

MIOSHA ***Construction Standards***

Safety & Health Training Requirements

Michigan Department of Licensing and Regulatory Affairs
Michigan Occupational Safety & Health Administration
Consultation Education & Training Division
www.michigan.gov/miosha
(517) 322-1809



NOTE:

The purpose of this document is to provide an overview of training requirements contained in MIOSHA Construction Safety and Health Standards and employee and employer responsibilities.

This training requirement guidebook identifies "specific employee training requirements" that are the sole responsibility of employers or employee representatives. This guide may not include other standards' requirements for pre-employment or task training, such as training for electricians, engineers, tradesmen, etc., in order to be called "qualified persons." It also may not include requirements for employers and employees to follow manufacturers' instructions for the installation and operation of machinery.

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DEFINITIONS

In this training guide, the following definitions shall apply:

Accident Prevention Program

The program by which an employer provides instruction and safety training to an employee in the recognition and avoidance of hazards.

Competent Person

A person who is experienced and capable of identifying an existing or potential hazard in surroundings or under working conditions which are hazardous or dangerous to an employee and who has the authority and knowledge to take prompt corrective measures to eliminate the hazards.

Designated Employee

A qualified person delegated to perform specific duties under the conditions existing.

Qualified Person

A trained person possessing a recognized degree or certificate of professional standing or who, by extensive knowledge, training, and experience, has demonstrated the ability to solve or resolve problems relating to the subject matter and work.

Safety And Health Management System

A systematic approach to managing safety and health activities by integrating occupational safety and health programs, policies, and objectives into organizational policies and procedures. The components of a system include: 1.) Management Commitment and Planning, 2.) Employee Involvement, 3.) Safety & Health Training, 4.) Worksite Analysis, and 5.) Hazard Prevention and Control.

**MIOSHA
CONSTRUCTION**

**SAFETY
TRAINING
REQUIREMENTS**

CONSTRUCTION SAFETY TRAINING REQUIREMENTS

PART 1. GENERAL RULES (as amended July 30, 2002)

Employer Responsibilities

- R. 114 (1) An employer shall develop, maintain, and coordinate with employees an accident prevention program.
- R. 114 (2) An accident prevention program shall, as a minimum, provide for all of the following:
- (a) Designation of a qualified employee or person with responsibility to administer the program.
 - (b) Instruction to each employee regarding the operating procedures, hazards, and safeguards of tool and equipment when necessary to perform the job.
 - (d) Instruction to each employee in the recognition and avoidance of hazards.
 - (e) Instruction to each employee required to handle or use known poisons, toxic materials, caustics, and other harmful substances regarding the potential hazards, safe handling, use, personal hygiene, protective measures required, and applicable first aid procedures to be used in the event of injury.
 - (f) Instruction to each employee where known harmful plants, reptiles, animals, or insects are present regarding the potential hazards, how to avoid injury, and applicable first aid procedures to be used in the event of injury.
 - (g) Instruction to each employee required to enter a confined space regarding the hazards involved, the necessary precautions to be taken, the use of required personal protective equipment, emergency equipment, and the procedure to be followed if an emergency occurs.
 - (h) Instruction in the steps or procedures to be followed in case of an injury or accident or other emergency.

Confined or Enclosed Spaces

- R. 121** **(1)** An employee required to enter into confined or enclosed spaces shall be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment.

Medical Services and First Aid

- R. 132** **(3)** A person who has a valid certificate in first aid training shall be present at the worksite to render first aid. A certificate is valid if the requirements necessary to obtain the certificate for first aid training meet or exceed the requirements of the United States bureau of mines, the American Red Cross, the guidelines for basic first aid training programs or equivalent training.

PART 2. MASONRY WALL BRACING (as amended May 14, 2010)

Training requirements

- R. 205** **(1)** This rule supplements and clarifies construction safety standard part 1 general rules, R 408.40114(2), as it relates to the hazards of masonry walls under construction exposed to wind.
- (2)** An employer shall provide training by a qualified person to each competent person or employee who is involved in installing, altering, repairing, maintaining, or inspecting the wall bracing system and restricted zone. The training shall enable an employee to recognize hazards associated with the work and shall include all of the following topics, as applicable:
- (a)** The nature of hazards involving masonry walls under construction.
 - (b)** Instruction in the general use and maintenance of wall bracing systems, signage, and restricted zone requirements as prescribed in these rules.
 - (c)** Identifying unsupported masonry walls requiring bracing.
 - (d)** The procedures for installing, altering, repairing, inspecting, and maintaining the wall bracing system being used.
 - (e)** Proper installation and maintenance of a restricted zone and signage.
 - (f)** Procedures for monitoring wind speeds.
 - (g)** Procedures for vacating the restricted zone during windy conditions.
 - (h)** Inspecting the worksite for overhead and underground utilities and other hazards.

- (i) Inspecting the worksite for excavations in the restricted zones.
- (j) Any other pertinent requirements.
- (3) An employer shall provide training by a qualified person to any employee who enters a restricted zone of a masonry wall under construction. The training shall enable an employee to recognize and understand all of the following:
 - (a) The nature of hazards involving masonry walls under construction.
 - (b) Instruction in the general use and maintenance of wall bracing systems, signage, and restricted zone requirements as prescribed in these rules.
 - (c) Procedures for monitoring wind speeds.
 - (d) Procedures for vacating the restricted zone during windy conditions.
 - (e) The nature of hazards involving electrical lines within the restricted zone.
 - (f) The nature of hazards involving excavating within the restricted zone.
 - (g) Any other pertinent requirements.
- (4) Additional training is required in each of the following situations:
 - (a) When changes at the worksite present a hazard about which an employee has not been previously trained.
 - (b) When changes in the types of wall bracing systems present a hazard for which an employee has not been previously trained.
- (5) The employer shall verify compliance with this rule by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date or dates of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this rule, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training. The latest training certification shall be maintained and available during the work shift.

R. 206 Restricted Zone Requirements

- Rule 206.**
- (1) For walls greater than 8 feet in height, a restricted zone shall be established prior to the start of the construction of the wall. The restricted zone shall meet all of the following requirements (see figure 1):
 - (a) Be equal to the height of the constructed wall plus a minimum of 4 feet and run the entire length of the wall plus a

- minimum of 4 feet beyond the ends of the wall.
- (b)** Be established on both sides and ends of the wall.
- (c)** Be limited to entry by employees trained in accordance with R 408.40205.
- (d)** Remain in place until the wall has obtained its final lateral support.
- (e)** Be delineated by signing in accordance with R 408.40207.

PART 6. PERSONAL PROTECTIVE EQUIPMENT (as amended July 12, 1999)

Rubber Protective Equipment

- R. 641** **(4)** A trained employee or outside service shall visually inspect rubber insulating sleeves and blankets and perform an electrical test within 12 months after purchase and not less than once every 12 months after the initial inspection and electrical test. An employer shall ensure that the equipment is dated or coded with the date of purchase or issuance and the date of each periodic test. The trained employee or outside service shall perform the electrical test in accordance with the applicable American society for testing and materials standards listed in table 4.

PART 7. WELDING AND CUTTING (as amended January 12, 2005)

Employer and Employee Responsibilities

- R. 711** **(1)** An employer shall do all of the following:
- R. 711** **(1)(a)** Assure that each employee has received safety training in the use of equipment for welding operations and instruction in the rules of this part before allowing the employee to use the equipment.
- R. 711** **(1)(d)** Assure that an employee in charge of the operation of oxygen or fuel gas supply equipment or of oxygen or fuel gas systems is instructed and judged competent for this work by the employer before being left in charge. Rules and instructions covering the operation and maintenance of oxygen or fuel gas distribution piping systems shall be readily available.
- R. 711** **(2)(a)** An employee shall use welding and cutting equipment as trained and authorized.

Working in Confined Spaces

- R. 713** **(5)** If an employee must enter a confined space through a small opening to perform welding operations, another employee trained in rescue procedures and equipped with the means necessary to effect a rescue shall be stationed outside the confined space in position to watch the welder. When a safety harness and lifeline are used, they shall be provided for as prescribed in Part 45, Fall Protection, being R. 408.44501 et. seq. of the Michigan Administrative Code, and shall be attached to the welders body so that his or her body cannot be jammed in a small exit opening.

Cylinders Generally

- R. 723** **(6)** Gases shall not be mixed within a cylinder except by the supplier. Only the owner of the cylinder, if the owner is qualified, or a person trained, qualified, and authorized by the owner, shall refill a cylinder. The contents of a cylinder shall be used only for those purposes intended by the supplier.

Regulators and Protective Devices

- R. 732** **(1)(b)** Regulators shall be repaired by authorized and trained personnel or shall be returned to the supplier for calibration or repairs.

PART 8. HANDLING AND STORAGE OF MATERIALS (as amended Nov. 8, 2004)

Disposal of Waste Materials

- R. 831** **(7)** A gate capable of withstanding the load imposed on it shall be installed at or near the discharge end of a material chute. A trained employee shall be in charge of opening the gate and loading of trucks.

PART 9. EXCAVATION, TRENCHING AND SHORING (as amended Sept. 3, 1996)

Excavation: Slide Hazards

- R. 932** **(4)** If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operation shall be monitored by a qualified person or a monitoring system to ensure that the equipment is properly operated.
- R. 932** **(5)** An ongoing inspection of an excavation or trench shall be made by a qualified person. After every rainstorm or other hazard-producing occurrence, an inspection shall be made by a qualified employee for evidence of possible slides or cave-ins. Where these conditions are found, all work shall cease until additional precautions, such as additional shoring or reducing the slope, have been accomplished.

Support System

- R. 942** **(2)** A support system shall be designed by a qualified employee. The design of the supporting system shall be maintained at the jobsite. Changes from the design of the support system shall be approved by a qualified employee.

Caisson Excavation

- R. 946** **[refer to Part 14, R. 1482(1)]**

An employee who enters a caisson shall be protected by a steel or concrete casing designed by a qualified employee and approved by a registered engineer.

PART 10. LIFTING AND DIGGING EQUIPMENT (as amended Dec. 27, 2000)

Adoption of Federal Standards

Helicopters

- R. 1001a** **(5)(m)** Ground personnel shall be instructed and the employer shall ensure, that when visibility is reduced by dust or other conditions, they shall exercise special caution to keep clear of the main and stabilizing rotors. Precautions shall also be taken by the employer to eliminate, as far as practical, the dust or other conditions

reducing the visibility.

- R. 1001a (5)(n)** An employer shall instruct the aircrew and ground personnel on the signal systems to be used and shall review the systems with the employees in advance of hoisting the load. This subdivision applies to both radio and hand signal systems. Hand signals, where used, shall be shown in figure 1.
- R. 1001a (5)(p)** The employer shall instruct employees, and shall ensure, that when approaching or leaving a helicopter that has its blades rotating, all employees shall remain in full view of the pilot and keep in a crouched position. An employee shall not be permitted to work in the area from the cockpit or cabin rearward while blades are rotating, unless authorized by the helicopter operator to work there.

Cranes and Derricks and Excavation Equipment

Employer Responsibilities

- R. 1006a (1)** An employer shall comply with the manufacturer's specifications and limitations applicable to the operation of cranes, derricks and excavation equipment. If a manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determination of a qualified person who is competent in the field of equipment limitations and the determination shall be appropriately documented and recorded. Attachments that are used with cranes or derricks shall not exceed the capacity, rating, or scope recommended by the manufacturer.

- (3) An employer shall limit the use of a crane or derrick or excavation equipment to the following entities:
 - (a) An employee who has been trained and qualified to operate the type of crane or derrick or excavation equipment to which he or she is assigned.
 - (b) A learner who is under the direct supervision of a designated operator.
 - (c) Authorized maintenance personnel while performing their duties.

Operator Training

- R. 1008a** An employer shall assure that a prospective operator, before assignment as an operator of a crane, derrick or excavation equipment, has been trained in all the following areas:
- (a) The capabilities of equipment and attachments
 - (b) The purpose, use and limitations of controls
 - (c) How to make daily inspections
 - (d) Practice in operating assigned equipment to perform the functions necessary for required jobs
 - (e) Applicable state standards and company rules and regulations

Employer responsibility for employee crane, derrick or excavation equipment knowledge and ability

- R. 1009a** An employer shall ensure that an employee has adequate knowledge of, and is capable of operating, cranes, derricks or excavation equipment before assigning an employee to a crane, derrick or excavation equipment.

Work Platforms Generally

- R. 1015a** (2) A work platform shall be in compliance with all of the following requirements:
- (a) Be designed and constructed by qualified personnel who are designated by, and responsible to, the employer and who, because of extensive knowledge, training and experience, have successfully demonstrated their ability to solve or resolve problems relating to the subject matter, the work or the project.

Work Platforms; Crane Operator

- R. 1018a (6)** An operator of a crane that is used to raise or lower a work platform shall be authorized by the employer and be properly qualified to perform the operation.
- R. 1018a (7)** An operator of a crane shall not be authorized to raise or lower a work platform unless the operator has had not less than 8 hours of experience in the operation of the specific crane or a crane of the same type and design.
- R. 1021a (5)** An operator of a crane or derrick that is used to transport employees shall be designated by the employer and be properly qualified to perform the operation. Only a designated operator shall be permitted to operate a crane or derrick that is used to transport employees.

Swing Radius Clearance

- R. 1024a (3)** If clearances between the rotating or moving structure of a constantly moving crane or derrick can create a pinch point for an employee or if an employee could be struck by the rotating or moving structure, an employee, in place of the barricades, shall train and instruct each employee to stay out of the danger area and a danger sign, as prescribed in construction safety standard Part 22, Signals, Signs, Tags and Barricades, being R. 408.42201 et seq. of the Michigan Administrative Code, shall be affixed to the rear and sides of the house and counterweight. The additional lettering on the danger sign shall indicate that the counterweight is swinging.
- R. 1024a (5)** If clearances between the rotating or moving structure of constantly moving excavation equipment can create a pinch point for an employee, or if an employee could be struck by the rotating superstructure, an employer, in place of barricades, shall train and instruct each employee to stay out of the danger area and a danger sign, as prescribed in construction safety standard Part 22. Signals, Signs, Tags, and Barricades, being R 408.42201 et seq. of the Michigan Administrative Code, shall be affixed to the rear and sides of the house and counterweight. The additional lettering on the danger sign shall indicate that the counterweight is swinging.

Crane, Derrick, and Excavating Equipment; Operating Rules Generally

- R. 1025a (30)** A portable dry powder or halon-type fire extinguisher that has a

rating of not less than 10 BC, or equivalent, shall be kept in the cab or operating enclosure or where there is no cab or enclosure, shall be kept on the jobsite within a 200-foot radius of the equipment and shall be readily available. The operator and maintenance employees shall be trained in the use of the fire extinguisher.

