The general duty clause. Section 5(a)(1)

Each employer shall furnish a place of employment free of recognizable hazards that are likely to cause serious physical harm.

Violations

- Exposed employee
- Serious hazard
- Employer knowledge
- Feasible method to abate hazard

Effective Safety & Health Programs

- Management Commitment
- Employee Involvement.
- Worksite Analysis
- Hazard Prevention and Controls
- Training and Understanding
- Continuous Improvement

Do you have an effective safety and health program?

- Do you have clear rules and expectations?
- Do employees understand the rules?
- Do you have an effective process to discover deviations from expectations?
- Do you have an effective enforcement program?

Personal Protective Equipment

- **Hazard assessment**
- **Ensure use**
- **Training**
- **Records**

Respiratory Protection

- Written program
- Selection - exposure
- Medical evaluation
- Fit test
- Training

Hazard Communication

- Written Program
  - Non-routine tasks
  - Contractors
- MSDS
- Labels on containers
  - Identity
  - Hazard warning
- Training
  - Health hazards

Employee training

- Methods and observations used to detect a release of a hazardous chemical (monitoring, odor, visual appearance)
- The physical and health hazards of chemicals in the work area.
- The measures employees can take to protect themselves (specific procedures, work practices, emergency procedures, and ppe)
- The details of the hazard communication program (labeling, MSDS’s, and how to obtain and use the information.

Lockout

- Program
- Machine specific procedures
- Isolation equipment
- Annual review
- Training

Machine specific procedure

- Location
  - Switch number one on electrical panel #302
- Method
  - Attach circuit breaker locking device lock
- Verification
  - Push start button on machine, look for lights or movement, use electrical test device

Confined space entry

- **Identification of all confined spaces**
- **Prevention of entry**
- **Permit system**
- **Written Program**
- **Rescue**

Review of Rescue Service

- **1910.146(k)(1)** An employer who designates rescue and emergency services,

- **1910.146(k)(1)(i)** Evaluate a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified;

- **1910.146(k)(2)(iv)** Ensure that affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue

Electrical hazards

- Flexible cords used in lieu of fixed wiring
- Inspection for damage prior to use.

Ground-Fault Circuit Interrupter

- Detects current leakage
- The GFCI shuts off electricity flow in as little as 1/40 of a second.

Safety-related work practices 1910.333(a)

- Hazard: arc flash, arc blast & shock
- Work performed on or near energized circuits
  - Testing, troubleshooting, measuring voltage
- Conduct a flash hazard analysis
  - Ensure use of proper electrical protective equipment in compliance with NFPA 70e
- Establish a flash protection boundary

Powered Industrial vehicles

- Inspection prior to use
- Removed from service
- Training on type
- Evaluation

Platforms for elevating personnel

- Suitable guardrails
  - 42 inches top rail, midrail and toeboard
- Platform secured
- Platform construction

Fall hazards
Open-sided Work Areas
1910.23

Every open-sided
floor or platform 4
feet or more
above adjacent
floor or ground…

Ladders – Rules to Protect
1910.25-27 & 1926.1050

- Inspect regularly
- Remove defective ladders
- Extend ladder 3 feet above access/roof
- Secured from movement
- 10 feet from electrical lines

Flammable/combustible liquid storage

- **1910.106(e)(2)(ii)(b)** The quantity of liquid that may be located outside of an inside storage room or storage cabinet in a building or in any one fire area of a building shall not exceed:

  - **1910.106(e)(2)(ii)(b)(1)** 25 gallons of Class IA liquids in containers
  - **1910.106(e)(2)(ii)(b)(2)** 120 gallons of Class IB, IC, II, or III liquids in containers
  - **1910.106(e)(2)(ii)(b)(3)** 660 gallons of Class IB, IC, II, or III liquids in a single portable tank.

Exits

- Accessible
- 28 inches
- Marked as an “Exit” or actual character

Medical and First Aid

- The employer shall ensure the ready availability of medical personnel for advice and consultation on matters of plant health.

- In the absence of an infirmary, clinic, or hospital in near proximity used for the treatment of injured employees, a person shall be adequately trained to render first aid.

Medical and First Aid

- Adequate first aid supplies shall be readily available.

- Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

Eyewash

- Accessible
- Function
  - address both eyes
  - provide water for 15 minutes.
- Cannot present a hazard
  - bacteria growth
- Within 10 seconds or 50 ft.

Bottled eyewashes

- Acanthamoebae
  - May cause infections & encephalitis

- Zee Medical Recall
  - may contain B. cepacia, associated with serious lung infections in cystic fibrosis patients.

Housekeeping – fluid on floor

- **1910.22(a)(2)** The floor of every workroom shall be maintained in a clean and, so far as possible, a dry condition.

- Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places should be provided where practicable.

Formaldehyde

- Identification
- Air monitoring
- Training

Inspect your fire extinguishers

- **1910.157(e)(1)** The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.

- **1910.157(e)(2)** Portable extinguishers or hose used in lieu thereof under paragraph (d)(3) of this section shall be visually inspected monthly.

