CORE ELEMENTS of a SUCCESSFUL SAFETY PROGRAM

Putting the Pieces Together
WWOA

Core Elements of a Successful Safety Program

John D. Krueger
Senior Health and Safety Scientist
WDSPS Standard

What does the WDSPS Say?

SPS 332.203 Safety and health program.

• Basic requirement. Each employer shall develop and implement a safety and health program that describes the procedures, methods, processes and practices used to manage workplace safety and health. The program shall include, but not be limited to, elements for hazard identification and assessment, hazard prevention and control, and information and training.

• Contact person. The employer shall designate an employee who the department can contact regarding the safety and health program.
1. Fall Protection
2. Hazard Communication
3. Scaffolding
4. Respiratory Protection
5. Lockout/Tagout
6. Powered Industrial Trucks
7. Ladders
8. Machine Guarding
9. Electrical – Wiring Methods
10. Electrical – General Requirements
Top 10 “Serious” Violations in 2016

<table>
<thead>
<tr>
<th>Standard</th>
<th>Total Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fall Protection (1926.501)</td>
<td>5,635</td>
</tr>
<tr>
<td>2. Hazard Communication (1926.1200)</td>
<td>3,544</td>
</tr>
<tr>
<td>4. Lockout/Tagout (1910.147)</td>
<td>3,414</td>
</tr>
<tr>
<td>5. Respiratory Protection (1910.134)</td>
<td>2,421</td>
</tr>
<tr>
<td>6. Ladders (1926.1053)</td>
<td>2,365</td>
</tr>
<tr>
<td>7. Machine Guarding (1910.212)</td>
<td>2,147</td>
</tr>
<tr>
<td>8. Powered Industrial Trucks (1910.178)</td>
<td>2,043</td>
</tr>
<tr>
<td>10. Fall Protection Training (1926.503)</td>
<td>1,285</td>
</tr>
</tbody>
</table>
# Top 10 "willful" violations, fiscal year 2016

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>TOTAL VIOLATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Protection (1926.501)</td>
<td>173</td>
</tr>
<tr>
<td>Lockout/Tagout (1910.147)</td>
<td>114</td>
</tr>
<tr>
<td>Lead (1910.1025)</td>
<td>52</td>
</tr>
<tr>
<td>Excavations (1926.652)</td>
<td>49</td>
</tr>
<tr>
<td>Mechanical Power Presses (1910.217)</td>
<td>44</td>
</tr>
<tr>
<td>Scaffolding (1926.451)</td>
<td>40</td>
</tr>
<tr>
<td>Machine Guarding (1910.212)</td>
<td>19</td>
</tr>
<tr>
<td>Specific Excavation Requirements (1926.651)</td>
<td>19</td>
</tr>
<tr>
<td>General Duty Clause 5(a)(1)</td>
<td>16</td>
</tr>
<tr>
<td>Grain Handling (1910.272), Welding, Cutting and Heating (1915.53)</td>
<td>14</td>
</tr>
</tbody>
</table>
# 2016 Region V – MOST Frequently Cited Violations

1. Machine Guarding, (general)
2. Hazard Communication (Program)
3. Hazard Communication (Training)
4. General Duty Clause
5. Machine Guarding (Point of Operation)
6. Fall Protection
7. LOTO (Procedures)
8. Powered Industrial Trucks (Training)
9. LOTO - Periodic inspections
10. PPE – Assessment

1. Fall Protection (Residential)
2. Fall Protection (Training)
3. Safety program (Inspections)
4. Ladders (Positioning)
5. Fall Protection (General)
6. Safety program
7. Eye Protection
8. Fall Protection (Low slope roof)
9. Scaffolding Fall Protection (Guardrails)
10. Cave In Protection
ASKING ME TO OVERLOOK A SIMPLE SAFETY VIOLATION WOULD BE ASKING ME TO COMPROMISE MY ENTIRE ATTITUDE TOWARD THE VALUE OF YOUR LIFE!

(AUTHOR UNKNOWN)
Another 50,000 die annually because of illness they contracted on the job.

An average of 4000 Americans die on the job every year due to injuries.

Working kills roughly 54,000 workers every year and injures millions more.
According to the National Safety Council...

- During a ten minute safety speech:
  - 2 people will be killed
  - 350 people will have a disabling injury
  - Costs amount to $8,400,000
According to the National Safety Council...

- Nationwide- Each hour
  - 11 unintentional injury deaths
  - 2,120 disabling injuries!
  - Work related- 1 death per hour
  - Work related- 400 injuries per hour
There are risks and costs to a program of action. But they are far less than the long-range risks and costs of comfortable inaction.

John F. Kennedy
What's going on in the world of Safety?
What methods are the safest companies utilizing?
What is world class regarding safety?
What should your target be?
Which might be appropriate for your organization?
What obstacles do we need to overcome to improve safety?
Is there a common formula/approach we should be applying in all facilities?
What's going on in the world of Safety?

- Historically Compliance Driven:
  - OSHA & EPA

- System Driven
  - ISO 9000 merge ISO 14000
  - BS 8800 OSHAS 18000
What's going on in the world of Safety?

- Today Performance
  - United States - OSHA Voluntary Protection Program (VPP)
  - Canada - WorkWell
  - Australia - SafetyMAP
  - United Kingdom - OHSAS 18001

- Safety Management Systems
What methods are the safest companies utilizing?

- Structured Safety Program/Process
- Employee Involvement
- Management Initiatives
- Volunteer Protection Program (VPP)
  - Motorola
  - Georgia Pacific
  - DuPONT, etc.
What is world class regarding safety?

- VPP Safety statistics 1/3 to 1/5 of the industrial averages for frequency & severity rates
What should your target be?

- Zero Injuries
- Industry Averages
- OSHA Recordable Rate
- DART Rate
- Lost Work Day Frequency Rate
- Worker’s Compensation Costs
- Implement Operational Standards
- Develop Performance Metrics
Which might be appropriate for your organization?

- Benchmark leading safety programs
- Recommend improvement strategies and/or practices
- Implement best practices
What obstacles do we need to overcome to improve safety?

- Attitude
- Communication
- Change
- Management support, other than verbal
Is there a common formula/approach we should be applying in all facilities?
Is there a common formula/approach we should be applying in all facilities?

