintained, before allowing the designated bridge tender to remove the **“lock or tag” device** and turn the power on.

(C) **Bridge tender.** When there is more than one (1) bridge tender, only one will be designated to communicate with authorized maintenance employee. The designated bridge tender must:

- (1) Maintain radio and/or visual communication with authorized employee at all times;
- (2) Inform the maintenance employee when there is a request for a bridge opening;
- (3) Not remove the lock or tag device placed on the operating controls or place the control on the **“On”** or operating position without prior authorization from the employee performing maintenance work;
- (4) When drawbridge operation is completed, place the operating controls on the **“Off”** position and replace the lock-out or tag device on the operating controls; and
- (5) Contact the authorized maintenance employee so work on the equipment or machine can be resumed.

Section 6
BLOODBORNE PATHOGENS
OCCUPATIONAL EXPOSURE CONTROL PLAN

8.6.1 PURPOSE AND SCOPE

The purpose of this Plan is to establish a preventative safety program for employees of FDOT who could be or are exposed to Bloodborne Pathogens. This plan applies to FDOT **Motor Carrier Compliance Law Enforcement Officers** and FDOT **Divers** who are required as part of their job to render emergency care or have other duties that may expose them to Bloodborne Pathogens. This plan also applies to other FDOT employees who may have unanticipated exposure to Bloodborne Pathogens.

8.6.1.1 The Plan does not apply to contractors, consultants, contract employees and other non-FDOT employees.

8.6.2 AUTHORITY

Chapter 442.008, Florida Statutes; Rule 38I-20.003, F.A.C., which adopted federal regulation *29 CFR 1910.1030* on bloodborne pathogens.

8.6.3 DEFINITIONS

- (A) **Blood** - Human blood, human blood components, and products made of human blood.
- (B) **Bloodborne Pathogens** - Pathogenic micro-organisms that are present in human blood and other body fluids which can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B virus (HBV) and human immunodeficiency virus (HIV).
- (C) **Confidential Medical Record** - means a medical record required to be established for each employee with occupational exposure and also required to be kept confidential.
- (D) **Contaminated** - Presence or reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
- (E) **Contaminated Laundry** - Uniforms which have been soiled with blood or other potentially infectious materials on an item or surface.
- (F) **Decontamination** - The use of physical or chemical means to remove, inactivate, or destroy Bloodborne Pathogens on a surface or item to the point they are no longer capable of transmitting infectious particles, and the surface or item is rendered safe for handling, use or disposal.
- (G) **Engineering Controls** - Controls that isolate or remove Bloodborne Pathogens from the work place.
- (H) **Exposure Incident** - Means an occupational exposure (skin, eye mucous membrane) or parenteral contact with blood or other potentially infectious materials that may results from the performance of employee's duties while rendering First Aid/CPR and/or performing the resulting clean-up.
- (I) **HBV** - Hepatitis B Virus.
- (J) **HIV** - Human Immunodeficiency Virus.

- (K) **Hand-Washing Facilities** - A facility providing an adequate supply of running potable water, soap, and single use towels or hot air drying machines.
- (L) **Occupational Exposure** - Defined as reasonably anticipated skin, eye, mucous membrane or parenteral contact with blood or other potentially infectious materials (OPIM) that may result from the performance of an employee's duties. This determination is made without taking into account the use of personal protective equipment.
- (M) **Other Potentially Infectious Materials (OPIM)** - These materials include the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, and saliva in dental procedures.
- (N) **Potentially infectious materials** also include any body fluid visibly contaminated with blood, and all body fluids in situations where it is difficult to differentiate between body fluids. Other potentially infectious materials also include any unfixed tissue or organ (other than intact skin) from a human (living or dead); 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 Human Immunodeficiency Virus or Hepatitis B Virus.
- (O) **Parenteral** - The action of piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.
- (P) **Personal Protective Equipment (PPE)** - Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (i.e. uniforms, pants, shirts or blouses) not intended to function as protection against a hazard, are not considered to be personal protective equipment.
- (Q) **Regulated Waste** - Liquid or semi-liquid blood or other potentially infectious materials and contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed. Regulated waste also includes items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling, such as: contaminated sharps, pathological and microbiological wastes containing blood or other potentially infectious materials.
- (R) **Source Individual** - Any individual, living or dead, whose blood or other potentially infectious fluids may be a source of occupational exposure to the employee.
- (S) **Sterilize** - The use of physical or chemical procedures to destroy all microbial life.