Material and Personnel Hoists Generally

- R. 1065a** **(2)** An employer shall comply with the manufacturer's specifications and limitations applicable to the operation of all material and personnel hoists. If the manufacturer's specifications are not available, then the limitations assigned to the equipment shall be determined by a qualified person who is competent in the field and shall be based on the requirements of ANSI A10.4 "Safety Requirements for Personnel Hoists and Employee Elevators for Construction and Demolition Operations," 1990 edition and ANSI A10.5 "Safety Requirements for Material Hoists," 1992 edition. A determination shall be documented and recorded. Attachments used shall not exceed the capacity, rating, or scope recommended by the manufacturer.

Employer Responsibility

- R. 1066a** **(1)** An employer shall limit the operation of material and personnel hoists to the following entities:
- (a)** An employee who has been trained and qualified to operate the hoisting equipment to which the employee is assigned.
 - (b)** Authorized maintenance personnel when performing their duties.

Operator Training

- R. 1068a** Before assignment, and employer shall assure that an operator of a material and personnel hoist has been trained in all of the following areas:
- (a)** The capabilities of the equipment
 - (b)** The purpose, use and limitations of the controls
 - (c)** How to conduct daily inspections
 - (d)** Operational practices of the assigned equipment through its functions necessary to perform the required job.
 - (e)** Applicable state standards and company rules and regulations

PART 11. FIXED AND PORTABLE LADDERS (as amended Sept. 3, 1996)

Training Requirements

- R. 1112** (1) The employer shall provide a training program for each employee who uses a ladder. The program shall enable each employee to recognize hazards related to the ladder and shall train each employee in the procedures to be followed to minimize these hazards.
- R. 1112** (2) An employer shall ensure that each employee has been trained by a competent person in all of the following areas, as applicable:
- (a)** The nature of fall hazards in the work area.
 - (b)** The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used.
 - (c)** The proper construction, use, and placement of, and care in handling, ladders.
 - (d)** The maximum intended load-carrying capacities of ladders that are used.
 - (e)** The rules contained in this part.
- R. 1112** (3) Retraining shall be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through compliance with these rules.

PART 12. SCAFFOLDS AND SCAFFOLD PLATFORMS (as amended April 28, 1999)

Training Requirements

- R. 1209** (1) This rule supplements and clarifies the requirements of R. 408.40114(2) of construction safety standard Part 1. General Rules as the rule relates to the hazards of work on scaffolds. An employer shall have each employee who performs work on a scaffold trained by a person qualified in scaffold safety. The training shall enable an employee to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize the hazards. The training shall include the following areas as applicable:
- (a)** The nature of any electrical hazards, fall hazards, and falling object hazards in the work area.
 - (b)** The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used.

- (c) The proper use of the scaffold, and the proper handling of materials on the scaffold.
- (d) The maximum intended load and the load-carrying capacities of the scaffolds used.
- (e) Any other pertinent requirements.

R. 1209 (2) An employer shall have each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:

- (a) The nature of scaffold hazards.
- (b) The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold being used.
- (c) The design criteria, maximum intended load carrying capacity, and intended use of the scaffold.
- (d) Any other pertinent requirements.

R. 1209 (3) If an employer has reason to believe that an employee lacks the skill or understanding needed to safely perform work that involves the erection, use, or dismantling of scaffolds, then the employer shall retrain the employee so that the requisite proficiency is regained. Retraining is required in all of the following situations:

- (a) Where changes at the worksite present a hazard about which an employee has not been previously trained.
- (b) Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.
- (c) Where inadequacies in an affected employee=s work involving scaffolds indicate that the employee has not retained the requisite proficiency for the work involved.

Trained Operator at Controls of All Terrain Fork Lift

R. 1243 (11) A trained operator shall remain at the operator station of a lift truck to control the lift truck while an employee is elevated. The lift truck control or controls shall be in neutral and the parking brake set. The operator of the lift truck scaffold platform shall be able to see the elevated platform at all times.

Trained Operator Shall Inspect

R. 1244 (1) Before an employee is elevated on a rough terrain forklift truck

platform, a trained operator or other qualified personnel shall inspect all of the following items:

- (a) Tires and their inflation pressure.
- (b) Warning devices.
- (c) Lights.
- (d) Lift and tilt mechanisms, load engaging means, chains, cables, and limit switches.
- (e) Brakes.
- (f) Steering mechanism.
- (g) Fuel systems.

Operator Training

R. 1245 (1) An employer shall ensure that an employee has been trained before the employee's assignment as an operator of a rough terrain forklift truck that is used to elevate employees. An employee shall be trained in all of the following areas:

- (a) The capabilities of the equipment and its attachments.
- (b) The purpose, use, and limitations of the controls.
- (c) How to make daily checks.

Operator Permit

R. 1246 (1) An employer shall ensure that an operator has a valid permit to operate a rough terrain forklift or a forklift truck for elevating an employee. The operator shall carry the permit or shall have the permit available if it is requested by a department representative, during working hours.

PART 13. Mobile Equipment (as amended July 2, 1999)

Adoption of Federal Standard

(d) Powered industrial truck operator training

R.1926.602(d) (1) Operator Training. Safe Operation

- (i) The employer shall ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of the training and evaluation specified in this paragraph.
- (ii) Prior to permitting an employee to operate a powered industrial truck (except for training purposes), the employer shall ensure that each operator has successfully completed

the training required by this paragraph (l), except as permitted by paragraph (l)(5).

R.1926.602(d) (2) Training program implementation

- (i) Trainees may operate a powered industrial truck only:
 - (A) Under the direct supervision of persons who have the knowledge, training, and experience to train operators and evaluate their competence; and
 - (B) Where such operation does not endanger the trainee or other employees.
- (ii) Training shall consist of a combination of formal instruction (e.g., lecture, discussion, interactive computer learning, video tape, written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.
- (iii) All operator training and evaluation shall be conducted by persons who have the knowledge, training, and experience to train powered industrial truck operators and evaluate their competence.

R.1926.602(d) (3) Training program content. Powered industrial truck operators shall receive initial training in the following topics, except in topics which the employer can demonstrate are not applicable to safe operation of the truck in the employer's workplace.

- (i) Truck-related topics:
 - (A) Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate;
 - (B) Differences between the truck and the automobile;
 - (C) Truck controls and instrumentation: where they are located, what they do, and how they work;
 - (D) Engine or motor operation;
 - (E) Steering and maneuvering;
 - (F) Visibility (including restrictions due to loading);
 - (G) Fork and attachment adaptation, operation, and use limitations;
 - (H) Vehicle capacity;
 - (I) Vehicle stability;
 - (J) Any vehicle inspection and maintenance that the operator will be required to perform;
 - (K) Refueling and/or charging and recharging of batteries;

- (L) Operating limitations;
- (M) Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

(ii) Workplace-related topics:

- (A) Surface conditions where the vehicle will be operated;
- (B) Composition of loads to be carried and load stability;
- (C) Load manipulation, stacking, and unstacking;
- (D) Pedestrian traffic in areas where the vehicle will be operated;
- (E) Narrow aisles and other restricted places where the vehicle will be operated;
- (F) Hazardous (classified) locations where the vehicle will be operated;
- (G) Ramps and other sloped surfaces that could affect the vehicle's stability;
- (H) Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust;
- (I) Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

R.1926.602(d) (4) Refresher training and evaluation.

- (i) Refresher training, including an evaluation of the effectiveness of that training, shall be conducted as required by paragraph (l)(4)(ii) to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely.
- (ii) Refresher training in relevant topics shall be provided to the operator when:
 - (A) The operator has been observed to operate the vehicle in an unsafe manner;
 - (B) The operator has been involved in an accident or near-miss incident;
 - (C) The operator has received an evaluation that reveals that the operator is not operating the truck safely;
 - (D) The operator is assigned to drive a different type of truck; or
 - (E) A condition in the workplace changes in a manner that could affect safe operation of the truck.
- (iii) An evaluation of each powered industrial truck operator's performance shall be conducted at least once every three years.

- R.1926.602(d) (5)** Avoidance of duplicative training. If an operator has previously received training in a topic specified in paragraph (l)(3) of this section, and such training is appropriate to the truck and working conditions encountered, additional training in that topic is not required if the operator has been evaluated and found competent to operate the truck safely.
- R.1926.602(d) (6)** Certification. The employer shall certify that each operator has been trained and evaluated as required by this paragraph (l). The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.
- R.1926.604(a) (1)** Employees engaged in site clearing shall be protected from hazards of irritant and toxic plants and suitably instructed in the first aid treatment available.

PART 14. TUNNELS, SHAFTS, CAISSONS, AND COFFERDAMS (as amended February 19, 2003)

Safety Generally

- R. 1462 (12)** Each employer shall establish and coordinate with the employees an accident prevention program and a safety training program as prescribed in the construction safety standards commission standard, Part 1. General Rules, being R et seq. of the Michigan Administrative Code.
- R. 1462 (13)** All employees shall be instructed in the recognition and avoidance of hazards that are associated with all of the following underground construction activities:
- (a)** Air Monitoring.
 - (b)** Ventilation.
 - (c)** Illumination.
 - (d)** Communications.
 - (e)** Flood control.
 - (f)** Mechanical equipment.
 - (g)** Personal protective equipment.
 - (h)** Explosives.
 - (i)** Fire prevention and protection.
 - (j)** Emergency procedures, including evacuation plans and check-in and check-out systems.

Employees Copy of Safety Rules

- R. 1462 (14)** Each employee shall be issued a copy of the project's general safety rules before an employee commences work at the project.
- R. 1462 (15)** Each employer shall designate a qualified employee who is responsible for administering the safety program. A written record shall be maintained of the safety training programs.

Evacuation Plan

- R. 1463 (1)** A plan to evacuate a tunnel in an emergency and the procedures to carry out the plan shall be developed and made known to the employees and to the rescue team.

Emergency Equipment: Rescue Crews

- R. 1463 (2)** An employer shall ensure that rescue teams are familiar with conditions at the jobsite

- R. 1463 (5) On jobsites where flammable or noxious gases are encountered or anticipated in hazardous quantities, rescue team members shall practice donning and using self-contained breathing apparatus monthly.
- R. 1463 (9) Self-contained breathing apparatus shall be maintained in good operating condition. Employees shall be trained in its use.
- R. 1463 (10) The rescue crew shall be trained in rescue procedures, the use and limitations of a breathing apparatus, and the use of fire fighting equipment. The crews shall be retrained at least once each year.

Tunnels and Shafts

- R. 1478 (18) A properly qualified crane operator shall not be authorized to raise or lower a platform unless the operator has had not less than eight hours of experience in the operation of a crane.

PART 16. POWER TRANSMISSION AND DISTRIBUTION (as amended August 22, 2005)

Rubber Protective Equipment

- R. 1632 (4) Rubber insulating sleeves and blankets shall be given a visual inspection and an electrical test by a trained employee or outside service within 12 months after purchase and not less than once each 12-month period thereafter.
- R. 1632 (5) Rubber insulating gloves shall be given an electrical test by a trained employee or outside service at intervals and as prescribed in ANSI/ASTM F496-78, standard specifications for the in-service care of insulating gloves and sleeves, which is incorporated herein by reference and may be inspected at the Lansing office of the Department of Labor and Economic Growth. This standard may be purchased from the American National Standards Institute, 1430 Broadway, New York, New York, 10018.
- R. 1649 (1) All live-line, bare-hand work shall be performed in accordance with the following requirements:
 - (a) Employees shall be instructed and trained in the live-line, bare-hand technique and the safety requirements pertinent thereto before being permitted to use the technique on energized circuits.
 - (d) All work shall be personally supervised by a person trained

and qualified to perform live-line, bare-hand work.

PART 17. ELECTRICAL INSTALLATIONS (as amended November 23, 1982)

Employer Responsibility

- R. 1723 (1)** An employer shall assure that an employee does not engage in the installation activities to which this part applies unless the employee is a licensed electrician, or the employee is working with, or under the supervision of, as licensed electrician. A qualified employee is not required to be licensed when working on utility installation or maintenance such as, but not limited to, substations, switch yards, and street or highway lighting.
- R. 1723 (3)(a)** Limit access to energized electrical equipment such as, but not limited to, switch, gear, transformers and service panels, to qualified employees.

Electrical Installations

- R. 1724 (2)** Before work begins, a competent person shall ascertain by inquiry, observation, or instruments whether any part of an electric power circuit, exposed or concealed, is so located that, in the performance of the work, contact by an employee, tool, or equipment can be made with the circuit.
- R. 1724 (4)** Where an electrical power circuit exists that can be contacted by an employee, the employer shall do both of the following:
- (a)** Post and maintain accident prevention signs prescribed in Part 22, Signals, Signs, Tags, and Barricades, being R 408.42201 et seq. of the Michigan Administrative Code.
 - (b)** Advise the employee of the location of the lines, hazard involved, and protective measures taken or to be taken.

Inspection and Repair of Electrical Equipment

- R. 1734 (2)** Repairs of electrical equipment shall be made by a licensed electrician or an employee supervised by a licensed electrician except as provided in rule 1723(1).

PART 18. FIRE PROTECTION AND PREVENTION (as amended September 10, 2002)

Fire Protection

- R. 1837** (3) "Fire protection" means to provide fire fighting equipment training and evacuation plans.

Employer Responsibility

- R. 1841** (1) An employer shall be responsible for the development and maintenance of a fire protection and prevention program to be followed during all phases of construction to reduce the chance of fire and injury to employees.

- R.1841** (2) The fire protection portion of the program shall include all of the following:

- (b) Posting fire rules or, by other means, informing the employees of the evacuation signal, escape routes, and emergency phone numbers. Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach the exit is not immediately visible to the occupants.

- R. 1841** (6) An employer shall furnish training to an employee before the employer assigns an employee to perform maintenance on a fixed fire system.

Employee Emergency Action Plans

- R. 1842** (4) Before implementing the emergency action plan, an employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.

- R. 1842** (6) Upon initial assignment, an employer shall review with each employee the parts of the plan that an employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review. For employers that have ten or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

- R. 1842** (7) An employer shall provide, as warranted by the project, a trained and equipped fire fighting organization (fire brigade) to assure adequate protection to life.

Training

- R. 1850** (1) If an employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an education program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.
- (2) An employer shall provide the education required in this rule upon initial employment and at least annually thereafter.

Fixed Fire Equipment

- R. 1853** (2) During demolition or alterations, an existing sprinkler or standpipe system shall be maintained in service in any portion of a structure that is not subject to demolition or alteration. The operation of a sprinkler control valve shall be permitted only by a properly authorized person. Modification of a sprinkler system to permit alterations or additional demolition shall be expedited so that the automatic protection may be returned to service as quickly as possible. Sprinkler control valves shall be checked daily at the close of work to ascertain whether the protection is in service. When the sprinkler or standpipe system is out of service for other than routine maintenance, the local fire department and the building manager or designated representative shall be notified. A sign shall be posted on each fire department connection that is out of service and the balance of the service shall be tested and resealed in operable condition, where required, and both the fire department and the building manager or designated representative shall be advised that the system is again in service.