- Management Leadership
- Worker Participation
- Hazard Identification aka Worksite Analysis
- Hazard Prevention and Control
- Education & Safety and Health Training
- Program Evaluation & Improvement
- Coordination/Communication on Multiemployer Worksites
Effective Safety and Health Program

- It has been found that effective management of worker safety and health programs
  - Reduces the extent and severity of work related injuries and illnesses
  - Improves employee morale and productivity
  - Reduces workers’ compensation costs
Common Characteristics of Exemplary Workplaces

- Use of organized and systematic methods to
  - Assign responsibility to managers, supervisors, and employees
  - Inspect regularly for and control hazards
  - Orient and train all employees to eliminate or avoid hazards
The Guidelines - General

- An effective program
  - Includes provisions for systematic identification, evaluation and prevention or control of hazards
  - Goes beyond specific requirements of the law to address all hazards

- Written program
  - “In writing” less important than its effectiveness
  - As size and complexity of worksite or process increases, so does need for written guidance
Major Elements

- An effective occupational safety and health program will include the following four elements (core of the core)
  - Management commitment and employee involvement
  - Worksite analysis
  - Hazard prevention and control
  - Safety and health training
Safety Management System
“System” by Webster

“a group of interactive, interrelated or independent elements forming or regarded as forming a collective entity”
Safety Management System

“The goal of a Safety Management System is to reduce accidents by managing the implementation and continuous improvement of the overall safety and health program.”
Safety Management Model

Consists of two interrelated components

- 7 key elements of the program – forms the structure

- Continuous improvement process – provides a foundation
Safety Management System

Management Commitment Leadership
- Mission & Policy Statement
- Leadership Involvement
- Strategic Planning
- Organizational Goals
- Organizational Objectives
- Program Responsibilities
- Resource Allocation
- Safety Purchases
- Safety Coordinator/Specialist
- Budgeting
- Accountability
- Best Practice

Worker Participation
- Worker Involvement
- Safety Committees
- Ergonomics Teams
- Recognition Programs
- Incentive Programs
- Behavior Based Programs
- Best Practice

Hazard Identification / Assessment
- Identification of Hazard Categories
- Worksite Inspections
- Job Hazard Analysis
- Process Analysis
- Change Analysis
- Project Reviews
- Exposure Monitoring
- Accident Investigations
- Hazard Reporting
- Ergonomics Analysis
- Best Practice

Accident & Record Analysis
- Injury/Illness Recordkeeping
- Trend Analysis
- Incident & Accident Reporting
- Worker Medical Records
- Worker Exposure Records
- Identify Top Injurious Areas
- Safety Metrics
- Training
- Leading
- Best Practice

Hazard Prevention and Control
- Hazard Controls
- Personal Protective Equipment (PPE)
- Housekeeping/5S
- General Facility Safety Rules
- Continuous Improvement Events
- Medical Management Program
- Return to Work Program
- Preventive Maintenance
- Compliance Programs
- Ergonomics Process
- Corrective Action Tracking
- Emergency Preparedness
- Best Practice

Safety and Health Training
- Needs Assessment
- Training Design
- New Employee & Transfer Orientation
- Scheduled Safety Training
- Management Training
- Supervisory Training
- Associate Training
- Safety Coordinator Professional Development
- Safety Boot Camp
- Training Tracking Matrix
- Best Practice

Program Review and Evaluation
- Evaluator Qualification
- Evaluation Criteria
- Information Collection
- Interpreting Results
- Follow up on Review and Findings
- Compliance Audit
- Best Practice
IMPLEMENTING a safety & health program can help employers avoid the INDIRECT COSTS that result from WORKPLACE INCIDENTS such as:

- TIME LOST due to work stoppages and investigations,
- training and other costs associated with REPLACING INJURED WORKERS,
- LOSS OR DAMAGE to material, machinery and property.

These INDIRECT COSTS have been estimated to be at least 2.7 times the DIRECT COSTS.
## Core Elements of the Safety and Health Program Management Guidelines

### Management Leadership
- Top management demonstrates its commitment to continuous improvement in safety and health, communicates that commitment to workers, and sets program expectations and responsibilities.
- Managers at all levels make safety and health a core organizational value, establish safety and health goals and objectives, provide adequate resources and support for the program, and set a good example.

### Worker Participation
- Workers and their representatives are involved in all aspects of the program—including setting goals, identifying and reporting hazards, investigating incidents, and tracking progress.
- All workers, including contractors and temporary workers, understand their roles and responsibilities under the program and what they need to do to effectively carry them out.
- Workers are encouraged and have means to communicate openly with management and to report safety and health concerns without fear of retaliation.
- Any potential barriers or obstacles to worker participation in the program (for example, language, lack of information, or disincentives) are removed or addressed.

### Hazard Identification and Assessment
- Procedures are put in place to continually identify workplace hazards and evaluate risks.
- An initial assessment of existing hazards and control measures is followed by periodic inspections and reassessments to identify new hazards.

### Hazard Prevention and Control
- Employers and workers cooperate to identify and select options for eliminating, preventing, or controlling workplace hazards.
- A plan is developed that ensures controls are implemented, interim protection is provided, progress is tracked, and the effectiveness of controls is verified.

### Education and Training
- All workers are trained to understand how the program works and how to carry out the responsibilities assigned to them under the program.
- All workers are trained to recognize workplace hazards and to understand the control measures that have been implemented.

### Program Evaluation and Improvement
- Control measures are periodically evaluated for effectiveness.
- Processes are established to monitor program performance, verify program implementation, identify program deficiencies and opportunities for improvement, and take actions necessary to improve the program and overall safety and health performance.

### Coordination and Communication on Multiemployer Worksites
- The host employer and all contract employers coordinate on work planning and scheduling to identify and resolve any conflicts that could impact safety or health.
- Workers from both the host and contract employer are informed about the hazards present at the worksite and the hazards that work of the contract employer may create on site.
MANAGEMENT LEADERSHIP

Creates a culture of safety, facilitates trust, and reinforces the core elements.