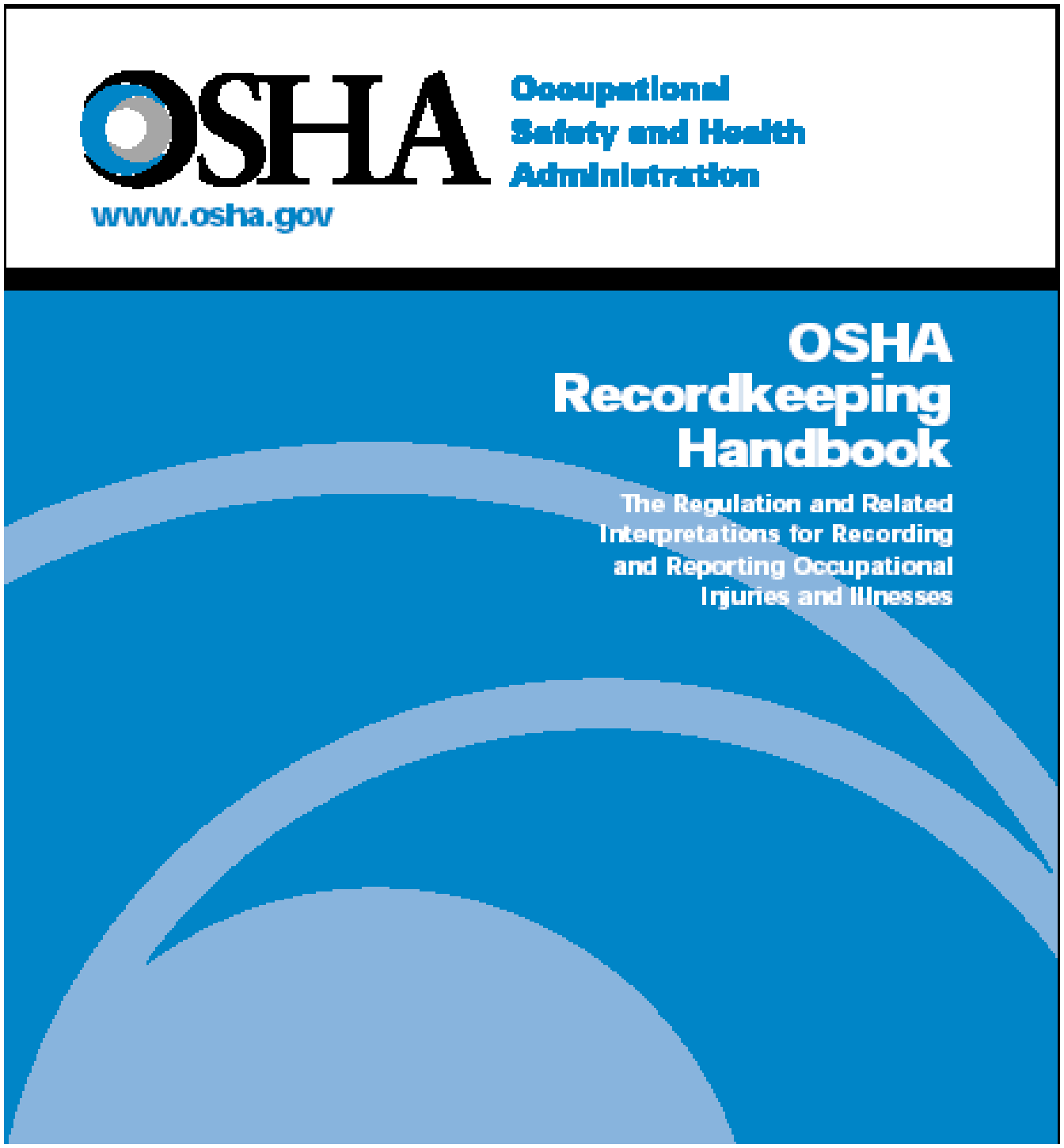
Fire extinguisher training

- **1910.157(g)(1)** Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

Hearing conservation program

- Monitoring
- Engineering controls
- Audiometric test
- Hearing protection
- Training

Compressed gas cylinders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The Regulation and Related
Interpretations for Recording
and Reporting Occupational
Injuries and Illnesses

Where do you find Hexavalent Chromium?

- Electroplating
- Welding on stainless steel or Cr(VI) painted surfaces
- Painting
  - Aerospace
  - Auto body repair
- Chromate pigment and chemical production
- Glass manufacturing
- Plastic colorant production
- Construction
  - Traffic line painting
  - Refractory brick restoration
  - Paint removal from bridges

Welding

- Stick welding: High likelihood of overexposure to Cr VI
  - 50% of total Cr produced is Cr VI
- TIG generates lower fume amounts
- MIG has lower fume amounts
  - 4% of total Cr produced from MIG is Cr VI

- MIG and TIG
  - @ 800 degrees C *above action level*
  - @ 500 degrees C levels fairly low

- Conclusion: Switch from stick to MIG if possible

Effective Safety & Health Programs

- Management Commitment
- Employee Involvement.
- Worksite Analysis
- Hazard Prevention and Controls.
- Training and Understanding
- Continuous Improvement

Please manage safety

Brian Bothast

Team Leader

Peoria OSHA Office

2918 Willow Knolls Rd.

Peoria, IL. 61614

(309)589-7033

bothast.brian@dol.gov

www.osha.gov