Sources of Ignition

- R. 1869** (3) Sources of ignition, such as smoking, open flame, cutting and welding, frictional heat, sparks, and heating equipment, shall not be permitted within 25 feet in any direction of where an internal combustion engine is fueled or where a flammable or combustible liquid is dispensed. A warning sign shall be posted as prescribed in construction safety standard Part 22 'Signals, Signs, Tags, and Barricades,' being R 408.42201 et seq. which is referenced in R 408.41802. The motor of any equipment being fueled shall be shut off during the fueling operation.

PART 19. TOOLS (as amended February 18, 1997)

Employer and Employee Responsibilities

- R. 1931** **(1)** **An employer shall do all of the following:**
- (a)** Ensure that an employee has been trained in the use of tools before authorizing their use.

Power-Actuated Tool Operators' Qualifications

- R. 1941** An operator of a powder-actuated tool shall be trained to clean the tool correctly and to recognize any worn or defective part or defective operation. The operator shall be able to use the powder-actuated tool safely under varying conditions, know the limitations of its use, and demonstrate competence by actually operating the tool in the presence of the persons who issue the operator=s card. The operator shall be familiar with the provisions of these rules and the instructions provided by the manufacturer for operation and care of the powder-actuated tool to be operated, and be able to read the instructions.

Power-Actuated Tool Operators' Cards

- R. 1942** **(3)** The purpose of the operator's card is to certify that the operator has completed the required training to become a qualified operator.
- R. 1942** **(8)** The manufacturer of a powered-actuated tool should establish an appropriate program to instruct its employees, dealers, and distributors in the proper technical training and testing of operators and the issuance of operator's cards. Operators' cards may be issued by either of the following:
- (a)** A dealer or distributor of powered-actuated tools, who has been authorized by the tool manufacturer to issue such cards.
 - (b)** An authorized employee of a powered-actuated tool manufacturer.

Hot Sticks

- R. 1969** **(2)** A hot stick which has been damaged shall not be used until replaced or repaired by an knowledgeable employee or an outside service and tested to meet the requirements of subrule (3).

PART 20. DEMOLITION (as amended December 27, 2000)

- R. 203** **(1)(a)** Before the start of a demolition operation, all of the following shall be done:
- (a)** A survey of the structure and equipment shall be conducted by a person knowledgeable in demolition to determine the following:
 - (i)** The condition of the foundation, roof, walls and floors
 - (ii)** Whether any adjacent structure will be affected by the demolition
 - (iii)** The utility service entering the building
 - (iv)** Any other conditions and equipment affecting the safety of the employee
- R. 2045** **(2)** Equipment used in mechanical demolition shall comply with both of the following:
- (a)** It shall only be operated by a qualified and authorized employee.

PART 21. GUARDING OF WALKING AND WORKING AREAS (as amended September 3, 1996)

Training Requirements

- R. 2130** **(1)** An employer shall provide a training program for each employee who uses stairways, as necessary. The program shall enable each employee to recognize hazards related to stairways and shall train each employee in the procedures to be followed to minimize these hazards.
- R. 2130** **(2)** An employer shall ensure that each employee has been trained by a competent person in the following areas, as applicable:
- (a)** The nature of fall hazards in the work area.
 - (b)** The rules contained in this part.
- R. 2130** **(3)** Retraining shall be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through compliance with the provisions of this rule.

PART 22. SIGNALS, SIGNS, TAGS, AND BARRICADES (as amended November 20, 2006)

Definitions

- R.2213** (9) **“Traffic regulator”** means a person who has been trained, properly attired, and equipped to regulate traffic flow to provide employee protection in a work zone.

Duties of Employer

- R. 2221** (1) An employer shall provide, install, and maintain signals, signs, barricades, and tags, as prescribed by this part, where an employee might be, or would likely be, injured if not alerted to the hazard.
- (2) An employer shall provide training appropriate to the work assignment for each employee engaged in activities covered by this part. The following are examples of the training that may be required:
- (a) Recognition of hazards, such as, but not limited to, possible masonry wall collapse areas, crane swing areas, floor opening covers, or traffic control hazards.
 - (b) Traffic regulator training.
 - (c) Proper placement and removal of signs, signals, tags, and barricades.
 - (d) Training in how to perform work in proximity to traffic to minimize vulnerability.

Traffic Control

- R. 2223** (3) Signaling directions by traffic regulators shall conform to the provisions of Part 6 of the 2005 MMUTCD, which is adopted by reference in R.408.42209.

Accident Prevention Signs

- R. 2231** An accident prevention sign shall be in compliance with all the following provisions:
- (a) Be placed to alert and inform in time to avoid a hazard or to take appropriate action.

Danger Signs

- R. 2233** (4) An employee shall be instructed that a danger sign indicates immediate danger and that special precautions are necessary.

Caution Sign

- R. 2234 (4) An employee shall be instructed that a caution sign indicates a possible hazard and that proper precautions shall be taken.

Safety Instruction Sign

- R. 2235 (1) A safety instruction sign shall be used for a general instruction or suggestion relative to safety measures.

PART 24. TAR KETTLES (as amended September 3, 1996)

Operator in Attendance

- R. 2403 (3) A tar kettle or tanker shall have a qualified experienced operator in attendance at all times that the kettle or tanker is being fired. The operator shall not leave the ground area or be at a distance from the kettle or tanker that would prevent the operator's immediate attention.

PART 25. CONCRETE CONSTRUCTION (as amended December 11, 2003)

Forms and Shoring

- R. 2521 (2) Drawings or plans prepared by a qualified employee, except as required in R 408.42533(7) R 408.42533(1), which show the jack layout, formwork, shoring, working decks, and scaffolding shall be available at the jobsite.
- (5) No construction loads shall be placed on a concrete structure or portion of a concrete structure unless the employer determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the loads.

Lift-Slab Operations

- R. 2533 (12) ...An employer shall ensure that the welders are familiar with the welding requirements specified in the lift-slab plan and specifications.

PART 26. STEEL ERECTION (as amended March 14, 2007)

Multiple Lift Rigging Procedure

- R. 2610** **(1)** A multiple lift shall only be performed if all of the following criteria are met:
- (a)** A multiple lift rigging assembly is used.
 - (b)** A maximum of 5 members are hoisted per lift.
 - (c)** Only beams and similar structural members are lifted.
 - (d)** All employees engaged in the multiple lift have been trained in multiple lift procedures in accordance with R 408.42655(1).
 - (e)** A crane shall not be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations.

Connectors

- R. 2646** **(1)** Each connector shall be in compliance with all of the following provisions:
- (a)** Be protected in accordance with R 408.42645(1) from fall hazards of more than 2 stories or 30 feet (9.1 m) above a lower level, whichever is less.
 - (b)** Have completed connector training in accordance with R 408.42655(2).
 - (c)** Be provided, at heights of more than 15 and up to 30 feet above a lower level, with a personal fall arrest system, positioning device system, or fall restraint system and wear the equipment necessary to be able to be tied off; or be provided with other means of protection from fall hazards in accordance with R408.42645(1).

Controlled Decking Zone (CDZ)

- R. 2648** **(1)** A controlled decking zone (CDZ) may be established in that area of the structure of more than 15 and up to 30 feet above a lower level where metal decking is initially being installed and forms the leading edge of a work area. In each CDZ, all of the following provisions shall apply:
- (a)** Each employee working at the leading edge in a CDZ shall be protected from fall hazards of more than 2 stories or 30 feet (9.1 m), whichever is less.
 - (b)** Access to a CDZ shall be limited to only those employees engaged in leading edge work.
 - (c)** The boundaries of a CDZ shall be designated and clearly

marked. The CDZ shall not be more than 90 feet (27.4 m) wide and 90 (27.4 m) feet deep from any leading edge. The CDZ shall be marked by the use of control lines or the equivalent. Examples of acceptable procedures for demarcating CDZ's can be found in appendix D, as referenced in R 408.42602(1).

- (d) Each employee working in a CDZ shall have completed CDZ training in accordance with R 408.42655(3).
- (e) Unsecured decking in a CDZ shall not be more than 3,000 square feet (914.4 m²).
- (f) Safety deck attachments shall be performed in the CDZ from the leading edge back to the control line and shall have not less than 2 attachments for each metal decking panel.
- (g) Final deck attachments and installation of shear connectors shall not be performed in the CDZ.

Training

R. 2653 (1) Training personnel. Training required by this rule shall be provided by a qualified person or persons.

R. 2653 (2) An employer shall provide a training program for all employees exposed to fall hazards. The program shall include training and instruction in all of the following areas:

- (a) The recognition and identification of fall hazards in the work area.
- (b) The use and operation of all of the following:
 - (i) Guardrail systems, including perimeter safety cable systems.
 - (ii) Personal fall arrest systems.
 - (iii) Positioning device systems.
 - (iv) Fall restraint systems.
 - (v) Safety net systems.
 - (vi) Other protection to be used.
- (c) The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- (d) The procedures to be followed to prevent falls to lower levels and through or into holes and openings in walking/working surfaces and walls.
- (e) The fall protection requirements of this part.

Special Training

- R. 2655 (1)** An employer shall ensure that each employee who performs multiple lift rigging has been provided training in both of the following areas:
- (a)** The nature of the hazards associated with multiple lifts.
 - (b)** The proper procedures and equipment to perform multiple lifts required by R 408.42610.
- R. 2655 (2)** An employer shall ensure that each connector has been provided training in both of the following areas:
- (a)** The nature of the hazards associated with connecting.
 - (b)** The establishment, access, proper connecting techniques, and work practices required by R 408.42629(1) and (2) and R 408.42646.
- R. 2655 (3)** Where CDZ' s are being used, an employer shall assure that each employee has been provided training in both of the following areas:
- (a)** The nature of the hazards associated with work within a controlled decking zone.
 - (b)** The establishment, access, proper installation techniques, and work practices required by R 408.42620, R 408.42622, R 408.42640, and R 408.42648.

NON-MANDATORY APPENDIXES

Appendix E – Training

Non-Mandatory Guidelines for Complying with R 408.42635 and R 408.42655

The training requirements of R 408.42653 and R 408.42655 of Construction Safety Standard, Part 26 “Steel Erection,” will be deemed to have been met if employees have completed a training course on steel erection, including instruction in the provisions of this standard, that has been approved by the U.S. Department of Labor Bureau of Apprenticeship.

CONSTRUCTION SAFETY TRAINING REQUIREMENTS

PART 27. BLASTING AND USE OF EXPLOSIVES (as amended June 1, 1994)

Scope

R. 2701 This part provides for the training and testing of employees and for the storage, transport, and use of blasting materials for construction operations. This part also provides for the protection of other employees while working within a blast area.

R. 2724 (2) Blaster means an employee who is authorized by the employer to use explosives for blasting purposes, who carries a permit to use explosives for blasting purposes, issued by the employer as required by rule 2732 of this part, and who meets the qualifications of rule 2731 of this part.

Employer Responsibilities

R. 2727 (1) Before authorizing and issuing a permit to an employee to work with explosives, an employer shall train an employee in the proper method of handling, transporting, and using an explosive and shall instruct the employee in the applicable rules of this part. The employee shall be known as a blaster.

R. 2727 (3) An employer shall establish, post and make known to all employees at the work site, a method or code of blasting signals which are as effective as the signals listed in table 1. An employee who is not able to hear the blasting signal shall not be permitted in the blast area.

Employee Responsibilities

R. 2728 (1) An employee shall not handle, transport, or use an explosive unless the employee has received training in, and is authorized to work with, explosives or is under the supervision of the blaster.

R. 2728 (3) An employee who drives a vehicle carrying an explosive shall have a knowledge of and follow federal and state rules and regulations governing the transportation of explosives.

Employee Qualifications

- R.2731 (1)** An employee who handles, transports, or uses an explosive shall meet all of the following requirements:
- (a)** Have a corrected vision of not less than 20/40 acuity.
 - (b)** Have the physical strength and coordination to do the assigned task.
 - (c)** Be free from known convulsive disorders and episodes of unconsciousness.
 - (d)** Be able to hear and understand conversational levels of sound in an ordinary office environment.
 - (e)** Be able to understand signs, labels, and instructions and be able to follow written or oral orders.
 - (f)** Be able to distinguish colors.
- R. 2731 (2)** A blaster shall be qualified by reason of training, knowledge, or experience in the field of transporting, storing, handling, and using explosives and shall have a working knowledge of federal, state, and local laws, rules, and regulations pertaining to explosives.
- R. 2731 (3)** A blaster shall be required to furnish satisfactory evidence of his or her competence in handling explosives and his or her ability to perform the type of blasting that will be required in a safe manner.
- R. 2731 (4)** Before an employer allows an employee to handle, transport, or use an explosive, or to work as a trainee, the employee shall be trained in the hazards and safeguards of the employee's assigned job and shall be instructed in the requirements of this part.

Permit to Handle, Transport, and Use Explosives

- R.2732 (1)** A blaster shall obtain a permit to handle, transport, and use explosives issued by the employer.
- R. 2732 (4)** An employer shall be rechecked in the requirements of rule 2731 not less than every three years and be issued a new permit.

Blaster Supervision

- R. 2733 (1)** The storage, transportation, and use of an explosive material shall be directed and supervised by a competent employee who is experienced in the storage, transportation, and use of explosives. a person who is experienced in this field shall be known as a blaster.
- R. 2733 (2)** A trainee in the use of an explosive shall work under the direct supervision of the blaster.

CONSTRUCTION SAFETY TRAINING REQUIREMENTS

R. 2733 (3) A blaster shall not be assigned more than 3 trainees at any one time.

Transport of Explosives

R. 2741 (3) A vehicle that transports an explosive shall be equipped with a portable fire extinguisher which does not have less than a 2A10-BC rating and which is in operable condition. The vehicle driver shall be trained in the use of fire extinguishers.

PART 28. PERSONNEL HOISTING IN STEEL ERECTION (Filed March 14, 2007)

Personnel Hoisting

R.2809 (2)(g) An operator of a crane or derrick shall:

- (i) Not be authorized to raise or lower the connector or connectors on a load line standing platform unless the operator is certified by the national commission for the certification of crane operators or an equivalent crane certification organization.
- (ii) Be trained in all of the provisions of R 408.42809(2) before being allowed to transport the connector or connectors on a load line standing platform.

PART 29. COMMUNICATION TOWERS (Filed March 27, 2009)

Definitions

R. 2907 (2) "Authorized climber" means an individual with the physical capabilities to climb; who may or may not have previous climbing experience; has been trained in fall protection regulations, the equipment that applies to communication structures work, and instruction for proper use of the equipment.