MULTIEMPLOYER WORKSITES
- Ensures communication and cooperation to protect all workforce

WORKER PARTICIPATION
- Results in better design, implementation, and enforcement

HAZARD IDENTIFICATION AND ASSESSMENT
- Identifies hazards and exists all workplaces

HAZARD PREVENTION AND CONTROL
- Implement sensible controls and preventative measures

EDUCATION AND TRAINING
- Ensures all employees know how to handle and practice safe work

PROGRAM IMPROVEMENT
- Analyzes programs and makes improvements
WORKER PARTICIPATION

Results in better design, implementation and evaluation.
Management Leadership & Worker Participation (Employee Involvement)

- These are complementary elements
- **Management commitment** provides motivation and resources
- **Employee involvement** allows workers to develop and express commitment to safety and health
Management Leadership & Worker Participation (Employee Involvement)

- Provides the cornerstone for our safety and health programs and initiatives
  - Management Commitment & Associate Involvement
  - Develops safety policy as statement of intent
  - Formulates strategic planning
  - Setting attainable goals
  - Utilizing performance measures
  - Assigning responsibilities and accountability
  - Provides appropriate resources
  - Involves all employees in the process
Management Leadership & Worker Participation (Employee Involvement)

Recommended Actions:

- State clearly a worksite safety and health policy
- Establish and communicate a clear goal and objective for the safety and health program
- Provide visible top management involvement in implementing the program
Management Leadership & Worker Participation (Employee Involvement)

**Recommended Actions:**

- Encourage employee involvement in the program and in decisions that affect their safety and health (e.g., inspection or hazard analysis teams; developing or revising safe work rules; training new hires or co-workers; assisting in accident investigations)

- Assign and communicate responsibility for all aspects of the program
Management Leadership & Worker Participation (Employee Involvement)

Recommended Actions:
- Provide adequate authority and resources to responsible parties
- Hold managers, supervisors, and employees accountable for meeting their responsibilities
- Review program operations at least annually, to evaluate, identify deficiencies, and revise, as needed
Management Commitment and Employee Involvement

- Develop a safety & health policy & communicate to all employees
- Demonstrate management Leadership by instilling accountability for safety & health, obeying safety rules & reviewing accident reports
- Conduct regular safety & health meetings involving employees, supervisors & managers
- Assign responsible person(s) to coordinate safety & health activities
- Integrate safety & health into business practices (e.g., purchases, contracts, designs & development)
- Involve employees in safety & health-related activities (e.g., self-inspections, accident investigations, & developing safe practices)
- Recognize employees for safe work practices
Management Leadership and Worker Participation

- Adopt a safety policy.
- Set goals, objectives, and performance criteria.
- Visible top management involvement.
- Encourage employee and union involvement.
- Assign responsibilities for all positions.
- Allocate authority and resources.
- Hold all positions accountable for the program.
- Audit annually, continuous improvement.
Management Leadership and Worker Participation

Adopt a Safety Policy

(i) State clearly a worksite policy on safe and healthful work and working conditions, so that all personnel with responsibility at the site understand the priority of safety and health protection in relation to other organizational values.
Set Goals, Objectives, and Performance Criteria

(ii) Establish and communicate a clear goal for the safety and health program and objectives for meeting that goal, so that all members of the organization understand the results desired and the measures planned for achieving them.
Performance Goals

- Annual (short term) and Stretch Goals
- Strategic Plan
- Routine Evaluation and Performance Reporting
Safety & Health Strategic Planning

- **Purpose**
  - Planned approach to implementation and improvement
  - Goals, objectives, and action plans

- **This involves**
  - Goals
  - Objectives
  - Action Plans
Policy and Goals

- Clearly state a worksite safety and health policy
- Establish and communicate a clear goal and objective for the safety and health program
- Involve top management in implementing the program
WHY COMPLETE AN ACTION PLAN?

- Identify gaps or problem areas (Focus Effort)
- Provide direction and end points (Roadmap)
- Accountability
- Continuous Improvement
- Compliance Calendar
Employee Involvement

- Encourage employees to get involved in the program and in decisions that affect their safety and health
- Communicate responsibility for all program aspects
Visible Top Management Involvement

(iii) Provide visible top management involvement in implementing the program, so that all will understand that management’s commitment is serious.
(iv) Provide for and encourage employee involvement in the structure and operation of the program and in decisions that affect their safety and health, so that they will commit their insight and energy to achieving the safety and health program’s goals and objectives.
Assign Responsibilities for all Positions

(v) Assign and communicate responsibility for all aspects of the program, so that managers, supervisors, and employees in all parts of the organization know what performance is expected of them.
Allocate Authority and Resources

(vi) Provide adequate authority and resources to responsible parties, so that assigned responsibilities can be met.
Hold All Positions Accountable for the Program

(vii) Hold managers, supervisors, and employees accountable for meeting their responsibilities, so that essential tasks will be performed.
Audit Annually,
Continuous Improvement

(viii) Review program operations at least annually to evaluate their success in meeting the goal and objectives, so that deficiencies can be identified and the program and/or the objectives can be revised when they do not meet the goal of effective safety and health protection.
HAZARD IDENTIFICATION AND ASSESSMENT

Identifies and documents all known and suspected hazards.

EDUCATION AND TRAINING

Ensures all workers have the knowledge and skills to safely control or eliminate recognized hazards from the workplace.

PROCEDURAL EVALUATION

Evaluates adherence to existing safety and health practices and procedures.

EMPLOYEES

The employees are made aware of potential hazards and the steps that can be taken to mitigate the hazards.

MANAGEMENT LEADERSHIP

Provides direction and motivation to the organization.

HAZARD PREVENTION AND CONTROL

Practiced safe work practices, procedures, and equipment are implemented to prevent or control identified hazards.
AKA Workplace Analysis

- **Purpose**
  - Describes how the facility collects information on existing and potential hazards
  - Identifies employees at risk, and at what level
  - Establish control measures to control risk

- **This involves**
  - Workplace inspections and job hazard analysis
  - Exposure monitoring
  - Accident investigations
Safety & Health Records Analysis

- **Purpose**
  - Outline the procedures for recording and analyzing injuries and illnesses

- **This involves**
  - OSHA recordkeeping procedures
  - Accident trend analysis
  - Incident or accident reporting
  - Incident investigations
  - Employee medical and exposure records
Worksite Analysis

- Evaluate all workplace activities & processes for hazards
- Reevaluate workplace activities when there are changes in:
  - Processes
  - Materials
  - Machinery
- Conduct on-site inspections, identify hazards & take corrective actions
- Provide a hazard reporting system for employees to report unsafe & unhealthful conditions
- Investigate all accidents & near misses to determine their root causes
Worksite Analysis

- Identify Hazards
  Comprehensive Baseline Worksite Surveys/Audits
  Project Reviews on new facilities, processes, materials, equipment.
  Job Hazard Analyses

- Regular Safety Inspections

- Voice employee safety concerns, with timely follow-up.
  Safety Meetings, Safety Committees, Safety Teams

- Accident and “Near Miss” Investigations with Corrective Action
  Injury and Illness Trend Analysis.
Worksite Analysis

Identify Hazards

(i) So that all hazards are identified:

(A) Conduct comprehensive baseline worksite surveys for safety and health and periodic comprehensive update surveys;