(T) **Universal Precautions** - An infection control approach in which all human blood and certain human body fluids are treated as if known to be infectious for Human Immunodeficiency Virus, Hepatitis B Virus, and other Bloodborne Pathogens.

(U) **Virus** - Extremely small micro-organisms that can only grow in the cells of other organisms.

8.6.4 PROCEDURE

8.6.4.1 RESPONSIBILITIES

(A) **Unit Management** - Each Unit manager/Office Head is responsible for assuring the requirements of this Plan are implemented in their area of responsibility.

(B) **Unit Safety Personnel** - Unit safety personnel/ designated safety persons shall ensure that this plan is followed and for providing assistance to the Unit regarding its implementation.

(C) **Supervisors** - Supervisors are responsible for assuring that training is conducted for employees designated as first aid responders and that the Plan is implemented in areas within their jurisdictional control.

(D) **Employees** - Employees designated as first aid responders are responsible for complying with the requirements of this Plan. All employees are responsible for reporting all exposure incidents including unanticipated exposures immediately to their supervisor.

8.6.4.2 EXPOSURE DETERMINATION

Exposure to blood or other potentially infectious materials (OPIM) may occur whenever an employee performs First Aid or CPR on another employee or while performing duties which are required by the job. The FDOT has designated **Motor Carrier Compliance Law Enforcement Officers** and **FDOT Divers** as first aid responders. The FDOT has not designated other employees as first aid responders.

8.6.4.3 TRAINING

(A) Unit Managers/Office Heads shall ensure that all employees designated as first aid responders receive annual training on Bloodborne Pathogens. Training will be done in accordance with the FDOT course entitled "**Prevention of Bloodborne Diseases in the Workplace," No. ST-09-0028.** At a minimum, training shall address the following:

- (1) The Exposure Control Plan and its location in the Unit.
- (2) A general discussion of the epidemiology and symptoms of bloodborne diseases.
- (3) Modes of transmittal.
- (4) Recognition of tasks and other activities that may involve exposure to blood or other potential infectious material.
- (5) Explanation of the use and limitations of methods that prevent or reduce exposure, including: engineering controls, work practices and personal protective equipment.
- (6) Information on types, usage, location, removal, handling, decontamination and disposal of personal protective equipment.
- (7) Explanation of the selection of Personal Protective Equipment.
- (8) Information on the HB vaccination, including its efficacy, safety, method of administration and benefits of the vaccination, and the fact that it is provided free of charge.
- (9) Information on emergency procedures in case of an accident involving blood or other potential infectious materials.
- (10) Explanation of procedures to follow if an exposure incident occurs, including the method of reporting the incident and medical follow-up.
- (11) Information on the post-exposure evaluation and the required follow-up.
- (12) Explanation of signs, labels and color coding required by the regulations.
- (13) Disposal of bio-hazardous wastes.
- (14) Opportunity to ask questions of the trainer.

8.6.4.4 RECORDKEEPING

(A) Medical records will be kept by the District/Central Office Personnel file for all employees with occupational exposure which will include the following:

- (1) Name and Social Security number of the employee.
- (2) Employee Hepatitis-B vaccination status, including dates of vaccination, records relating to employee's ability to receive the vaccine, and signed declination form, where applicable.

- (3) Copy of results of examinations, medical testing and follow-up procedures.
 - (4) Health care professional's written opinion.
 - (5) All information provided to the evaluating Health care professional in the event of an exposure incident.
- (B) Medical records will be kept **confidential** and not be discussed or reported without the employee's express written consent. Records shall be maintained for at least the duration of employment plus **thirty (30) years** as required by the federal bloodborne pathogens standard.
- (C) Training records will also be kept under the TRESS and shall include:
- (1) Date of training.
 - (2) Outline of training described in Course Catalog.
 - (3) Name of instructor.
 - (4) Names of attendees.

8.6.5 METHODS OF CONTROL

8.6.5.1 The following methods of preventative controls shall be practiced to minimize the potential for exposure:

(A) **Universal Precautions** - An approach to infection control where all human blood or certain human body fluids are treated as if known to be infectious of HIV, HBV and other bloodborne pathogens.

Note: Whenever possible the injured employee will perform self aid and clean up, thereby not exposing other employees to blood or other potentially infectious materials.