(27) "Proficient" means a thorough competence derived from training and practice.

Fall Protection

R. 2910 (3)(c) A competent person shall ensure that all fall protection equipment is inspected prior to each use for wear, damage, defect, or other deterioration by employees who have been trained in accordance

with R 408.42916. Defective equipment shall be identified and tagged as defective and immediately removed from service.

- R.2910** **(4)(c)** (c) When employees are working on a structure where no adequate tie-off anchorage points exist, the fall protection systems described in subrule (4)(a) and (b) of this rule are not feasible or create a greater hazard, and the work cannot be completed utilizing an alternative means of access to the work area such as an aerial lift or elevated work platform, then an employer shall comply with Construction Safety Standard Part 45 Fall Protection, R 408.44501 and R 408.44502, and ensure all of the following:
- (i)** That each employee under the fall protection plan has been trained as an authorized climber.
 - (ii)** That the fall protection plan shall be made available and communicated to exposed employees prior to the employees beginning work, and such communication shall be documented by the employer.
 - (iii)** That the fall protection plan shall identify each location on the tower/structure where fall protection methods as described in subrule (4)(a) and (b) of this rule cannot be used. As soon as adequate tie-off anchorage points or other fall protection systems can be established, the employer shall use any of the fall protection systems described in subrule (4)(a) and (b) of this rule.

Emergency Response

- R. 2913** **(2)** When an employer uses employees to provide elevated (high angle) rescue and emergency services, the following measures shall be taken:
- (a)** Ensure at least 2 rescue-trained employees are on-site when employees are working at heights over 6 feet on the structure. When there are only 2 employees on-site and 1 of these employees has been employed for less than 12 months, then that new employee must minimally have documented rescue training which includes steps to be taken in an emergency.
 - (b)** Ensure that personal protective equipment (PPE) and high angle rescue equipment needed to conduct elevated rescues are provided, utilized, and maintained by the rescue-trained employees.
 - (c)** Train rescue employees so they are proficient in the use and maintenance of PPE and high angle rescue equipment needed to conduct elevated rescues.

CONSTRUCTION SAFETY TRAINING REQUIREMENTS

- (d) Train rescue employees to perform assigned rescue duties to ensure that they maintain the ability to perform and demonstrate such duties by conducting and documenting simulated rescue operations at least once every 12 months. The employer shall keep documentation available for review by the director of the Department of Labor and Economic Growth or his or her designee, upon request.

- R.2913**
- (4) In addition to the requirements of Occupational Health Standard Part 472 Medical Services and First Aid, R 325.47201, and Construction Safety Standard Part 1 General Rules, R 408.40132 Medical services and first aid, the employer shall ensure that at least 2 employees on site are trained and hold current certifications in basic first aid and cardiopulmonary resuscitation (CPR) issued by the American Red Cross or any other organization whose standards are equivalent to the American Red Cross. When there are only 2 employees on-site and 1 of these employees has been employed for less than 6 months, then only the other employee must be trained and hold current certifications in basic first aid and CPR.

Training

- R. 2916**
- (1) In order for employees to work at heights above 6 feet, they must be approved for such work by a competent person.
 - (2) Training of employees shall be performed by a qualified person able to perform such training.
 - (3) The employer's written work procedures shall be provided to employees as part of their training.
 - (4) Pictures and symbols may be used as a means of instruction if employee understanding is improved using this method.
 - (5) The employer shall ensure that each employee working at heights above 6 feet has been trained in all of the following areas:
 - (a) The nature of fall hazards in the work area.
 - (b) The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
 - (c) The correct procedures for inspecting fall protection equipment for wear, damage, defect, or deterioration.
 - (d) Climbing safety procedures.
 - (e) The use and operation of the fall protection systems used by the employer, as described in R 408.42910(4).
 - (f) The role of employees in fall protection plans.
 - (g) The compatibility of fall protection equipment and fall protection systems.

- (6) All employees who may be exposed in excess of the general population/uncontrolled maximum permissible exposure (MPE) limits stated in the Federal Communications Commission 47 CFR 1.1310 Radiofrequency Radiation Exposure Limits Standard shall receive radio frequency (RF) hazard awareness training by a qualified person able to perform such training in all of the following areas:
 - (a) General population/uncontrolled MPE limits.
 - (b) Recognition of RF exposure sources in communication tower work.
 - (c) Proper use and interpretation of RF exposure.
 - (d) Work procedures to avoid excessive RF exposure.
 - (e) Proper use of RF protective clothing and other related PPE.
 - (f) Symptoms and health issues related to RF exposure.
 - (g) RF exposure first-aid procedures.
 - (h) Exposure to induced current hazards.

- (7) Employers shall ensure that each affected employee who works in an electromagnetic energy environment with potential RF exposure in excess of the general population/uncontrolled MPE limits stated in the Federal Communications Commission 47 CFR 1.1310 Radiofrequency Radiation Exposure Limits Standard has access and understands the specific site information related to the RF energy and RF fields present at each individual site.

- (8) When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by this rule, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, the following situations:
 - (a) Changes in the workplace render previous training obsolete.
 - (b) Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
 - (c) Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Training Certification and Records

- R. 2919 (1) The employer shall document that each employee has been trained with a certification record that includes all of the following:
 - (a) The identity of the person trained.
 - (b) The signature of the employer or the qualified person who conducted the training.

CONSTRUCTION SAFETY TRAINING REQUIREMENTS

- (c) The date that training was completed.
- (d) A description of the training.
- (2) The employer shall maintain a copy of the training lesson plan for each topic of instruction.
- (3) The employer shall prepare the certification record at the completion of the training required by these rules and shall be maintained for the duration of the employee's employment.
- (4) The most current certification record shall be kept available for review by the director of the Department of Labor and Economic Growth or his or her designee, upon request.
- (5) An employer may accept training records or certificates for previous training if the employer verifies that all

Hoists

- R. 2925** (1) Prior to the use of hoists during construction, alteration, repair, maintenance, or demolition of communication towers, the employer shall ensure that they meet the following requirements:
- (c) The operating manual developed by the manufacturer, or licensed professional engineer, for the specific make and model hoist being used, as well as documentation for any inspection, testing, and operator training certification required by these rules shall be maintained at the work site.
 - (d) Documentation shall be maintained that the hoist operator has practical training on the hoist being operated.

Catheads or Capstans

- R. 2928** When operating catheads or capstans the employer shall ensure that the following requirements are met:
- (a) The operator will be properly trained on the operation of catheads or capstans.

Personnel Lifting

- R. 2934** (1) Before an employee may perform any job related to hoisting employees aloft for work, the employee shall receive training on safe access pursuant to these rules. The operator of the hoist shall have a thorough understanding and comply with subrules (2) to (9) of this rule pertaining to hoisting employees on the hoist line.

Hoists Used for Personnel Lifting

- R. 2937** (7) The hoist operator shall have classroom training, a minimum of 40 hours experience as a hoist operator, not less than 8 hours

experience in the operation of the specified hoist or 1 of the same type, and demonstrated the ability to safely operate the hoist. All of the following shall apply:

- (a) The operator shall not operate a hoist when physically or mentally unfit.
- (b) The hoist operator shall be responsible for those operations under his/her direct control.
- (c) If there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle the load until safety has been assured.
- (d) The hoist operator shall remain at the controls at all times when personnel are on the hoist line.
- (e) Before starting the hoist, the operator shall ensure the following:
 - (i) The daily inspection has been conducted.
 - (ii) All controls are in the "off" position.
 - (iii) All personnel are in the clear.

PART 30. TELECOMMUNICATIONS (as amended Sept. 8, 2005)

Battery Handling

- 1910.268 (b)(2)(i)** Eye protection devices which provide side as well as frontal eye protection for employee shall be provided when measuring storage battery specific gravity or handling electrolyte, and the employer shall ensure that such devices are used by the employees. The employer shall also ensure that acid resistant gloves and aprons shall be worn for protection against spattering. Facilities for quick drenching or flushing of the eyes and body shall be provided unless the storage batteries are of the enclosed type and equipped with explosion proof vents, in which case sealed water rinse or neutralizing packs may be substituted for the quick drenching or flushing facilities. Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills.

Training

- 1910.268 (c)** Employers shall provide training in the various precautions and safe practices described in this section and shall insure that employees do not engage in the activities to which this section applies until such employees have received proper training in the various precautions and safe practices required by this section. However, where the employer can demonstrate that an employee is already trained in the precautions and safe practices required by this section prior to his

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employment, training need not be provided to that employee in accordance with this section. Where training is required, it shall consist of on-the-job training or classroom-type training or a combination of both. The employer shall certify that employees have been trained by preparing a certification of record which includes the identity of the person trained, the signature of the employer or the person who conducted the training, and the date the training was completed. The certification record shall be maintained on file for the duration of the employee's employment. The certification record shall be made available upon request to the Assistant Secretary for Occupational Safety and Health. Such training shall, where appropriate, include the following subjects:

- (1) Recognition and avoidance of dangers relating to encounters with harmful substances and animal, insect or plant life.
- (2) Procedures to be followed in emergency situations, and
- (3) First aid training, including instruction in artificial respiration.

Vehicle-mounted material handling devices and other mechanical equipment

(j)(4) Derrick trucks and similar equipment:

- (d) Only persons trained in the operation of the derrick shall be permitted to operate the derrick.

Cable Fault Locating and Testing

- (l)(1) Employees involved in using high voltages to locate trouble or test cables shall be instructed in the precautions necessary for their own safety, and the safety of other employees.
- (l)(2) Before the voltage is applied, cable conductors shall be isolated to the extent practicable. Employees shall be warned, by such techniques and briefing and tagging at all affected locations, to stay clear while the voltage is applied.

Underground Lines

- (o)(1) (ii) While work is being performed in the manhole, a person with basic first aid training shall be immediately available to render assistance if there is cause for believing that a safety hazard exists, and if the requirements contained in paragraphs (d)(1) and (o)(1)(i) of this section do not adequately protect the employee(s).
- (o)(3) Joint power and telecommunication manholes. While work is being

performed in a manhole occupied jointly by an electric utility and a telecommunication utility, an employee with basic first aid training shall be available in the immediate vicinity to render emergency assistance a may be required.

Tree Trimming - Electrical Hazards

- (q)(1)(ii)** Employees engaged in line-clearing operations shall be instructed that:
 - (a)** A direct contact is made when any part of the body touches or contacts and energized conductor, or other energized electrical fixture or apparatus.
 - (b)** An indirect contact is made when any part of the body touches any object in contact with an energized electrical conductor, or other energized fixture or apparatus.
 - (c)** An indirect contact can be made through conductive tools, tree branches, trucks equipment, or other objects or as a result of communications wires, cables, fences, or guy wires being accidentally energized.
 - (d)** Electric shock will occur when an employee, by either direct or indirect contact with an energized conductor, energized tree limb, tool, equipment, or other object, provides a path for the flow of electricity to a grounded object or to the ground itself. simultaneous contact with two energized conductors will also cause electric shock which may result in serious or fatal injury.
- (q)(2)(ii)** Only qualified employees or trainees, familiar with the special techniques and hazards involved in line clearance, shall be permitted to perform the work if it is found that an electrical hazard exists.
- (2)(iii)** During all tree working operations aloft where an electrical hazard of more than 750V exists, there shall be a second employee or trainee qualified in line clearance trimming within normal voice communication.

Definitions

- (s)(33)** Qualified employee. Any worker who by reason of his training and experience has demonstrated his ability to safely perform his duties.
- (s)(34)** Qualified line-clearance tree trimmer. A tree worker who through related training and on-the-job experience is familiar with the special techniques and hazards involved in line-clearance.

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- (s)(35) Qualified line-clearance tree-trimmer trainee. Any worker regularly assigned to a line-clearance tree-trimming crew and undergoing on-the-job training who, in the course of such training, has demonstrated his ability to perform his duties safely at his level of training.

PART 31. DIVING OPERATIONS (filed June 1, 1994)

Qualifications of Dive Team

- R. 3112 (1) The employer shall ensure that each dive team member has the experience and training necessary to perform assigned tasks in a safety and healthful manner. The training and experience shall include all of the following:
- (a) The use of tools, equipment, and systems relevant to assigned tasks.
 - (b) Techniques of the assigned diving mode.
 - (c) Diving operations and emergency procedures.
 - (d) Familiar with the contents of the safe practices manual required by Rule 3114.
- R. 3112 (2) All dive team members shall be trained in cardiopulmonary resuscitation and first aid by the American Red Cross or equivalent organizations.
- R. 3112 (3) Each dive team member who is exposed to or controls the exposure of others to hyperbaric conditions shall be trained in diving-related physics and physiology.

Dive Team Assignments

- R. 3113 (2) The designated person in charge shall have experience and training in the conduct of the assigned diving operation.
- R. 3113 (3) Each dive team member shall be assigned tasks in accordance with the employee's experience or training, except that limited additional tasks may be assigned to an employee undergoing training if these tasks are performed under the direct supervision of an experienced dive team member.

Safe Practices Manual

- R. 3114 (1) The employer shall develop and maintain a safe practices manual which shall be made available to each dive team member at the dive location.

- R. 3114** **(2)** The safe practices manual shall contain a copy of these rules, the employer's policies for implementing their requirements, and all of the following:
- (a)** Operating procedures and checklists for diving operations.
 - (b)** Assignments and responsibilities of the dive team members.
 - (c)** Equipment procedures and checklists.
 - (d)** Emergency procedures for fire, equipment failure, adverse environmental conditions and medical illness and injury.

Per-Dive Procedures; Employee Briefing

- R. 3124** **(1)** Dive team members shall be briefed on all of the following:
- (a)** The tasks to be undertaken.
 - (b)** Operating procedures for the diving mode.
 - (c)** Any unusual hazards or environmental conditions likely to affect the safety of the diving operation.
 - (d)** Any modifications to operating procedures necessitated by the specific diving operation.
- R. 3124** **(2)** Prior to making individual dive team member assignments, the employer shall inquire into the dive team members current state of physical fitness, and indicate to the dive team member the procedure for reporting physical problems or adverse physiological effects during and after the dive.

Post Dive Procedures; Generally

- R. 3141** **(1)** The employer shall comply with all of the following requirements which are applicable after each diving operation:
- (a)** Check the physical condition of the diver.
 - (b)** Instruct the diver to report any physical problems or adverse physiological effects, including symptoms of decompression sickness.
 - (c)** Advise the diver of the location of a decompression chamber which is ready for use.
 - (d)** Alert the diver to the potential hazards of flying after diving.
 - (e)** Instruct the diver to remain awake and in the vicinity of the dive location for not less than one hour after a dive which required a decompression chamber.