(B) Analyze planned and new facilities, processes, materials, and equipment;

(C) Perform routine job hazard analyses.
Comprehensive Survey

• Conduct a comprehensive baseline survey for safety and health
• Job Hazard Analysis
• Who may help you:
  -- OSHA Consultation Program
  -- Insurance companies
  -- Consultants
Regular Safety Inspections

(ii) Provide for regular site safety and health inspection, so that new or previously missed hazard controls are identified.
Worksite Analysis

• Examine the worksite and identify:
  -- existing hazards
  -- conditions and operations where changes might occur to create hazards
• Management must actively analyze the work and the worksite to anticipate and prevent harmful occurrences
Safety and Health Inspections

- Conduct regular (usually weekly) site inspections
- Establish daily work area inspection procedures
- Develop and use a checklist
- Provide a reliable system for employees, without fear of reprisal, to notify management about apparent hazardous conditions and to receive timely and appropriate responses
Voice Employee Safety Concerns, with timely follow-up

(iii) So that employee insight and experience in safety and health protection may be utilized and employee concerns may be addressed, provide a reliable system for employees, without fear of reprisal, to notify management personnel about conditions that appear hazardous and to receive timely and appropriate responses; and encourage employees to use the system.
(iv) Provide for investigation of accidents and “near miss” incidents, so that their causes and means for their prevention are identified.
Injury and Illness Trend Analysis

(v) Analyze injury and illness trends over time, so that patterns with common causes can be identified and prevented.
What Constitutes a Hazard?

A real or potential condition that, when activated, can transform into a series of interrelated events that result in damage to equipment or property and or injury to people.
Hazards

- **Chemical & Dust Hazards**
  - Cleaning products, pesticides, asbestos, etc.

- **Biological Hazards**
  - Mold, insects/pests, communicable diseases, etc.

- **Ergonomic Hazards**
  - Repetition, lifting, awkward postures, etc.

- **Work Organization Hazards**
  - Things that cause stress!

- **Safety Hazards**
  - Slips, trips and falls, faulty equipment, etc.

- **Physical Hazards**
  - Noise, temperature extremes, radiation, etc.
Chemicals & Dust / Industrial Hygiene

Chemicals
  • cleaning products, paints, acids, solvents

Vapors and fumes
  • welding or exposure to solvents

Gases
  • acetylene, propane, carbon monoxide and helium

Flammable materials
  • gasoline, solvents, and explosive chemicals

Pesticides
Ergonomic Hazards – Risk Factors

Contact stress
  • Stand up

Awkward Positions
  • Use proper body positioning.

Repetitive motion
  • Vary technique.

Vibration
  • Anti-vibration gloves are available.

Excessive Force
  • Get help for lifting - Always for 50 lbs or more.
  • Use material handling equipment- IF QUALIFIED.
  • Not just heavy, but awkward or unbalanced also.
Physical Hazards

Radiation
- ionizing, non-ionizing (EMF’s, microwaves, radiowaves, etc.)

High exposure to sunlight / ultraviolet rays

Temperature extremes – hot and cold

Constant loud noise
Noise Levels – Permissible Exposure Limits (PEL)

Action Level 85 dB
Safety Hazards

Slip / Trip / Falls

Unguarded machinery and moving machinery parts

Electrical

Confined spaces
**Slip / Trip**

**Slip**
- Too little friction or traction between feet (footware) & walking/working surface

**Trip**
- Foot or lower leg hits object
- Stepping down to lower surface

**Fall**
- Fall at same level
- Fall to lower level
Fall Protection

ANY WORK > 4 feet
Open sides and edges
Roofs, Skylights
Wall Openings
Excavations
Machine Hazards

**CHEMICAL** – Sudden release of reaction/pressure.

**ELECTRICAL** – Electrical shock. Improper wiring / flexible wiring used as fixed wiring

**HYDRAULIC** – Sudden release of pressure.

**MECHANICAL** – Sudden release of stored energy.
  - Kinetic – energy in motion
  - Potential – stored energy

**PNEUMATIC** – Sudden release of stored energy.

**THERMAL** – Hot or cold surfaces.

**INSTABILITY** - not properly anchored

**IMPROPER GUARDING** – must be securely attached / requires a tool to remove
Machine Hazards

Point of Operation

where the machine does the work

Power Transmission

Any moving part

Tipping

- Machines designed for a fixed location must be anchored
Point of Operation

Punching

Bending

Shearing
Rotating Parts

Rotating Coupling with Projecting Bolt Heads

Rotating Shaft and Pulleys with Projecting Key and Set Screw

Rotating Pulley with Spokes
In-Running Nip Points

Rotating Cylinder

Chain and Sprocket

Rack and Pinion

Belt and Pulley
Rotating Elements and Longitudinal Motions

Nip Points Between Rotating Elements and Parts with Longitudinal Motions
Reciprocating Motions
Electrical Hazards

Inadequate wiring
  • Flexible wiring can’t be used in place of fixed wiring

Improper grounding

Exposed electrical parts
Electrical Hazards

Damaged insulation

Overloaded circuits

Wet conditions

Damaged tools and equipment
Confined Spaces

OSHA definition of confined space:
- Large enough to bodily enter.
- Not designed for continuous occupancy.
- Has limited means of entry/exit.
Confined Spaces

Toxic Atmosphere

Oxygen Deficiency <19.5

Oxygen Enrichment >23.5

Flammable or Explosive Atmospheres

Flowing Liquid or Free Flowing Solids

Excessive Heat.
Cranes, Hoists, Chains, Slings

Electrical

Overload
  • Load ratings

Falling Material
  • safety latch

Travel Stops / bumpers

Obstructions
Fire Prevention

Three needed components of fire:
- fuel (something that will burn)
- heat (enough to make the fuel burn)
- oxygen (the right mixture)

The chemical reaction is the fire
Workplace Hazards

Congestion

Workload demands

Intensity and/or pace

Flexibility
Pause and Think - A.B.B.B.I.

Above

Below

Behind

Beside

Inside

Hazards in the Workplace !!!
HAZARD PREVENTION AND CONTROL

Prevents injuries using hierarchy of controls: engineering, work practices, administrative, PPE.

EDUCATION AND TRAINING
Ensures all workers understand safe work practices, are familiar with hazards, and how to react to them.

PROGRAM EVALUATION AND IMPROVEMENT
Continually review and assess program effectiveness to identify areas for improvement.

WORKER PARTICIPATION
A safe workplace begins with employee involvement and contributions.

LEADERSHIP
Establish clear expectations and accountability for safety and health programs.