(B) **Engineering Controls** - Engineering controls are devices which isolate or minimize Bloodborne Pathogen hazards from the work place. Engineering controls can be designed into the workplace operations, cleaning or maintenance programs to minimize potential exposure. Examples of engineering controls can be as simple as a broom and dustpan, hand washing facilities or antiseptic hand cleaners. Engineering controls need to be reviewed and updated at least **annually**.

(C) Work Practice Controls - Work practice controls are designed to help minimize or eliminate exposure to Bloodborne Pathogens. The following work practice controls, at a minimum, shall be observed:

- (1)** Employees wash their hands immediately, or as soon as feasible, after removal of contaminated gloves or other personal protective equipment.
- (2)** Following any contact of body areas with blood or any other infectious materials, employees wash their hands and any other exposed skin with soap and water as soon as possible and flush exposed mucous membranes with water.
- (3)** Equipment which becomes contaminated is examined prior to servicing or shipping, and decontaminated as necessary.
- (4)** An appropriate biohazard warning label, available from the warehouse, is attached to any contaminated equipment, identifying the contaminated portions. All affected employees, handlers and shippers will be informed of the remaining contamination.

(D) First Aid/CPR Safe Work Practices - The following safe work practices shall be observed by designated employees while rendering First Aid and CPR.

- (1)** Gloves shall be worn at all times when rendering First Aid/CPR.
- (2)** Gloves shall be worn when handling items or touching surfaces which may be potentially contaminated with blood or other potentially infectious materials (OPIM).
- (3)** Other Personal Protective Equipment should be worn if there is a possibility the employee will be exposed to blood or OPIM to include face shields and/or protective and disposable gowns/aprons.
- (4)** Hands and other skin surfaces shall be washed immediately and thoroughly with water and soap, or antiseptic cleanser, if contaminated with blood or OPIM.
- (5)** Hands shall be immediately washed after gloves are removed.
- (6)** Employees shall not handle sharp objects without proper Personal Protective Equipment and use of mechanical means such as tongs, or a dustpan and broom.

(7) Uniform clothing, supplied by FDOT, which becomes contaminated with blood or OPIM during responses shall be removed immediately (or as soon as possible) and separated from other soiled clothing until properly laundered. This contaminated clothing shall be placed in designated containers and labeled per the uniform contractor's requirements and placed in a safe area. The uniform contractor will be informed of the contaminated clothing and have it removed as soon as possible.

(8) Personal clothing which becomes contaminated (not supplied uniforms) shall be removed and changed immediately (or as soon as possible). Soiled clothing shall be placed in appropriate areas in labeled containers for cleaning or disposal. Dry cleaning is an acceptable means of decontamination.

(9) Areas and equipment which become contaminated with blood or OPIM shall be cleaned immediately with a bleach solution (**1:10 dilution of household bleach**).

(10) The employee who has an exposure incident shall received a medical evaluation immediately which may include HBV vaccination on the recommendation of a health care professional. Complete **Form 500-000-07, Employee Declination Statement**, if employee declines the vaccination. This form when completed shall be treated as **confidential medical record** and shall be filed accordingly.

(11) Where hand washing facilities are not feasible, appropriate antiseptic hand cleaner in conjunction with clean cloth/paper towels or antiseptic towelettes shall be provided. When these are used the employee shall wash with soap and running water as soon as feasible.

(E) Incidental Exposure During Clean-up - The following safe work practices apply to exposure incidents that may occur to persons who may be designated to perform clean-up. Every conceivable practice is not necessarily listed and evaluation of every action in light of possible exposure shall be considered before proceeding, including training of such designated persons.

(1) Gloves shall be worn before performing cleanup that could present exposure of blood or other potentially infectious materials (OPIM).

(2) Other personal protective equipment should be worn if there is a possibility the employee will be exposed to blood or other potentially infectious materials (OPIM) to include

face shields and/or eye protection and disposable

gowns/aprons.

(3) Accident sites where blood or OPIMs are present shall be disinfecting before cleanup begins.

(4) Personal protective equipment (i.e. gloves) shall be worn and proper equipment (i.e. dust pan) used in handling broken glassware or other sharp objects. Sharp objects shall be placed in designated containers and disposed of in an acceptable manner.

(5) Hands shall be washed after gloves are removed.

(6) Uniform clothing, supplied by FDOT, which becomes contaminated with blood or OPIM during clean up shall be removed immediately (or as soon as possible) and separated from other soiled clothing until properly laundered. This contaminated clothing shall be placed in designated containers and labeled per the uniform contractor's requirements and placed in a safe area. The uniform contractor will be informed of the contaminated clothing and have it removed as soon as possible.