PART 32. AERIAL WORK PLATFORMS (as amended March 5, 2008)

Employer and Employee Responsibility

- R. 3203 (1)** An employer shall do all of the following:
- (a) Provide training to employees in the operations, hazards, safeguards and safe practices described in these rules by a qualified person.
 - (b) Ensure that employees do not engage in the activities to which these rules apply until such employees have received training.
 - (c) Maintain an aerial device in a condition free of known defects and hazards which could cause an injury.
- R. 3203 (2)** An employee shall do both of the following:
- (a) Operate an aerial device only after being trained in the operations, hazards, safeguards and safe practices required by these rules by a qualified person and authorized by the employer.
 - (b) Report known defects and hazards concerning an aerial device to the supervisor.

Permits; Training

- R. 3207 (1)** An employer shall provide the operator of an aerial work platform with an aerial work platform permit.
- R. 3207 (2)** The requirements of subrule (8)(a), (b), (c) and (d) of this rule shall be met before an employee is issued a permit.
- R. 3207 (3)** A permit shall be carried by the operator or be available at the job site and shall be displayed upon request by a department of consumer and industry services representative.
- R. 3207 (4)** A permit shall indicate the type of aerial work platforms an operator has been trained on and is qualified to operate.
- R. 3207 (8)** An employer shall provide each employee who will operate the aerial work platform with instruction and training regarding the equipment before a permit is issued or reissued. such instruction and training shall ensure that each operator is in compliance with the minimum following provision:
- (a) Is instructed by a qualified person in the intended purpose and function of each of the controls.

- (b) Is trained by a qualified person or reads and understands the manufacturers or owner's operating instructions and safety rules.
- (c) Understands by reading or by having a qualified person explain, all decals, warnings, and instruction displayed on the areal work platform.
- (d) Reads and understands the provisions of this subrule and subrules (1) to (7) and (9) of this rule or be trained by a qualified person on their content.

R. 3207 (9) The manufacturer's operating instruction and safety rules shall be provided and maintained in a legible manner on each unit by the employer.

Operating Procedures

R. 3216 (1) The aerial work platform shall be used only in accordance with the manufacturers or owners operating instructions and safety rules.

R. 3216 (11) Outriggers or stabilizers, when provided, and are to be used in accordance with the manufacturer's instruction. Brakes shall be set and outriggers and stabilizers shall be positioned on pads or a solid surface.

R. 3216 (12) Aerial work platforms shall be elevated only when on a firm and level surface or within the slope limits allowed by the manufacturer's instructions.

PART 42/430. HAZARD COMMUNICATION (as amended June 2, 1995) *(Federal Standard 1910.1200)*

(a) Purpose

- (1) The purpose of this section is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training.
- (2) This occupational safety and health standard is intended to address comprehensively the issue of evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective

measures to employees, and to preempt any legal requirements of a state, or political subdivision of a state, pertaining to this subject. Evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees, may include, for example, but is limited to, provisions for: developing and maintaining a written hazard communication program for the workplace, including lists of hazardous chemicals present; labeling of containers of chemicals in the workplace, as well as of containers of chemicals being shipped to other workplaces; preparation and distribution of material safety data sheets to employees and downstream employers; and development and implementation of employee training programs regarding hazards of chemicals and protective measures. Under section 18 of the Act, no state or political subdivision of a state may adopt or enforce, through any court or agency any requirement relating to the issue addressed by this Federal standard, except pursuant to a Federally approved state plan.

(b) Scope and application

- (1)** This section requires chemical manufacturers or importers to assess the hazards of chemicals which they produce or import, and all employers to provide information to their employees about the hazardous chemicals to which they are exposed, by means of a hazard communication program, labels and other forms of warning, material safety data sheets, and information and training. In addition, this section requires distributors to transmit the required information to employers. (Employers who do not produce or import chemicals need only focus on those parts of this rule that deal with establishing a workplace program and communicating information to their workers. Appendix E of this section is a general guide for such employers to help them determine their compliance obligations under the rule.)
- (3) (iii)** Employers shall ensure that laboratory employees are provided information and training in accordance with paragraph (h) of this section, except for the location and availability of the written hazard communication program under paragraph (h)(2)(iii) of this section; and,
- (4) (iii)** Employers shall ensure that employees are provided with information and training in accordance with paragraph (h) of this section (except for the location

and availability of the written hazard communication program under paragraph (h)(2)(iii) of this section), to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.

(e) “Written Hazard Communication Program”

(1) Employers shall develop, implement, and maintain at each workplace, a written hazard communication program which at least describes how the criteria specified in paragraphs (f), (g), and (h) of this section for labels and other forms of warning, material safety data sheets, and employee information and training will be met, and which also includes the following:

(i) A list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate material safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas); and,

(ii) The methods the employer will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels), and the hazards associated with chemicals contained in unlabeled pipes in their work areas.

(2) “Multi-employer workplaces.” Employers who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employer(s) may be exposed (for example, employees of a construction contractor working on-site) shall additionally ensure that the hazard communication programs developed and implemented under this paragraph (e) include the following:

(i) The methods the employer will use to provide the other employer(s) on-site access to material safety data sheets for each hazardous chemical the other employer(s) employees may be exposed to while working;

(ii) The methods the employer will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace’s normal operating conditions and in foreseeable emergencies; and,

(iii) The methods the employer will use to inform the other employer(s) of the labeling system used in the

workplace.

(h) Employee information and training

- (1)** Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets.
- (2)** Information. Employees shall be informed of:
 - (i)** The requirements of this section;
 - (ii)** Any operations in their work area where hazardous chemicals are present; and,
 - (iii)** the location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets required by this section.
- (3)** Training. Employee training shall include at least:
 - (i)** Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
 - (ii)** The physical and health hazards of the chemicals in the work area;
 - (iii)** The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures and personal protective equipment to be used; and,
 - (iv)** The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet,

and how employees can obtain and use the appropriate hazard information.

PART 45. FALL PROTECTION (as amended September 3, 1996)

- 1926.502** **(d)(8)** Horizontal lifelines shall be designed, installed and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.
- (d)(15)(ii)** Anchorages used for attachment of personal fall arrest equipment shall be designed, installed and used as follows:
- (ii)** Under the supervision of a qualified person
- (d)(19)** Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.
- (h)** **Safety monitoring systems.** Safety monitoring systems [See 1926.501(b)(10) and 1926.502(k)] and their use shall comply with the following provisions:
- (1)** The employer shall designate a competent person to monitor the safety of other employees and the employer shall ensure that the safety monitor complies with the following requirements:
- (i)** The safety monitor shall be competent to recognize fall hazards
- (ii)** The safety monitor shall warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner
- (iii)** The safety monitor shall be on the same walking/working surface and within visual sighting distance of the employee being monitored
- (iv)** The safety monitor shall be close enough to communicate orally with the employee
- (v)** The safety monitor shall not have other responsibilities which could take the monitor's attention from the monitoring function
- (h)** **(4)** Each employee working in a controlled access zone shall be directed to comply promptly with fall hazard warnings from safety monitors.

- (k) Fall protection plan** This option is available only to employees engaged in leading edge work, precast concrete erection work or residential construction work [See 1926.501(b)(2), (b)(12) and (b)(13)] who can demonstrate that it is infeasible or it creates a greater hazard to use conventional fall protection equipment. The fall protection plan must conform to the following provisions:
- (1)** The fall protection plan shall be prepared by a qualified person and developed specifically for the site where the leading edge work is done, precast concrete work or residential construction work is being performed and the plan must be maintained up to date.
 - (2)** Any changes to the fall protection plan shall be approved by a qualified person.
 - (4)** The implementation of the fall protection plan shall be under the supervision of a competent person.
 - (10)** In the event an employee falls or some other related, serious incident occurs, (e.g. a near miss) the employer shall investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g. new practices, procedures or training) and shall implement those changes to prevent similar types of falls or incidents.

R. 1926.503a Training Requirements The following training provisions supplement and clarify the requirements of 1926.21 regarding the hazards addressed in subpart M of this part.

Training program

- (1)** The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee in the procedures to be followed in order to minimize these hazards.
- (2)** The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:
 - (i)** The nature of fall hazards in the work area
 - (ii)** The correct procedures for erecting, maintaining, disassembling and inspecting the fall protection systems to be used
 - (iii)** The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones and

- other protection to be used
- (iv) The role of each employee in the safety monitoring system when this system is used
- (v) The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs
- (vi) The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; and
- (vii) The role of employees in fall protection plans
- (viii) The standards contained in this subpart

R. 1926.503(b)

Certification of training

- (1) The employer shall verify compliance with paragraph (a) of this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.
- (2) The latest training certification shall be maintained

R. 1926.503(c)

Retraining.

When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by paragraph (a) of this section, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

- (1) Changes in the workplace render previous training obsolete; or
- (2) Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
- (3) Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Appendix C (II)(d) Employee training considerations. Thorough employee training in the selection and use of personal fall arrest systems is imperative. Employees must be trained in the safe use of the system. This should include the following: application limits, proper anchoring and tie-off techniques, estimation of free fall distance, including determination of deceleration distance and total fall distance to prevent striking a lower level, methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death. Employers and employees should become familiar with the material in this Appendix, as well as manufacturer's recommendations, before a system is used. Of uppermost importance is the reduction in strength caused by certain tie-offs (such as using knots, tying around sharp edges, etc.) and maximum permitted free fall distance. Also, to be stressed are the importance of inspections prior to use, the limitations of the equipment, and unique conditions at the worksite which may be important in determining the type of system to use.

Appendix C (II)(e) Instruction considerations. Employers should obtain comprehensive instructions from the supplier as to the system's proper use and application, including, where applicable:

- (1) The force measured during the sample force test;
- (2) The maximum elongation measured for lanyards during the force test;
- (3) The deceleration distance measured for deceleration devices during the force test;
- (4) Caution statements on critical use limitations;
- (5) Application limits;
- (6) Proper hook-up, anchoring and tie-off techniques, including the proper dee-ring or other attachment point to use on the body belt and harness for fall arrest;
- (7) Proper climbing technique
- (8) Methods of inspection, use, cleaning and storage, and;
- (9) Specific lifelines which may be used.

This information should be provided to employees during training.

Appendix E VII Sample Fall Protection Plan - Residential

VII Changes to Plan

Any changes to the plan will be approved by (name of the qualified person). This plan shall be reviewed by a qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers shall be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes shall be maintained at the jobsite.

PART 91/591 PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS (as amended August 3, 1999)

R. 9102(g) (1) Training

- (i) Each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, shall be trained in an overview of the process and in the operating procedures as specified in paragraph (f) of this section. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.
- (ii) In lieu of initial training for those employees already involved in operating a process on May 26, 1992, an employer may certify in writing that the employee has the required knowledge, skills, and abilities as specified in the operating procedures.
- (2) Refresher training.** Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. The employer, current operating procedures of the process. The employer, in consultation with the employees involved in operating the process, shall determine the appropriate frequency of refresher training.
- (3) Training documentation.** The employer shall ascertain that each employee involved in operating a process has received and understood the training required by this paragraph. The employer shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee

understood the training.

R. 9102(h) (2) Employer responsibilities.

- (i) The employer, when selecting a contractor, shall obtain and evaluate information regarding the contract employer's safety performance and programs.
- (ii) The employer shall inform contract employers of the known potential fire, explosion or toxic release hazards related to the contractor's work and the process.
- (iii) The contract employer shall explain to contract employers the applicable provisions of the emergency action plan required by paragraph (n) of this section.

(3) Contract employer responsibilities.

- (i) The contract employer shall assure that each contract employee is trained in the work practices necessary to safely perform his/her job.
- (ii) The contract employer shall assure that each contract employee is instructed in the known potential fire, explosion or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan.
- (iii) The contract employer shall document each contract employee has received and understood the training required by this paragraph. The contract employer shall prepare a record which contains the identity of the contract employee, the date of training and the means used to verify that the employee understood the training.

R. 9102(i) Pre-startup of safety review.

- (1) The employer shall perform a pre-startup safety review for new facilities and for modified facilities when the modification is significant enough to require a change in the process safety information.
- (2) The pre-startup safety review shall confirm that prior to the introduction of highly hazardous chemicals to a process:
 - (iv) Training of each employee involved in operating a process has been completed.

R. 9102(j) Mechanical integrity.

- (3) Training for process maintenance activities. The employer shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of the process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

R. 9102(i) Management of change.

- (3) Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change prior to start-up of the process or affected part of the process.

R. 9102(o) Compliance audits.

- (2) The compliance audit shall be conducted by at least one person knowledgeable in the process.

**CONSTRUCTION
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REQUIREMENTS**

PART 303. METHYLENEDIANILINE (MDA)

R 325.50064 Communication of hazards to employees.

Rule 14.(3) All of the following provisions pertain to employee information and training:

- (a) An employer shall provide employees with information and training on MDA in accordance with the provisions of paragraph (h) of the hazard communication standard at the time of their initial assignment of work that will involve exposure to MDA and at least annually thereafter.
- (b) An employer shall inform employees of all of the following:
 - (i) An explanation of the contents of these rules, including appendices A and B, and inform employees where a copy of these rules is available for inspection.
 - (ii) The medical surveillance program that is required by the provision of R 325.50066 to R 325.50069 and an explanation of the information contained in appendix C.
 - (iii) The medical removal provision required by the provisions of R 325.50070 and R 325.50071.
- (c) An employer shall make all written materials that relate to the employee training program, including a copy of these rules and appendices, readily available to all affected employees, without cost.

PART 304. ETHYLENE OXIDE (EtO)

R 325.51170 Employee information and training.

- Rule 20.**
- (1) An employer who has a workplace in which there is a potential exposure to airborne EtO at or above the action level or above the STEL shall provide employees with information and training on EtO at the time of initial assignment and at least annually for each employee.
 - (2) An employer shall ensure that each employee is informed of all of the following:
 - (a) The location, availability, and contents of these rules and appendices A and B to these rules.
 - (b) The specific nature of any operations in the employee's work area where EtO is present.
 - (c) The purpose and description of the medical surveillance program required in R 325.51165 to R 325.51168 and an explanation of the information in appendix C to these rules.
 - (3) An employer shall institute a training program that shall include all of the following areas:
 - (a) Methods and observations that may be used to detect the presence or release of EtO in the work area.
 - (b) The physical and health hazards of EtO.

- (c) The engineering controls, work practices, personal protective equipment, and emergency procedures used to protect employees.
- (d) The details of the hazard communication program developed by the employer, including an explanation of the labeling system and how employees can obtain and use appropriate hazard information.

PART 306. FORMALDEHYDE

R 325.51473 Employee information and training.