MANAGEMENT AND IMPLEMENTATION
Determine program's role in organization, observe existing policies, and evaluate results.

HAZARD IDENTIFICATION AND ASSESSMENT
Identify hazardous conditions, determine control strategies, and evaluate effectiveness.
Hazard Prevention and Control

- **Purpose**
  - Define the desired controls to use for risk control
  - Develop policies and procedures outlining implementation of these controls

- **This involves**
  - Elimination, engineering, etc…
  - Continuous improvement events
  - Medical and RTW programs
  - Preventative maintenance
  - Compliance programs
Hazard Prevention and Control

- Triggered by a determination that a hazard or potential hazard exists
- Where feasible, prevent hazards by effective design of job or job site
- Where elimination is not feasible, control hazards to prevent unsafe and unhealthful exposure
- Elimination or control must be accomplished in a timely manner
Hazard Prevention and Control

Recommended Actions:

- Establish procedures for timely correction or control of hazards, including:
  - Engineering techniques, where feasible and appropriate
  - Procedures for safe work which are understood and followed as a result of training, positive reinforcement, correction of unsafe performance, and enforcement
  - Provision of personal protective equipment
  - Administrative controls
Hazard Prevention and Control

- Hazard Control
  - Engineering & Capital Improvements
  - Safe Work Procedures
  - Personal Protective Equipment (PPE)
  - Administrative Controls
  - See Core Safety Elements

- Preventative Maintenance System

- Emergency Response Plan

- Medical Program
  - First Responders, physician, medical care
Hazard Prevention and Control

Hazard Control

(i) So that all current and potential hazards, however detected, are corrected or controlled in a timely manner, establish procedures for that purpose, using the following measures:

- Engineering & Capital Improvements
- Safe Work Procedures
- Personal Protective Equipment (PPE)
- Administrative Controls
Hazard Prevention and Control

Hazard Control
Engineering & Capital Improvements

(A) Engineering techniques where feasible and appropriate;
Hazard Prevention and Control

- Start by determining that a hazard or potential hazard exists
- Where feasible, prevent hazards by effective design of job or job site
- If the hazard cannot be eliminated, use hazard controls
- Eliminate or control hazards in a timely manner
Controlling the Hazards

- Engineering controls
- Administrative controls
- Personal protective equipment
- Safe work practices communicated
  - via training, positive reinforcement,
  - correction of unsafe performance,
  - and enforcement
(B) Procedures for safe work which are understood and followed by all affected parties, as a result of training, positive reinforcement, correction of unsafe performance, and if necessary, enforcement through a clearly communicated disciplinary system;
Personal Protective Equipment (PPE)

(C) Provision of personal protective equipment; and
Hazard Control

Administrative Controls – job rotation

(D) Administrative controls, such as reducing the duration of exposure.
Preventative Maintenance System

(ii) Provide for facility and equipment maintenance, so that hazardous breakdown is prevented.
Emergency Response Plan

(iii) Plan and prepare for emergencies, and conduct training and drills as needed, so that the response of all parties to emergencies will be “second nature.”
Medical Program
First Responders, Physician, Medical care

(iv) Establish a medical program which includes availability of first aid on site and of physician and emergency medical care nearby, so that harm will be minimized if an injury or illness does occur.
Hazard Prevention and Control

- Eliminate & control workplace hazards (e.g., engineering controls, workstation design & work practices)
- Establish a preventive maintenance program
- Keep employees informed of safety & health activities & conditions
- Plan for emergencies (e.g., create an evacuation plan, train employees & conduct drills)
- Record & analyze occupational injuries & illnesses
Source, Path and Worker

Hierarchy of Controls

- **Elimination**: Physically remove the hazard
- **Substitution**: Replace the hazard
- **Engineering Controls**: Isolate people from the hazard
- **Administrative Controls**: Change the way people work
- **PPE**: Protect the worker with Personal Protective Equipment
EDUCATION AND TRAINING

Ensures all workers understand safe work practices, are familiar with hazards, and know how to participate.
Safety and Health Training

- **Purpose**
  - Outline where training is needed within the facility
  - Classify types of training for personnel

- **This involves**
  - Training for management, supervision, associates, etc…
  - Critical evaluation of training
  - Continuous improvement
Safety and Health Training

- Addresses the safety and health responsibilities of all personnel, whether salaried or hourly
- Most effective when incorporated into other training about performance requirements and job practices
- Complexity depends on size and complexity of worksite and nature of hazards
Safety and Health Training

Recommended Actions:

- Ensure that all employees understand the hazards to which they may be exposed and how to prevent harm to themselves and others from exposure to these hazards

CAUTION
DO NOT HANDLE CHEMICALS WITHOUT PROPER PROTECTION
Safety and Health Training

Recommended Actions:

- Ensure that supervisors carry out their safety and health responsibilities, including
  - Analyzing the work under their supervision to identify unrecognized potential hazards
  - Maintaining physical protections in work areas
  - Reinforcing employee training through continual performance feedback and, if needed, enforcement of safe work practices
Safety and Health Training

Recommended Actions:

- Ensure that managers understand their safety and health responsibilities, as described under the Management Commitment and Employee Involvement element of the guidelines.
Safety and Health Training

• Effective training for Employees, Supervisors & Managers
• Provide training on specific safe work practices before an employee begins work
• Provide additional training for new work processes and when accidents and near misses occur
• Provide refresher training on a routine basis
Safety and Health Training

- Determine if training is needed
- Identify training needs
- Identify goals and objectives
- Develop learning activities
- Conduct Training
- Evaluate Training Effectiveness
- Improve Training
i.) Ensure that all employees understand the hazards to which they may be exposed and how to prevent harm to themselves and others from exposure to these hazards, so that employees accept and follow established safety and health protections.
Safety and Health Training

(ii) So that supervisors will carry out their safety and health responsibilities effectively, ensure that they understand those responsibilities and the reasons for them, including:

(A) Analyzing the work under their supervision to identify unrecognized potential hazards;
Safety and Health Training

(B) Maintaining physical protections in their work areas; and

(C) Reinforcing employee training on the nature of potential hazards in their work and on needed protective measures, through continual performance feedback and if necessary, through enforcement of safe work practices.
(iii) Ensure that managers understand their safety and health responsibilities, as described under, “Management Leadership and Employee Involvement,” so that the managers will effectively carry out those responsibilities.
Safety and Health Training

- Address the safety and health responsibilities of all personnel
- Incorporate it into other training and job performance/practice
Purpose of Safety Training:

- To create and maintain interest of personnel in the prevention of injuries and illnesses.