(7) Personal clothing which becomes contaminated shall be removed and changed immediately (or as soon as possible). Contaminated clothing shall be placed in labeled container for cleaning or disposal. Dry cleaning as is an acceptable means of decontamination.

(8) If an employee has an exposure incident while performing cleanup, the employee shall receive a medical evaluation immediately which may include HBV vaccination on the recommendation of a health care professional. Complete

Form 500-000-07, Employee Declination Statement, (Attachment 8.6-A) if employee declines the vaccination. This form when completed shall be treated as **confidential medical record** and shall be filed accordingly.

(9) Where hand washing facilities are not feasible, appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes shall be provided. When these are used the employee shall wash with soap and running water as soon as feasible.

8.6.6 PERSONAL PROTECTIVE EQUIPMENT

8.6.6.1 The purpose of personal protective equipment (PPE) is to eliminate or minimize the likelihood that blood or other potentially infectious materials (OPIM) will contact the employee's skin, eyes, mucous membranes or underlying clothing. Necessary equipment shall be supplied and kept accessible for employee use at no cost. Employees shall be trained in its use. Equipment shall be correctly donned, worn and removed to prevent exposures. To ensure that personal protective equipment is not contaminated and is in a condition to protect employees from potential exposure, FDOT adheres to the following practices:

- (A) All personal protective equipment is inspected by the Supervisor and repaired or replaced as needed to maintain its effectiveness.
- (B) Reusable personal protective equipment is cleaned, laundered and decontaminated by trained personnel, as needed.
- (C) Single-use personal protective equipment or equipment that cannot be decontaminated is disposed of according to appropriate procedures.
- (D) To make sure that personal protective equipment is used as effectively as possible, employees shall adhere to the following practices when using their personal protective equipment:
 - (1) Any garments penetrated by blood or other infectious materials are removed prior to leaving.
 - (2) All potentially contaminated personal protective equipment is removed as soon as possible and prior to leaving a work area.
- (E) Gloves are worn in the following circumstances:
 - (1) Whenever employees anticipate hand contact with potentially infectious materials.
 - (2) When handling or touching contaminated items or surfaces.
- (F) Disposable gloves are replaced as soon as practical after contamination or if they are torn, punctured or otherwise lose their ability to function as an "**exposure barrier**".
- (G) Discard utility gloves when they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- (H) Masks and eye protection (such as goggles, face shields, etc.) are used whenever splashes or sprays may generate droplets of infectious materials.

- (I) Place used protective equipment in designated containers for decontamination or for disposal.

8.6.7 HOUSEKEEPING

8.6.7.1 Equipment and work areas shall be kept clean and sanitary. Bins, pails and other containers shall be inspected regularly and kept clean and sanitary. Broken glass or other contaminated material which can cause a puncture or cut to the skin shall be picked up with mechanical means (e.g. dustpan, tongs, etc.). Contaminated uniforms shall be contained in leak-proof bags and labeled. Arrangements must be made with the uniform contractor for pick up.

8.6.7.2 The Unit Manager/Office Head shall ensure that all regulated wastes are handled according to Federal, State and Local County/City codes. The following are minimum requirements for handling and disposing of regulated waste:

- (A) Regulated waste is discarded or "bagged" in containers that are:
- (1) Closable.
 - (2) Puncture-resistant, if the discarded materials have the potential to penetrate the container.
 - (3) Leak-proof, if the potential for fluid spill or leakage exists.
 - (4) Red in color or labeled with the appropriate biohazard warning label.
- (B) Containers for this regulated waste are placed in appropriate locations in the facility within easy access of employees.
- (C) Waste containers are maintained upright, routinely replaced and not allowed to overfill.
- (D) Contaminated laundry is handled as little as possible and is not sorted or rinsed where it is used.
- (E) Whenever employees move containers of regulated waste from one area to another, the containers are immediately closed and placed inside an secondary container, if leakage is possible from the first container.
- (F) All materials to be disposed of will be properly labeled, packaged, temporarily stored, away from employees, and then promptly picked up by an approved vendor.

8.6.8 DECONTAMINATION

Equipment decontamination will be accomplished by using a **1:10** solution of bleach and water. The area will be wiped down with disposable towels, then the bleach/water solution will be applied to the area.