- Rule 23.**
- (1) An employer shall ensure that all employees who are assigned to workplaces where there is exposure to formaldehyde at or above 0.1 ppm participate in a training program.
 - (2) An employer shall provide employees with information and training on formaldehyde at the time of their initial assignment and when a new exposure to formaldehyde is introduced into their work areas. Employers shall provide such information and training at least annually.
 - (3) The training program shall be conducted in a manner that an employee is able to understand and shall include all of the following:
 - (a) A discussion of the contents of these rules and the contents of the material safety data sheet.
 - (b) An explanation of the purpose for, and a description of, the medical surveillance program required by these rules, including both of the following:
 - (i) A description of the potential health hazards associated with exposure to formaldehyde and a description of the signs and symptoms of exposure to formaldehyde.
 - (ii) Instructions to immediately report to the employer the development of any adverse signs or symptoms that the employee suspects is attributable to formaldehyde exposure.
 - (c) A description of operations in the work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job.
 - (d) An explanation of the purpose for, and proper use and limitations of, personal protective clothing and equipment.
 - (e) Instructions for the handling of spills, emergencies, and clean-up procedures.
 - (f) An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of these controls.
 - (g) A review of emergency procedures, including the specific duties or assignments of each employee in an emergency.

- (4) An employer shall inform all affected employees of the location of written training materials and shall make these materials readily available, without cost, to the affected employees. The employer shall provide, to the director, upon request, all training materials relating to the employee training program.

PART 307. ACRYLONITRILE (AN)

R 325.51519 Employee information and training program; applicability; provision of information to employees; availability of rules and other materials to employees and director.

- Rule 519.**
- (1) An employer shall institute a training and information program for, and assure the participation of, all employees exposed to AN above the action level, all employees whose exposures are maintained below the action level by engineering and work practice controls, and all employees subject to potential skin or eye contact with liquid AN.
 - (2) Training shall be provided at the time of initial assignment or upon institution of the training program and at least once annually thereafter.
 - (3) The employer shall assure that each employee is informed of all of the following:
 - (a) The information contained in appendices A and B of these rules. Appendices A and B are available from the department of consumer and industry services.
 - (b) The quantity, location, manner of use, release, or storage of AN, and the specific nature of operations which could result in exposure to AN, as well as any necessary protective steps.
 - (c) The purpose, proper use, and limitations of respirators and protective clothing.
 - (d) The purpose and a description of the medical surveillance program required by these rules.
 - (e) The emergency procedures developed, as required by R 325.51510.
 - (f) Engineering and work practice controls, their function, and an employee's relationship to these controls.
 - (g) A review of these rules.
 - (4) An employer shall make a copy of these rules and appendices readily available to all affected employees.
 - (5) Upon request, an employer shall provide all materials relating to the employee information and training program to the director.

PART 308. INORGANIC ARSENIC

R 325.51622 Employee information and training program; applicability; provision of information to employees; availability of rules and other materials to employees and director.

- Rule 622.**
- (1) An employer shall institute a training program for all employees who are subject to exposure to inorganic arsenic above the action level, without regard to respirator use, or for whom there is the possibility of skin or eye irritation from inorganic arsenic. An employer shall assure that these employees participate in the training program.
 - (2) The training program shall be provided at the time of initial assignment for employees specified in subrule (1) of this rule and at least annually thereafter.
 - (3) An employer shall assure that each employee is informed of all of the following:
 - (a) The information contained in appendix A to these rules.
 - (b) The quantity, location, and manner of use or storage of arsenic materials, sources of exposure, and the specific nature of operations that could result in exposure to inorganic arsenic, as well as any necessary protective steps.
 - (c) The purpose, proper use, and limitation of respirators.
 - (d) The purpose and a description of the medical surveillance program as required by R 325.51617 to R 325.51621.
 - (e) The engineering controls and work practices that are associated with the employee's job assignment.
 - (f) These rules, which the employer shall review.
 - (4) An employer shall make a copy of these rules and their appendices readily available to all affected employees.
 - (5) Upon request, an employer shall provide, to the director, all materials that relate to the employee information and training program. (4) An employer shall make a copy of these rules and appendices readily available to all affected employees.

PART 309. CADMIUM

R 325.51880 Employee information and training; applicability of subrule (4).

- Rule 30.**
- (1) An employer shall institute a training program for all employees who may be exposed to cadmium, assure employee participation in the program, and maintain a record of the contents of the program. Employee training shall be provided before or at the time of initial assignment to a job that involves potential exposure to cadmium and at least annually thereafter.
 - (2) An employer shall make the training program understandable to the employee and shall ensure that each employee is informed of all of the following:
 - (a) The health hazards associated with cadmium exposure, with special attention to the type of information provided in appendix A.
 - (b) The quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific

- nature of operations that could result in exposure to cadmium, especially exposure above the PEL.
- (c) The engineering controls and work practices associated with the employee's job assignment.
 - (d) The measures employees can take to protect themselves from exposure to cadmium, including modification of smoking and personal hygiene habits, and the specific procedures the employer has implemented to protect employees from exposure to cadmium, such as appropriate work practices, emergency procedures, and the provision of personal protective equipment.
 - (e) The purpose, proper selection, fitting, proper use, and limitations of respirators and protective clothing.
 - (f) The purpose and a description of the medical surveillance program required pursuant to the provisions of R 325.51868 to R 325.51878.
 - (g) The contents of these rules and the appendices to these rules.
 - (h) The employee's right of access to records as provided by the provisions of R 325.3460 to R 325.3471 and R 325.3473.
- (3) An employer shall make a copy of these rules and the appendices to these rules readily available without cost to all affected employees and shall provide a copy if requested. Also, an employer shall provide to the director, upon request, all materials relating to the employee information and training program.
- (4) This subrule applies only to the construction industry. In a multiemployer workplace, an employer who produces, uses, or stores cadmium in a manner that may expose employees of other employers to cadmium shall notify the other employers of the potential hazards in accordance with the provisions of 29 C.F.R. §1926.59(4)(2)(i)-(iii), which is referenced in R 325.51879(1).

R 325.51881 Recordkeeping.

- Rule 31.** (4) With regard to training records, an employer shall certify that employees have been trained by preparing a certification record that includes the identity of the person trained, the signature of the employer or the person who conducted the training, and the date the training was completed. The certification record shall be prepared at the completion of training and shall be maintained on file for 1 year beyond the date of training of that employee.

PART 311. BENZENE

R 325.77110 Communication of benzene hazards to employees.

- Rule 10. (4)** An employer shall provide employees with information and training at the time of their initial assignment to a work area where benzene is present. If exposures are above the action level, then employees shall be provided with information and training at least annually thereafter. The training program shall comply with the hazard communication provisions referenced in subrule (2) of this rule and shall include specific information on benzene for each category of information included in sections 14a to 14m of 1974 PA 154, MCL 408.1014a to 408.1014m. In addition to the information required, pursuant to the hazard communication provisions referenced in subrule (2) of this rule, the employer shall do both of the following:
- (a) Provide employees with an explanation of the contents of this rule, including appendices A and B, which are adopted by reference in R 325.77114, and indicate to employees where copies of these rules are available.
 - (b) Describe the medical surveillance program required under R 325.77109 and explain the information contained in appendix C.

PART 312. 1,3-BUTADIENE (BD)

(I) Communication of BD hazards to employees.

- (1) Hazard communication. The employer shall communicate the hazards associated with BD exposure in accordance with the requirements of the Hazard Communication Standard, 29 CFR 1910.1200, 29 CFR 1915.1200, and 29 CFR 1926.59
- (2) Employee information and training.
 - (i) The employer shall provide all employees exposed to BD with information and training in accordance with the requirements of the Hazard Communication Standard, 29 CFR 1910.1200, 29 CFR 1915.1200, and 29 CFR 1926.59.
 - (ii) The employer shall institute a training program for all employees who are potentially exposed to BD at or above the action level or the STEL, ensure employee participation in the program and maintain a record of the contents of such program.
 - (iii) Training shall be provided prior to or at the time of initial assignment to a job potentially involving exposure to BD at or above the action level or STEL and at least annually thereafter.
 - (iv) The training program shall be conducted in a manner that the employee is able to understand. The employer shall ensure that each employee exposed to BD over the action level or STEL is informed of the following:

- (A) The health hazards associated with BD exposure, and the purpose and a description of the medical screening and surveillance program required by this section;
 - (B) The quantity, location, manner of use, release, and storage of BD and the specific operations that could result in exposure to BD, especially exposures above the PEL or STEL;
 - (C) The engineering controls and work practices associated with the employee's job assignment, and emergency procedures and personal protective equipment;
 - (D) The measures employees can take to protect themselves from exposure to BD.
 - (E) The contents of this standard and its appendices, and
 - (F) The right of each employee exposed to BD at or above the action level or STEL to obtain:
 - (1) Medical examinations as required by paragraph (j) of this section at no cost to the employee;
 - (2) The employee's medical records required to be maintained by paragraph (m)(4) of this section; and
 - (3) All air monitoring results representing the employee's exposure to BD and required to be kept by paragraph (m)(2) of this section.
- (3) Access to information and training materials.**
- (i) The employer shall make a copy of this standard and its appendices readily available without cost to all affected employees and their designated representatives and shall provide a copy if requested.
 - (ii) The employer shall provide to the Assistant Secretary or the Director, or the designated employee representatives, upon request, all materials relating to the employee information and the training program.

PART 313. METHYLENE CHLORIDE (MC)

(I) Employee information and training.

- (1) The employer shall provide information and training for each affected employee prior to or at the time of initial assignment to a job involving potential exposure to MC.
- (2) The employer shall ensure that information and training is presented in a manner that is understandable to the employees.
- (3) In addition to the information required under the Hazard Communication Standard at 29 CFR 1910.1200, 29 CFR 1915.1200, or 29 CFR 1926.59, as appropriate:
 - (i) The employer shall inform each affected employee of the requirements of this section and information available in its appendices, as well as how to access or obtain a copy of it in the workplace;

- (ii) Wherever an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed the action level, the employer shall inform each affected employee of the quantity, location, manner of use, release, and storage of MC and the specific operations in the workplace that could result in exposure to MC, particularly noting where exposures may be above the 8-hour TWA PEL or STEL;
- (4) The employer shall train each affected employee as required under the Hazard Communication standard at 29 CFR 1910.1200, 29 CFR 1915.1200, or 29 CFR 1926.59, as appropriate.
- (5) The employer shall re-train each affected employee as necessary to ensure that each employee exposed above the action level or the STEL maintains the requisite understanding of the principles of safe use and handling of MC **in the workplace.**
- (6) Whenever there are workplace changes, such as modifications of tasks or procedures or the institution of new tasks or procedures, which increase employee exposure, and where those exposures exceed or can reasonably be expected to exceed the action level, the employer shall update the training as necessary to ensure that each affected employee has the requisite proficiency.
- (7) An employer whose employees are exposed to MC at a multi-employer worksite shall notify the other employers with work operations at that site in accordance with the requirements of the Hazard Communication Standard, 29 CFR 1910.1200, 29 CFR 1915.1200, or 29 CFR 1926.59, as appropriate.
- (8) The employer shall provide to the Assistant Secretary or the Director, upon request, all available materials relating to employee information and training.

X. Access To Information

- A. Your employer is required to inform you of the information contained in this Appendix. In addition, your employer must instruct you in the proper work practices for using MC, emergency procedures, and the correct use of protective equipment.

PART 314. COKE OVEN EMISSIONS

R 325.50128 Employee information and training.

- Rule 128.** (1) An employer shall institute a training program for employees who are employed in a regulated area and shall assure their participation.
- (2) The training program shall be provided as of the effective date of these rules for employees who are employed in the regulated area at that time or at the time of initial assignment to a regulated area.
- (3) The training program shall be provided at least annually for all employees who are employed in the regulated area, except that training regarding the occupational safety and health hazards associated with exposure to coke oven emissions and the purpose, proper use, and limitations of respiratory protective devices shall be

provided at least quarterly for the first year after the initiation of the training program.

- (4) The training program shall include informing each employee of all of the following:
 - (a) The information contained in the substance information sheet for coke oven emissions.
 - (b) The purpose, proper use, and limitations of respiratory protective devices required in accordance with Rules 117 to 119.
 - (c) The purpose for and a description of the medical surveillance program required by Rules 123 to 127, including information on the occupational safety and health hazards associated with exposure to coke oven emissions.
 - (d) A review of all written procedures and schedules required under Rules 106 to 116.
 - (e) A review of these rules.

R 325.50129 Access to training materials.

- Rule 129.** (1) An employer shall make a copy of these rules, the substance information sheet, and the air monitoring and medical surveillance guide for coke oven emissions readily available to all persons employed in the regulated area.
- (2) An employer shall provide, upon request, all materials relating to the employee information and training program to the director.

R 325.50136 Availability of rules, information sheets, and guides.

- Rule 136.** (1) A copy of these rules, the substance information sheet, and the air monitoring and medical surveillance guides for coke oven emissions shall be provided to each employer by the Michigan Department of Consumer and Industry Services, P.O. Box 30643, Lansing, Michigan 48909.

PART 432. HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSES (HAZWOPER)

R 325.52109 Training generally.

- Rule 9.** (1) All employees, supervisors, and management personnel who work at a hazardous waste site where cleanup operations are underway shall be trained and have supervised on-the-job field experience as required by this rule, R 325.52110, and R 325.52111 before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances or safety or health hazards. All personnel shall also receive refresher training as required pursuant to the provisions of R 325.52112.

- (2) Employees and supervisors shall not be permitted to participate in field activities until they have been trained at the level required by their job functions and responsibilities.
- (3) Training shall cover all of the following topics:
 - (a) The names of personnel and alternates who are responsible for site safety and health.
 - (b) Safety, health, and other hazards present on the site.
 - (c) Use of personal protective equipment.
 - (d) Work practices which will minimize the risks of hazards.
 - (e) The safe use of engineering controls and equipment on the site.
 - (f) Medical surveillance requirements, including the recognition of symptoms and signs which might indicate overexposure to hazards.
 - (g) The contents of the site-specific safety and health plan required pursuant to the provisions of R 325.52104(6)(h) to (k).
- (4) Employees who may respond to emergency situations at hazardous waste sites shall be trained in the proper response procedures for, and protection from, hazardous exposures.

R 325.52110 Initial training.