- The levels of safety training range from generic safety topics to very specific workplace safety procedures.
Reasons for Safety Training

- Step up to the next level of prevention
- Reduce Injuries & Illnesses
- Maintain Safety Interest
- Improve the Safety Culture
- Keep Employees Informed
- Meet OSHA Requirements
Three (3) Levels of Training

- Supervisor Safety Training (tool box talks)
- New & Transfer Employee Safety Training
- Specific Area Safety Training
Supervisor Safety Training

- **Purpose**: General overview of safety topics.
- **Frequency**: Once per week or month.
- **Topics**: Set for each month.
  - Heat Stress
  - Emergency Action Plan
  - Lockout/Tagout
  - Housekeeping
New & Transfer Employee Safety Training

- **Purpose**: To provide more individual (face to face) training on the 1st, 5th, 30th and 90th day of employment. Training is more specific to the job.

- **Frequency**: Training will be conducted for each new and transfer employee. A yearly refresher will be done as a topic during supervisor safety training.
Safety and Health Orientation

- Employees must understand the hazards they may be exposed to and how to prevent harm to themselves and others from hazard exposure.
- Orientation training must be given to site and contract workers.
New & Transfer Employee Safety Training

- **Trial Basis**: All current employees will be trained

- **Topics**: All topics are specific to the job.
  - Safe Work Practices
  - Personal Protective Equipment
  - Hazard Communication
  - Forklift Training
  - Lockout/Tagout, etc.
Specific Area Safety Training

- **Purpose**: To provide safety training that relates specifically to the work area.

- **Frequency**: Training will be conducted once a year. Training will be done in addition to supervisor safety training. A set schedule will be implemented.
Specific Training Needs

- Hazard recognition
- Training required in standards
- Emergency response
- Accident investigation
- Emergency drills
Specific Area Safety Training

**TOPICS**
- Confined Space
- LOTO
- BBP
- Eye Injury Prevention
- Grinding Safety
- Overhead Hoists

**AREA**
- Maintenance
- Maint/Operations
- First Responders
- Areas where needed
- Operations
- As Applicable
PROGRAM EVALUATION AND IMPROVEMENT

Assesses program effectiveness and modifications needed.
Performance-Based Evaluations

The SMS should use a performance-based evaluation system to focus on the development of each facility’s safety and health management system and on the process of continuous improvement.
Evaluation and Improvement

□ Purpose
  – Facilitates evolution of safety and health program to next level
  – Points out strength’s and weaknesses

• This involves
  – Annual review of program systems and elements
  – Follow-up on results to ensure improvement is implemented and effective
Performance Evaluations...

- Point out strengths and weaknesses within your safety management system.
- Allow prioritization of activities for efficient resource allocation.
Performance Evaluations...

- Provide management confidence that their risks are being properly managed.
- Allow measurement for continuous improvement.
- Allow comparison and facilitate the sharing of ideas and success.
Program Evaluation and Improvement

• Annual review of the program
  • Determine employee involvement / management Leadership
  • Determine effectiveness of training
  • Review incidents & corrective actions
  • Review effectiveness of worksite analyses
• Determine overall effectiveness
  – Core Elements
MULTIEMPLOYER WORKSITES

Ensures communication and cooperation to protect all workers onsite.
Multi-Employer Worksite

- Contractor Safety Program
- Hots Works
- CSE
- LOTO
- Emergency Response
- ETC.
What now?

Goal: Develop a safety culture

1. Management Leadership
2. Worker Participation
3. Hazard Identification and Assessment
4. Hazard Prevention & Controls
5. Effective Training & Program Evaluation
6. Program Evaluation and Improvement
7. Coordination and Communication on Multiemployer Worksites
WWOA - Wastewater Operators' Association Conference

The Core Safety Elements
The Structure of Safety

- Nucleus
- Neutrons
- Management
- Protons
- Employees
- Electrons
- Basic 8 Core Safety Elements
Bloodborne Pathogens
Confined Space Entry
Control of Hazardous Energy
Personal Protective Equipment
Hazard Communication
Occupational Noise Exposure
Respiratory Protection
Fall Protection
Emergency Evacuation / Fire Protection
Excavation
The Core Safety Elements & their locations by Standard

<table>
<thead>
<tr>
<th>Core Element</th>
<th>OSHA 29 CFR</th>
<th>SPS 332</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloodborne Pathogens</td>
<td>1910.1030</td>
<td>332.50</td>
</tr>
<tr>
<td>Confined Space Entry</td>
<td>1910.146</td>
<td>332.28,29</td>
</tr>
<tr>
<td>Control of Hazardous Energy (LOTO)</td>
<td>1910.147</td>
<td>332.50</td>
</tr>
<tr>
<td>Personal Protective Equipment</td>
<td>1910.132, 33, 35, 36,38</td>
<td>332.50</td>
</tr>
<tr>
<td>Hazard Communication</td>
<td>1910.1200</td>
<td>332.50</td>
</tr>
<tr>
<td>Occupational Noise Exposure</td>
<td>1910.95</td>
<td>332.50</td>
</tr>
<tr>
<td>Respiratory Protection</td>
<td>1910.134</td>
<td>332.5</td>
</tr>
<tr>
<td>Fall Protection</td>
<td>1926 Subpart M</td>
<td>332.50</td>
</tr>
<tr>
<td>Emergency Evacuation / Fire Prevention Plans</td>
<td>1910.37, 38</td>
<td>332.50</td>
</tr>
<tr>
<td>Excavation</td>
<td>1926 Subpart P</td>
<td>332.38</td>
</tr>
</tbody>
</table>
In order to reduce or eliminate the hazards of occupational exposure to Bloodborne pathogens, an employer must implement an exposure control plan for the worksite with details on employee protection measures.

- Develop Exposure Control Plan
- Vaccination Status
- Annual Program Review
- Initially - When it is determined that an Exposure Control Plan is necessary
- Annual Refresher

Found in:
- OSHA 29 CFR 1910.1030
- SPS 332.50
Confined Space Entry
Basic Element 2

- Found in:
  - OSHA 29 CFR 1910.146
  - SPS 332.28, 29

- A confined space has limited or restricted means for entry or exit, and it is not designed for continuous employee occupancy.

- Confined Space Evaluations
  - Initially & when changes occur

- Annual Program & Permit Review
  - Filled out for each entry, filed with the Program Coordinator & reviewed every 12 months

- Annual Confined Space Rescue
  - All Entrants & Attendants must be CPR / First Aid Trained
The “Confined Spaces Triangle”

All three conditions must exist to be designated a confined space.