8.6.9 HEPATITIS-B VACCINATION

8.6.9.1 To protect from the possibility of Hepatitis B infection, vaccination is available, at no cost, to all FDOT Motor Carrier Compliance Law Enforcement Officers and FDOT Divers who have occupational exposure to blood or other potentially infectious materials unless:

- (A) The employee has previously received the series;
- (B) Antibody testing reveals that the employee is immune;
- (C) Medical reasons prevent the taking of the vaccination; or
- (D) The employee chooses not to participate.

8.6.9.2 All employees designated as first aid responders are strongly encouraged to receive the Hepatitis B vaccination series. However, if an employee chooses to decline HB vaccination, *Form 500-000-07, Employee Declination Statement*, (Attachment 8.6-A) must be filled out. This form when completed shall be treated as **confidential medical record** and shall be filed accordingly. An employee who

decline may request and obtain the vaccination at a later date and at no cost if he/she changes his/her mind.

8.6.9.3 The vaccination consists of a series of three (3) over a six (6) month period, performed under the supervision of a licensed physician or other Healthcare professional.

8.6.9.4 Hepatitis B Vaccine. Employees who have been offered Hepatitis-B vaccine shall be listed using *Form 500-000- 05, List of Employees Offered the Hepatitis-B Vaccine (Attachment 6.8-B)*. This form when completed shall be treated as confidential medical record and shall be filed accordingly.

8.6.10 POST-EXPOSURE EVALUATION AND FOLLOW-UP

8.6.10.1 Should an exposure incident occur, the employee shall inform his/her Supervisor immediately. Each exposure incident must be investigated and documented on *Form 500-000-04, Exposure Incident Report, (Attachment 8.6-D)* by the Supervisor. The Unit's Safety and Health Specialist/designated safety person, if one is so assigned, will assist in the investigation, as needed. This form when completed shall be treated as **confidential medical record** and shall be filed accordingly.

8.6.10.2 A confidential medical evaluation and follow-up shall be conducted immediately and the following elements performed:

- (A) Document the routes of exposure and how the exposure occurred.
- (B) Identify the source individual (unless infeasible or prohibited under Florida Statute 381.004.)
- (C) Obtain consent and test source individuals as soon as possible to determine HIV and HBV infectivity and document the source's blood test result.
- (D) Collection and testing of employee's blood for HBV and HIV serological status (employee's consent required).

8.6.10.3 The health care professionals responsible for employee's Hepatitis B vaccination and post-exposure evaluation and follow-up must be provided the following information:

- (A) A copy of the Bloodborne Pathogen (BBP) Standard.
- (B) A description of the affected employee's duties as they relate to the employee's exposure incident.
- (C) Route(s) of exposure and circumstances of exposure.
- (D) A copy of the exposed individual's medical records, including *Form 500-000-06, Employee Hepatitis-B Vaccination Status (Attachment 8.6-C)*.
- (E) Results of the source individual's blood test if possible.

8.6.11 HEALTH CARE PROFESSIONAL'S WRITTEN OPINION

8.6.11.1 After the evaluation, the health care professional will provide the Department with a written opinion within fifteen (15) days after the completion of the evaluation. A copy of this opinion, will in turn, be furnished the exposed employee. In keeping with the emphasis on confidentiality, the written opinion will contain only the following information:

- (A) For Hepatitis B vaccinations, whether vaccination is recommended for the exposed employee and if the employee has received the Hepatitis B vaccination.
- (B) For post-exposure evaluation and follow-up, whether or not the employee has been informed of the results of the medical evaluation and any medical conditions which may require further evaluation and treatment.
- (C) All other diagnoses will remain confidential and will not be included in the written report to the Department.

8.6.12 LABELS

8.6.12.1 The following items (if applicable) must be labeled properly:

- (A) Containers for regulated waste.
- (B) Laundry bags and containers.
- (C) Contaminated equipment.

8.6.12.2 Labels affixed to contaminated equipment should indicate which portions of the equipment are contaminated.

8.6.13 ATTACHMENTS

- Attachment **8.6-A** Form 500-000-07, Employee Declination Statement
- Attachment **8.6-B** Form 500-000-05, List of Employees Offered the Hepatitis-B Vaccine.
- Attachment **8.6-C** Form 500-000-06, Employee Hepatitis-B Vaccination Status

Note: These forms, when completed, shall be treated as confidential medical records and shall be filed accordingly. They are available from the Department's Forms Library through Office Vision.

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