- Rule 10.**
- (1) General site workers and supervisory personnel who are assigned to tasks that involve exposure or potential exposure to hazardous substances, health hazards, or safety hazards shall receive the training specified in both of the following provisions:
 - (a) Forty hours of training conducted away from the hazardous waste site.
 - (b) Three days of field experience under the direct supervision of a trained and experienced supervisor.
 - (2) Workers who are on a site only occasionally for a specific and limited task and who are unlikely to be exposed above permissible and published exposure limits shall receive the training specified in both of the following provisions:
 - (a) Twenty-four hours of off-site training.
 - (b) One day of field experience under the direct supervision of a trained and experienced supervisor.
 - (3) Regular site workers who work in areas which have been monitored and fully characterized as indicating that exposures are below permissible exposure limits and

published exposure levels, in areas where respirators are not required, or in areas where the site characterization indicates that health hazards do not exist or that the possibility of an emergency developing does not exist shall receive the training specified in both of the following provisions:

- (a) Twenty-four hours of off-site training.
 - (b) One day of field experience under the direct supervision of a trained and experienced supervisor.
- (4) Workers who have received 24 hours of training, who are covered by the provisions of subrules (2) and (3) of this rule, and who become general site workers or who are required to wear respirators shall receive an additional 16 hours of training and 2 days of supervised field experience to equal the requirements of subrule (1) of this rule.
- (5) Management and supervisory personnel who work on-site shall receive the same amount of training and supervised field experience as their subordinates as specified in subrules (1), (2), and (3) of this rule, plus, at the time of job assignment, not less than 8 additional hours of specialized training on appropriate topics, such as the following:
- (a) Employer's safety and health program.
 - (b) Employee training programs.
 - (c) Personal protective equipment program.
 - (d) Spill containment.
 - (e) Health hazard monitoring procedures and techniques.

R 325.52111 Training qualifications and certification.

- Rule 11.**
- (1) Trainers shall be qualified to instruct employees about the subject matter that is being presented in training. Such trainers shall have satisfactorily completed a training program for teaching the subjects they teach or shall possess the academic credentials and instructional experience necessary for teaching the subjects. Instructions shall demonstrate competent instructional skills and knowledge of the applicable subject matter.
 - (2) Employees and supervisors who have received and successfully completed the training and field experience specified in R 325.52109 and R 325.52110 shall be certified by their instructors or training supervisors as having successfully completed the necessary training. A written certificate shall be given to each person who is certified.

Any person who has not been certified or who does not meet the requirements of R 325.52112(2) shall be prohibited from engaging in hazardous waste operations.

R 325.52112 Refresher and equivalent training.

- Rule 12. **(1)** All employees who are required to be trained pursuant to the provisions of R 325.52109(1) shall also receive 8 hours of refresher training annually on the topics specified in R 325.52109(3) and R 325.52110(5). Refresher training also shall include a critique of the past year's incidents that can serve as training examples for future work situations.
- (2)** An employer who can show, by documentation or certification, that an employee's work experience or training has resulted in training equivalent to the training required by the provisions of R 325.52109 and R 325.52110 shall not be required to provide the initial training requirements specified in R 325.52110 to such employee. However, certified employees or employees with equivalent training who are new to a site shall receive appropriate, site specific training before site entry and have appropriate supervised field experience at the new site. Equivalent training includes any academic training or the training that existing employees might have already received from actual hazardous waste site work experience.

R 325.52129 Operations at treatment, storage, and disposal (TSD) facilities; establishment of written safety and health program, hazard communication program, medical surveillance program, decontamination procedures, procedures for introduction of new and innovative equipment, procedures for handling drums or containers, training program, and emergency response program.

- Rule 29. **(1)** All provisions of this rule apply to employers who conduct operations at treatment, storage, and disposal (TSD) facilities specified in R 325.52102(1)(d), except for employers that may be exempted in accordance with the provisions of R 325.52102(4)(a) to (c).
- (8)** An employer shall develop and implement, in accordance with all of the following provisions, a training program, which is part of the employer's health and safety program, for employees who are exposed to health hazards or hazardous substances of TSD operations to enable the employees to perform their assigned duties and functions in a safe and healthy manner so as not to endanger themselves or other employees:

- (a) The initial training program of new employees shall be a program of 24 hours of training. A certificate of such training shall be issued to each employee who successfully completes this training.
 - (b) Initial training need not be provided for current employees for whom it can be shown that their previous work experience or training is equivalent to the training requirement of subdivision (a) of this subrule.
 - (c) All employees shall be given 8 hours of refresher training annually.
 - (d) Trainers who provide the initial training specified in subdivision (a) of this subrule shall have satisfactorily completed a program for teaching the subjects they teach or shall have academic credentials and instruction experience to demonstrate a satisfactory degree of competency in the subjects they teach.
- (9) An employer shall develop and implement an emergency response program in accordance with all of the following provisions:
- (a) An emergency response plan shall be developed and implemented. The emergency response plan need not duplicate any of the subjects fully addressed in the employer's contingency planning required by permits, such as those issued by the United States environmental protection agency, if the contingency plan is made part of the emergency response plan. The emergency response plan shall be a written portion of the safety and health program required by subrule (2) of this rule.
 - (b) An employer who will evacuate its employees from the worksite when an emergency occurs and who does not permit any of its employees to assist in handling the emergency is exempt from the requirements of this subrule if the employer provides an emergency action plan in accordance with the provisions of general industry safety standard Part 6. fire exits, R 408.10601 et seq. and construction safety standard Part 18. fire protection and prevention, R 408.41801 et seq. of the Michigan Administrative Code as required in R 325.52125(1).
 - (c) The emergency response plan shall address all of the following topics to the extent that they are not addressed in any specific program required in this rule:
 - (i) Preemergency planning and coordination with outside parties.
 - (ii) Personnel roles, lines of authority, and communication.
 - (iii) Emergency recognition and prevention.

- (iv) Safe distances and places of refuge.
 - (v) Site security and control.
 - (vi) Evacuation routes and procedures.
 - (vii) Decontamination procedures.
 - (viii) Emergency medical treatment and first aid.
 - (ix) Emergency alerting and response procedures.
 - (x) Critique of response and follow-up.
 - (xi) PPE and emergency equipment.
- (d) An employer shall provide and complete training for emergency response employees before they become involved in actual emergency operations. Such training shall include all of the following:
- (i) Elements of the emergency response plan.
 - (ii) Standard operating procedures for emergency response operations.
 - (iii) Personal protective equipment available and use and limitations of each.
 - (iv) Procedures for handling emergency incidents.
 - (v) Both exceptions to the training requirements of these subdivisions are as follows:
 - (A) An employer need not train all employees to the degree specified if the employer divides the work force so that a sufficient number of employees who are responsible for controlling emergencies have the training specified and so that all other employees who might initially respond to an emergency incident have sufficient awareness training to recognize that an emergency response situation exists and that they are instructed in that case to summon the fully trained employees and not attempt control activities for which they are not trained.
 - (B) An employer need not train all employees to the degree specified if arrangements have been made in advance for an outside, fully trained emergency response team to respond in a reasonable period and all employees who might initially respond to the incident have sufficient awareness training to recognize that an emergency response situation exists and they have been instructed to call the designated outside, fully trained emergency response team for assistance.
 - (vi) Employee members of TSD facility emergency response organizations shall be trained to a level of competence in the recognition of health and safety hazards to protect themselves and other employees. This includes training in all of the following areas:

- (A) The methods used to minimize the risk from safety and health hazards.
 - (B) The safe use of control equipment.
 - (C) Selection and use of appropriate PPE.
 - (D) Safe operating procedures to be used at the incident scene.
 - (E) Techniques of coordination with other employees to minimize risks.
 - (F) Appropriate response to overexposure to health hazards or injury to themselves or others.
 - (G) Recognition of subsequent symptoms which may result from overexposure.
- (vii) An employer shall certify that each covered employee has attended and successfully completed the training required in this subdivision or shall certify the employee's competency at least yearly. The method used to demonstrate competency for certification of training shall be recorded and maintained by the employer.
- (e) All of the following provisions pertain to the procedures for handling emergency incidents:
- (i) In addition to the elements for the emergency response plan required by subdivision (c) of this subrule, the following elements shall be included in emergency response plans to the extent that they do not repeat any information already contained in the emergency response plan:
 - (A) Site topography, layout, and prevailing weather conditions.
 - (B) Procedures for reporting incidents to local, state, and federal governmental agencies.
 - (ii) The emergency response plan shall be compatible and integrated with the disaster, fire, and emergency response plans of local, state, and federal agencies.
 - (iii) The emergency response plan shall be rehearsed regularly as part of the overall training program for site operations.

R 325.52133 Emergency response training.

Rule 33. (1) Employees who participate or are expected to participate in emergency response shall be trained in accordance with the requirements of this rule. Training shall be based on the duties and functions to be performed by each responder of an emergency response organization. The skill and knowledge levels required for

all new responders, those hired after the effective date of these rules, shall be conveyed to them through training before they are permitted to take part in actual emergency operations on an incident.

- (2) First responders at the awareness level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. They would take no further action beyond notifying the authorities of the release. First responders at the awareness level shall have sufficient training or have had sufficient experience to objectively demonstrate competency in all of the following areas:
- (a) Understanding what hazardous substances are and the risks associated with them in an incident.
 - (b) Understanding the potential outcomes associated with an emergency created when hazardous substances are present.
 - (c) The ability to recognize the presence of hazardous substances in an emergency.
 - (d) The ability to identify the hazardous substances in an emergency, if possible.
 - (e) Understanding the role of the first responder awareness individual as specified in the employer's emergency response plan, including site security and control, and as specified in the United States department of transportation's emergency response guidebook.
 - (f) The ability to realize the need for additional resources and to make appropriate notifications to the communication center.
- (3) First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. These individuals are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. First responders at the operational level shall have received not less than 8 hours of training or have had sufficient experience to objectively demonstrate competency in all of the following areas in addition to those listed for the awareness level in subrule (2) of this rule:
- (a) Knowledge of the basic hazard and risk assessment techniques.

- (b) Knowing how to select and use proper personal protective equipment provided to the first responder operational level.
 - (c) Understanding basic hazardous materials terms.
 - (d) Knowing how to perform basic control, containment, and confinement operations within the capabilities of the resources and personal protective equipment available to their unit.
 - (e) Knowing how to implement basic decontamination procedures.
 - (f) Understanding the relevant standard operating procedures and termination procedures.
The employer shall certify demonstrated competency in the areas specified in this subrule.
- (4)** Hazardous materials technicians are individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release in order to plug, patch, or otherwise stop the release of a hazardous substance. Hazardous materials technicians shall have received not less than 24 hours of training equal to the first responder operations level of subrule (3) of this rule and, in addition, be competent in all of the following areas: (a) Knowing how to implement the employer's emergency response plan.
- (b) Knowing the classification, identification, and verification of known and unknown materials by using field survey instruments and equipment.
 - (c) Being able to function within an assigned role in the incident command system.
 - (d) Knowing how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician.
 - (e) Understanding hazard and risk assessment techniques.
 - (f) Being able to perform advance control, containment, and confinement operations within the capabilities of the resources and personal protective equipment available to the unit.
 - (g) Understanding and implementing decontamination procedures.
 - (h) Understanding termination procedures.
 - (i) Understanding basic chemical and toxicological terminology and behavior.
The employer shall certify competency in the areas specified in this subrule.

- (5) Hazardous materials specialists are individuals who respond with, and provide support to, hazardous materials technicians. Their duties parallel those of the hazardous materials technician; however, those duties require a more directed or specific knowledge of the various substances they may be called upon to contain. The hazardous materials specialist would also act as the site liaison with federal, state, local, and other government authorities concerning site activities. Hazardous materials specialists shall have received not less than 24 hours of training equal to the technician level of subrule (4) of this rule and, in addition, be competent in all of the following areas:
- (a) Knowing how to implement the local emergency response plan.
 - (b) Understanding the classification, identification, and verification of known and unknown materials by using advanced survey instruments and equipment.
 - (c) Being aware of the state emergency response plan.
 - (d) Being able to select and use proper specialized chemical personal protective equipment provided to the hazardous materials specialist.
 - (e) Understanding in-depth hazard and risk techniques.
 - (f) Being able to perform specialized control, containment, and confinement operations within the capabilities of the resources and personal protective equipment available.
 - (g) Being able to determine and implement decontamination procedures.
 - (h) Having the ability to develop a site safety and control plan.
 - (i) Understanding chemical, radiological, and toxicological terminology and behavior.
- (6) On scene incident commanders who will assume control of the incident scene beyond the first responder awareness level shall receive not less than 24 hours of training equal to the first responder operations level of subrule (3) of this rule and, in addition, be competent in all of the following areas:
- (a) Knowing and being able to implement the employer's incident command system.
 - (b) Knowing how to implement the employer's emergency response plan.
 - (c) Knowing and understanding the hazards and risks associated with employees who work in chemical protective clothing.
 - (d) Knowing how to implement the local emergency response plan.
 - (e) Being aware of the state emergency response plan

- and the federal regional response team.
- (f) Knowing and understanding the importance of decontamination procedures.
An employer shall certify competency in the areas specified in this subrule.
- (7) Trainers who teach any of the training subjects specified in subrules (1) to (6) of this rule shall have satisfactorily completed a training course for teaching the subjects they are expected to teach, such as the courses offered by the United States national fire academy, or they shall have the training or academic credentials and instructional experience necessary to demonstrate competent instructional skills and a satisfactory command of the subject matter of the courses they are to teach.
- (8) Both of the following provisions pertain to refresher training:
 - (a) Those employees who are trained in accordance with the provisions of this rule shall receive annual refresher training of sufficient content and duration to remain competent with respect to their duties and functions or shall demonstrate competency in those areas at least yearly.
 - (b) A statement shall be made of the training or competency and, if a statement of competency is made, an employer shall keep a record of the methodology used to demonstrate competency.

R 325.52135 Postemergency response operations.

Rule 35.

- (b) Where the cleanup is done on plant property using plant or workplace employees, such employees shall have completed the training requirements of all of the following:
 - (i) The provisions of general industry safety standard Part 6. fire exits, R 408.10601 et seq. and construction safety standard Part 18. fire protection and prevention, R 408.41801 et seq. of the Michigan Administrative Code as required in R 325.52125(1).
 - (ii) The provisions of 29 C.F.R. §1910.1200(h).
 - (iii) The provisions of the respiratory protection standard, R 325.60051 et seq. of the Michigan Administrative Code.
 - (iv) Other appropriate safety and health training appropriate to the tasks.
- (2) All equipment that is to be used in the cleanup of the site of an incident shall be in serviceable condition and shall have been inspected before use.

PART 451. RESPIRATORY PROTECTION (1910.134)

(c) Respiratory protection program.

- (1) In any workplace where respirators are *necessary* to protect the health of the employee or whenever respirators are *required* by the employer, the employer shall establish and implement a written respiratory protection program with worksite-specific procedures.
 - (vii) Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations;
 - (viii) Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance; and
 - (ix) Procedures for regularly evaluating the effectiveness of the program.

- (2) Where respirator use is ***not required***:
 - (i) An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard. If the employer determines that any voluntary respirator use is permissible, the employer shall provide the respirator users with the information contained in Appendix D to this section (“Information for Employees Using Respirators When Not Required Under the Standard”); and
 - (ii) In addition, the employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering face pieces (dust masks).

(k) Training and information.

This paragraph requires the employer to provide effective training to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually, and more often if necessary. This paragraph also requires the employer to provide the basic information on respirators in Appendix D of this section to employees who wear respirators when not required by this section or by the employer to do so.