- Large enough to bodily enter
- Restricted entry or exit
- Not designed for continuous occupancy
What are the main hazards of confined spaces?

- Hazardous atmospheres
- Engulfing materials
- Entrapment
- Other Safety & Health Hazard
  - Moving parts
  - Electricity
# Permits

## Attachment D

**Village of Fox Point Confined Space Entry Permit/Checklist**

### Permit # 8

**Space Name:** Storm - Manholes  
**Location:** Throughout Village  
**Date Created:** March 15, 2002  
**Latest Revision Date:** March 1, 2011  
**Revision Number:** 4

### 1. Basic Entry Information

<table>
<thead>
<tr>
<th>Date Issued:</th>
<th>AM or PM (circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Expires:</td>
<td>AM or PM (circle one)</td>
</tr>
<tr>
<td>Entry Supervisor:</td>
<td></td>
</tr>
</tbody>
</table>

### 2. Purpose of Entry

- **Describe Purpose of Entry:**

### 3. Personnel List

<table>
<thead>
<tr>
<th>Name</th>
<th>CSE Trained?</th>
<th>Name</th>
<th>CSE Trained?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

### 4. General Equipment Checklist

- Gas monitor (PHO Line)
- Manhole bariacal (Railing, Ring, or Tape, as appropriate)
- Personal protective equipment
- Signage for manhole
- Ventilation fan
- Two-way radio for communication between entry/attendant

### 5. Rescue (Non-Entry)

- Tipped with wrench
- Two-way, hand-held radio for summoning assistance
- Full body harness (s) for entry
- First Aid Kit

### 6. Hazard Assessment

- **Hazard:**  
  - Hazardous Atmosphere
  - Engulfment (Water)
  - Service Vehicle

### 7. Atmospheric Monitoring

- Gas monitor was tested/calibrated in fresh air prior to use.

### 8. Approval

- **Entry Supervisor Signature:**
- **Date:**
- **Time:**

### 9. Permit Cancellation

- **Entry Supervisor Signature:**
- **Date:**
- **Time:**

---

**Keep Permit Near Space Entrance. When the Entry is Done, Send the Completed Permit to Attach B of Program Under. Keep Canceled Permit on File for One Year.**
Control of Hazardous Energy
Basic Element 3

- Found in:
  - OSHA 29 CFR 1910.147
  - SPS 332.50
- LOTO describes the practices and procedures necessary to disable machinery or equipment to prevent the release of hazardous energy.
- LOTO outlines measures for controlling different types of hazardous energy.

- Machine Specific Procedures
- Periodic Inspections
- Annual Certification of Procedures

- Initially & when changes occur - for both Authorized & Affected Employees
• **Caught-In or In-Between**

• All of the fatalities attributed to caught-in hazards were incidents where an employee was exposed to unexpected and uncontrolled hazardous energy.

• Lockout tag out applied to almost all of these cases.
The use of personal protective equipment (PPE) to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective in reducing these exposures to acceptable levels.

- Hazard Assessment
- Certification of Hazard Assessment
- Annual review
- Initially & when changes occur
- Hazard Assessment
- Certification of Hazard Assessment
- Annual review
- Initially & when changes occur
<table>
<thead>
<tr>
<th>Part of Body</th>
<th>Hazard</th>
<th>Required PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Penetration-sharp objects</td>
<td>Leather/cut resistant gloves</td>
</tr>
<tr>
<td></td>
<td>Penetration-animal bites</td>
<td>General purpose work gloves</td>
</tr>
<tr>
<td></td>
<td>Penetration-rough objects</td>
<td>Chemical resistant gloves</td>
</tr>
<tr>
<td></td>
<td>Chemical(s)</td>
<td>Insulated gloves</td>
</tr>
<tr>
<td></td>
<td>Extreme cold</td>
<td>Heat/ flame resistant gloves</td>
</tr>
<tr>
<td></td>
<td>Extreme heat</td>
<td>Latex or nitrile gloves</td>
</tr>
<tr>
<td></td>
<td>Blood</td>
<td>Insulated rubber gloves</td>
</tr>
<tr>
<td></td>
<td>Electrical shock</td>
<td>Cotton, leather or anti-vibration gloves</td>
</tr>
<tr>
<td></td>
<td>Vibration-power tools</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>Eyes and Face</td>
<td>Impact-flying objects, chips, sand or dirt</td>
<td>Safety glasses w/ side shields</td>
</tr>
<tr>
<td></td>
<td>Nuisance dust</td>
<td>Glasses/goggles w/ face shield</td>
</tr>
<tr>
<td></td>
<td>UV light-welding, cutting, torch brazing or soldering</td>
<td>Chemical goggles/ face shield</td>
</tr>
<tr>
<td></td>
<td>Chemical-splashing liquid</td>
<td>Chemical splash goggles</td>
</tr>
<tr>
<td></td>
<td>Chemical-irritating mists</td>
<td>Impact goggles</td>
</tr>
<tr>
<td></td>
<td>Hot sparks-grinding</td>
<td>Welding goggles</td>
</tr>
<tr>
<td></td>
<td>Splashing molten metal</td>
<td>Welding helmet/shield w/ safety glasses &amp; side shields</td>
</tr>
<tr>
<td></td>
<td>Glare/High intensity lights</td>
<td>Shaded safety glasses</td>
</tr>
<tr>
<td></td>
<td>Laser operations</td>
<td>Laser spectacles or goggles</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>Ears</td>
<td>Exposure to noise levels (&gt;85 dBA 8-hour TWA)</td>
<td>Ear muffs, plugs or ear caps</td>
</tr>
<tr>
<td></td>
<td>Exposure to sparks</td>
<td>Leather welding hood</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>Respiratory System</td>
<td>Nuisance dust/mist</td>
<td>Disposable dust/mist mask</td>
</tr>
<tr>
<td></td>
<td>Welding fumes</td>
<td>Welding respirator</td>
</tr>
<tr>
<td></td>
<td>Asbestos</td>
<td>Respirator w/HEPA filter</td>
</tr>
<tr>
<td></td>
<td>Pesticides</td>
<td>Respirator w/pesticide cartridges</td>
</tr>
<tr>
<td></td>
<td>Paint spray</td>
<td>Respirator w/paint spray cartridges</td>
</tr>
<tr>
<td></td>
<td>Organic vapors</td>
<td>Respirator w/organic cartridges</td>
</tr>
<tr>
<td></td>
<td>Acid gases</td>
<td>Respirator w/acid gas cartridges</td>
</tr>
<tr>
<td></td>
<td>Oxygen deficient/toxic or IDLH atmosphere</td>
<td>SCBA or Type C airline respirator</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
<tr>
<td>Feet</td>
<td>Impact-heavy objects</td>
<td>Steel toe safety shoes</td>
</tr>
<tr>
<td></td>
<td>Compression-rolling or pinching objects/vehicles</td>
<td>Leather boots or safety shoes w/ metatarsal guards</td>
</tr>
<tr>
<td></td>
<td>Slippery or wet surface</td>
<td>Slip resistant soles</td>
</tr>
<tr>
<td></td>
<td>Penetration-sharp objects</td>
<td>Puncture resistant soles</td>
</tr>
<tr>
<td></td>
<td>Penetration-chemical</td>
<td>Chemical resistant boots/ covers</td>
</tr>
<tr>
<td></td>
<td>Splashing-chemical</td>
<td>Rubber boots/ closed top shoes</td>
</tr>
<tr>
<td></td>
<td>Exposure to extreme cold</td>
<td>Insulated boots or shoes</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
</tbody>
</table>
# Part of Body