- (1) The employer shall ensure that each employee can demonstrate knowledge of at least the following:
 - (i) Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;

- (ii) What the limitations and capabilities of the respirator are;
 - (iii) How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;
 - (iv) How to inspect, put on and remove, use, and check the seals of the respirator;
 - (v) What the procedures are for maintenance and storage of the respirator;
 - (vi) How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
 - (vii) The general requirements of this section.
- (2) The training shall be conducted in a manner that is understandable to the employee.
- (3) The employer shall provide the training prior to requiring the employee to use a respirator in the workplace.
- (4) An employer who is able to demonstrate that a new employee has received training within the last 12 months that addresses the elements specified in paragraph (k)(1)(i) through (vii) is not required to repeat such training provided that, as required by paragraph (k)(1), the employee can demonstrate knowledge of those element(s). Previous training not repeated initially by the employer must be provided no later than 12 months from the date of the previous training.
- (5) Retraining shall be administered annually, and when the following situations occur:
- (i) Changes in the workplace or the type of respirator render previous training obsolete;
 - (ii) Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
 - (iii) Any other situation arises in which retraining appears necessary to ensure safe respirator use.
- (6) The basic advisory information on respirators, as presented in Appendix D of this section, shall be provided by the employer in any written or oral format, to employees who wear respirators when such use is not required by this section or by the employer.

PART 470. Employee Medical Records and Trade Secrets

R 325.3473 Notification of employee exposure information by employer.

- Rule 23.** Upon an employee's first entering into employment, and at least annually thereafter, an employer shall inform employees who are exposed to toxic substances or harmful physical agents of all of the following:
- (a) The existence, location, and availability of any record to which these rules apply.

- (b) The person who is responsible for maintaining and providing access to records.
- (c) The employee's right of access to the records.

PART 602. ASBESTOS

(k) Communication of hazards.

- (2) Duties of building and facility owners. (i) Before work subject to this standard is begun, building and facility owners shall determine the presence, location and quantity of ACM, and/or PACM at the work site pursuant to paragraph (k)(1) of this section.
- (ii) Building and/or facility owners shall notify the following persons of the presence, location and quantity of ACM or PACM, at the work sites in their buildings and facilities. Notification either shall be in writing, or shall consist of a personal communication between the owner and the person to whom notification must be given or their authorized representatives:
 - (A) Prospective employers applying or bidding for work whose employees reasonably can be expected to work in or adjacent to areas containing such material;
 - (B) Employees of the owner who will work in or adjacent to areas containing such material;
 - (C) On multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing such materials;
 - (D) Tenants who will occupy areas containing such material.

(9) Employee Information and Training.

- (i) The employer shall, at no cost to the employee, institute a training program for all employees who are likely to be exposed in excess of a PEL and for all employees who perform Class I through IV asbestos operations, and shall ensure their participation in the program.
- (ii) Training shall be provided prior to or at the time of initial assignment and at least annually thereafter.
- (iii) Training for Class I operations and for Class II operations that require the use of critical barriers (or equivalent isolation methods) and/or negative pressure enclosures under this section shall be the equivalent in curriculum, training method and length to the EPA Model Accreditation Plan (MAP) asbestos abatement workers training (40 CFR Part 763, subpart E, appendix C).
- (iv) Training for other Class II work.
 - (A) For work with asbestos containing roofing

materials, flooring materials, siding materials, ceiling tiles, or transite panels, training shall include at a minimum all the elements included in paragraph (k)(9)(viii) of this section and in addition, the specific work practices and engineering controls set forth in paragraph (g) of this section which specifically relate to that category. Such course shall include “hands-on” training and shall take at least 8 hours.

- (B) An employee who works with more than one of the categories of material specified in paragraph (k)(9)(iv)(A) of this section shall receive training in the work practices applicable to each category of material that the employee removes and each removal method that the employee uses.
- (C) For Class II operations not involving the categories of material specified in paragraph (k)(9)(iv)(A) of this section, training shall be provided which shall include at a minimum all the elements included in paragraph (k)(9)(viii) of this section and in addition, the specific work practices and engineering controls set forth in paragraph (g) of this section which specifically relate to the category of material being removed, and shall include “hands-on” training in the work practices applicable to each category of material that the employee removes and each removal method that the employee uses.

- (v) Training for Class III employees shall be consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2). Such a course shall also include “hands-on” training and shall take at least 16 hours. Exception: For Class III operations for which the competent person determines that the EPA curriculum does not adequately cover the training needed to perform that activity, training shall include as a minimum all the elements included in paragraph (k)(9)(viii) of this section and in addition, the specific work practices and engineering controls set forth in paragraph (g) of this section which specifically relate to that activity, and shall include “hands-on” training in the work practices applicable to each category of material that the employee disturbs.

- (vi) Training for employees performing Class IV operations shall be consistent with EPA requirements for training of local education agency maintenance and

custodial staff as set forth at 40 CFR 763.92(a)(1). Such a course shall include available information concerning the locations of thermal system insulation and surfacing ACM/PACM, and asbestos-containing flooring material, or flooring material where the absence of asbestos has not yet been certified; and instruction in recognition of damage, deterioration, and delamination of asbestos containing building materials. Such course shall take at least 2 hours.

- (vii) Training for employees who are likely to be exposed in excess of the PEL and who are not otherwise required to be trained under paragraph (k)(9)(iii) through
- (vi) of this section, shall meet the requirements of paragraph (k)(9)(viii) of this section.
- (viii) The training program shall be conducted in a manner that the employee is able to understand. In addition to the content required by provisions in paragraphs (k)(9)(iii) through (vi) of this section, the employer shall ensure that each such employee is informed of the following:
 - (A) Methods of recognizing asbestos, including the requirement in paragraph (k)(1) of this section to presume that certain building materials contain asbestos;
 - (B) The health effects associated with asbestos exposure;
 - (C) The relationship between smoking and asbestos in producing lung cancer;
 - (D) The nature of operations that could result in exposure to asbestos, the importance of necessary protective controls to minimize exposure including, as applicable, engineering controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures, and waste disposal procedures, and any necessary instruction in the use of these controls and procedures; where Class III and IV work will be or is performed, the contents of EPA 20T-2003, "Managing Asbestos In-Place" July 1990 or its equivalent in content;
 - (E) The purpose, proper use, fitting instructions, and limitations of respirators as required by 29 CFR 1910.134;
 - (F) The appropriate work practices for performing the asbestos job;
 - (G) Medical surveillance program requirements;
 - (H) The content of this standard including appendices;
 - (I) The names, addresses and phone numbers of public health organizations which provide information,

materials and/or conduct programs concerning smoking cessation. The employer may distribute the list of such organizations contained in Appendix J to this section, to comply with this requirement; and

- (J) The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.

(10) Access to training materials.

- (i) The employer shall make readily available to affected employees without cost, written materials relating to the employee training program, including a copy of this regulation.

PART 603. LEAD EXPOSURE IN CONSTRUCTION

(I) Employee information and training

(1) General.

- (i) The employer shall communicate information concerning lead hazards according to the requirements of MIOSHA' s Hazard Communication for the construction industry, Part 603, including but not limited to the requirements concerning warning signs and labels, material safety data sheets (MSDS), and employee information and training. In addition, employers shall comply with the following requirements:
 - (ii) For all employees who are subject to exposure to lead at or above the action level on any day or who are subject to exposure to lead compounds which may cause skin or eye irritation (e.g., lead arsenate, lead azide), the program in accordance with paragraph (1)(2) of this section and assure employee participation.
 - (iii) The employer shall provide the training program as initial training prior to the time of job assignment or prior to the start up date for this requirement, whichever comes last.
 - (iv) The employer shall also provide the training program at least annually for each employee who is subject to lead exposure at or above the action level on any day.
- (2) Training program.** The employer shall assure that each employee is trained in the following:
- (i) The content of this standard and its appendices;
 - (ii) The specific nature of the operations which could result in exposure to lead above the action level;
 - (iii) The purpose , proper selection, fitting, use, and limitations of respirators;
 - (iv) The purpose and a description of the medical surveillance

program, and the medical record removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for employees who are pregnant);

- (v) The engineering controls and work practices associated with the employees job assignment including training of employees to follow relevant good work practices described in Appendix B of this section;
 - (vi) The contents of any compliance plan in effect;
 - (vii) Instructions to employees that chelating agents could not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician; and
 - (viii) The employees right of access to record under 29 CFR 1910.20.
- (3) Access to information and training materials.
- (i) The employer shall make readily available to all effected employees a copy of this standard and its appendices.
 - (ii) The employer shall provide upon request, all materials relating to the employee information and training program to affected employee and their designated representative, and to the Assistant Secretary and the Director.

PART 604. CHROMIUM (VI) IN CONSTRUCTION (29 CFR 1926.1126)

(j) Communication of chromium (VI) hazards to employees.

(1) General. In addition to the requirements of the Hazard Communication Standard, 29 CFR 1910.1200, employers shall comply with the following requirements.

(2) Employee information and training.

- (i) The employer shall ensure that each employee can demonstrate knowledge of at least the following:
 - (A) The contents of this section; and
 - (B) The purpose and a description of the medical surveillance program required by paragraph (i) of this section.
- (ii) The employer shall make a copy of this section readily available without cost to all affected employees.

PART 621. HEALTH HAZARD CONTROL FOR SPECIFIC EQUIPMENT AND OPERATIONS FOR CONSTRUCTION

(11) Power transmission and distribution.

- (ii) Emergency procedures and first aid. The employer shall provide training or require that his employees are knowledgeable and proficient in: [1926.950(e)(1)]

- (A) Procedures involving emergency situations, and [1926.950(e)(1)(i)]
- (B) First aid fundamentals including resuscitation. [1926.950(e)(1)(ii)]
- (C) In lieu of subdivision (ii) of this paragraph, the employer may comply with the provisions of Rule 6610(3) regarding first aid requirements. [1926.950(e)(2)]

(12) Blasting and use of explosives.

- (b) The employer shall permit only authorized and qualified persons to use explosives. [1926.900(a)]

PART 622. CONTROL MEASURES FOR HAZARDOUS ATMOSPHERES IN CONFINED SPACES FOR CONSTRUCTION

Rule 6402 Control Measures for Hazardous Atmospheres in Confined Spaces.

(1) Confined spaces -- General requirements.

- (b) All employees required to enter into confined or enclosed spaces shall be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas. [1926.21(b)(6)(i)]

PART 665. UNDERGROUND CONSTRUCTION, CAISSONS, COFFERDAMS, AND COMPRESSED AIR (Also, see Part 14.)

29 C.F.R. §1926.800 Underground construction.

(d) Safety instruction.*

*These issues are covered by the Construction Safety Standard Part 14. Tunnels, Shafts, Caissons, and Cofferdams

(e) Notification.

- (1) Oncoming shifts shall be informed of any hazardous occurrences or conditions that have affected or might affect employee safety, including liberation of gas, equipment failures, earth or rock slides, cave-ins, floodings, fires or explosions.

(j) Air quality and monitoring.

- (v) (C) Employees shall be informed when a concentration of 10 ppm hydrogen sulfide is exceeded.

29 C.F.R. §1926.803 Compressed air.

(a) General provisions.

- (2) Every employee shall be instructed in the rules and regulation which concern his safety or the safety of others.

Rule 680. NOISE EXPOSURE FOR CONSTRUCTION

R 325.60131 Noise exposure; conservation program.

Rule 1.

- (a) An employer shall ensure that ear protective devices inserted in the ear are fitted or determined individually by competent persons. [1926.101(b)]
- (b) An employer shall ensure that plain cotton is not used as a protective device. [1926.101(c)]

PART 681. RADIATION IN CONSTRUCTION: IONIZING AND NONIONIZING

R 325.68101 Ionizing radiation.

Rule 1.

- (2) Any activity which involves the use of radioactive materials or X-rays, whether or not under license from the Nuclear Regulatory Commission, shall be performed by competent persons specially trained in the proper and safe operation of such equipment. In the case of materials used under Commission license, only persons actually licensed, or competent persons under direction and supervision of the licensee, shall perform such work.

R 325.68102 Nonionizing radiation; laser equipment.

Rule 2.

- (1) Only qualified and trained employees shall be assigned to install, adjust, and operate laser equipment.
- (2) Proof of qualification of the laser equipment operator shall be available and in possession of the operator at all times.

GENERAL INDUSTRY SAFETY STANDARDS

**ADOPTED BY
REFERENCE**

**FOR CONSTRUCTION
OPERATIONS**

General Industry Safety Standards Adopted by Reference for Construction Operations

PART 12. WELDING AND CUTTING (General Industry)

Per-Task Training

- R. 1211 (1)** An employer shall do all of the following:
- (a) Give each employee training or a test before allowing him or her to use equipment for arc and gas welding and cutting.
- R. 1211 (2)** An employee shall comply with all of the following:
- (a) Use welding and cutting equipment as trained and authorized.
- R. 1211 (3)** An employee in charge of the operation of oxygen or fuel-gas supply equipment shall be instructed and judged competent by the employer for this work before being left in charge. Rules and instruction covering the operation and maintenance of oxygen or fuel-gas supply equipment, including generators and oxygen or fuel-gas distribution piping systems, shall be readily available.

Rescue Operations

- R. 1213 (5)** An employee who is training in rescue procedures, and with such equipment as is necessary to effect a rescue, if needed, shall be stationed outside the confined space during welding and cutting operations.

Refilling Cylinders

- R. 1224 (6)** Only the owner of the cylinder, if the owner is qualified, or a person trained, qualified, and authorized by the owner, shall refill a cylinder.

Repairs of Regulators

- R. 1254 (c)** Regulators shall be repaired by authorized and trained personnel, or be returned to the supplier for calibration or repairs.

Cutting and Welding

- R. 1261** **(1)** Cutting and welding shall be done in designated areas free of flammable or conditions favorable to fire or explosion. If it is not practical to perform the work in a designated area, a person shall be assigned responsibility for fire safety of the job and shall take the following action after inspecting the job site and designation precautions to be taken:
- (b)** Have appropriate portable fire Extinguishers on hand for use by trained employees.

PART 49, SLINGS (General Industry)

Definitions

- R. 4905** **(1)** Designated person means to be selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

Inspections

- R. 4923** **(3)** The thorough inspection of an alloy steel chain sling shall be performed by an employee designated by the employer, and shall include a thorough inspection for wear, defective welds, deformation, and increase in length beyond acceptable limits established in this part. Where such defects or deterioration are present, the sling shall be immediately removed from service.



Michigan Occupational Safety & Health Administration
Consultation Education & Training Division
7150 Harris Drive, P.O. Box 30643
Lansing, Michigan 48909-8143

For further information or to request consultation, education and training services
call (517) 322-1809
or

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