<table>
<thead>
<tr>
<th>Head</th>
<th>Hazard</th>
<th>Required PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Struck by falling object</td>
<td>Hard hat/cap</td>
</tr>
<tr>
<td></td>
<td>Struck against fixed object</td>
<td>Class A</td>
</tr>
<tr>
<td></td>
<td>Electrical-contact with exposed wires/conductors</td>
<td>Class B</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Class C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>Impact-flying objects</td>
<td>Long sleeves/apron/coat</td>
</tr>
<tr>
<td></td>
<td>Moving vehicles</td>
<td>Traffic vest</td>
</tr>
<tr>
<td></td>
<td>Penetration-sharp objects</td>
<td>Cut-resistant sleeves, wristlets</td>
</tr>
<tr>
<td></td>
<td>Electrical-static discharge</td>
<td>Static control coats/coveralls</td>
</tr>
<tr>
<td></td>
<td>Hot metal or sparks</td>
<td>Flame-resistant jacket/pants</td>
</tr>
<tr>
<td></td>
<td>Chemical(s)</td>
<td>Lab coat or apron/sleeves</td>
</tr>
<tr>
<td></td>
<td>Exposure to extreme cold</td>
<td>Insulated jacket, hood</td>
</tr>
<tr>
<td></td>
<td>Unprotected elevated walking/working surface</td>
<td>Body harness and lanyard</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Other</td>
</tr>
</tbody>
</table>

Certification. I certify that I have performed the above Hazard Assessment to the best of my knowledge on the date indicated. Therefore, this document shall serve as the Certification of Hazard Assessment.

Assessment Author: ___________________________  Title: ___________________________

Signature: ___________________________  Date: ___________________________
• Hazard Communication
  Basic Element 5

  Location & Basic Description
  • Found in:
    - OSHA 29 CFR 1910.1200
    - SPS 332.50

  Requirements
  • Chemical Inventory
  • (M)SDS Management
  • GHS - pictograms

  Training Frequency
  • Initially & when changes occur
    • GHS

In order to ensure chemical safety in the workplace, information about the identities and hazards of the chemicals must be available and understandable to workers.
<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flame</th>
<th>Exclamation Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcinogen</td>
<td>Flammables</td>
<td>Irritant (skin and eye)</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Pyrophorics</td>
<td>Skin Sensitizer</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Self-Heating</td>
<td>Acute Toxicity</td>
</tr>
<tr>
<td>Respiratory Sensitizer</td>
<td>Emits Flammable Gas</td>
<td>Narcotic Effects</td>
</tr>
<tr>
<td>Target Organ Toxicity</td>
<td>Self-Reactives</td>
<td>Respiratory Tract Irritant</td>
</tr>
<tr>
<td>Aspiration Toxicity</td>
<td>Organic Peroxides</td>
<td>Hazardous to Ozone Layer (Non-Mandatory)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gas Cylinder</th>
<th>Corrosion</th>
<th>Exploding Bomb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gases Under Pressure</td>
<td>Skin Corrosion/Burns</td>
<td>Explosives</td>
</tr>
<tr>
<td></td>
<td>Eye Damage</td>
<td>Self-Reactives</td>
</tr>
<tr>
<td></td>
<td>Corrosive to Metals</td>
<td>Organic Peroxides</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flame Over Circle</th>
<th>Environment (Non-Mandatory)</th>
<th>Skull and Crossbones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidizers</td>
<td>Aquatic Toxicity</td>
<td>Acute Toxicity (fatal or toxic)</td>
</tr>
</tbody>
</table>
The National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss.

- **Sound Level Meter Testing**
- **Annual Audiograms**
- Initially - When it is determined that Hearing Conservation Plan is necessary

- **Location & Basic Description**
- **Requirements**
- **Training Frequency**
Hearing Conservation Program

Action Level – 85 dB
  - Hearing Conservation Program implemented
  - Hearing protectors made available
  - Annual audiometric testing & training

Permissible Exposure Limit – 90 dB
  - Hearing protectors **required**
The OSHA respirator standard applies to all occupational airborne exposures to contaminated air where the employee is:

- Exposed to a hazardous level of an airborne contaminant; or
- Required by the employer to wear respirators; or
- Permitted to wear respirators.

**Respiratory Protection**

Basic Element 7

- Hazard Assessment
- Medical Evaluation
- Annual Fit Testing
- Initially - When it is determined that Respiratory Plan is necessary
- Annual Refresher
<table>
<thead>
<tr>
<th>PROGRAM REQUIREMENT</th>
<th>MANDATORY OR Emergency USE OF Any Type OF Respirator</th>
<th>VOLUNTARY USE OF OTHER THAN A FILTERING FACE PIECE</th>
<th>VOLUNTARY USE OF A FILTERING FACE PIECE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designate a qualified Program Administrator</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Procedures for selecting respirators for use in the workplace</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical evaluations of employees required to use respirators</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Fit testing procedures for tight-fitting respirators</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedures for regularly evaluating the effectiveness of the program</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide Appendix D of 1910.134</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
• Respiratory Protection 1910.134
  • Medical respirator questionnaire
  • Fit-testing
  • Proper use/limitations
Respiratory Hazards are included
• Silica Construction Standard - additions

• Table 1 – Control Measures
• Competent Person
### Table 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

<table>
<thead>
<tr>
<th>Equipment/Task</th>
<th>Engineering and Work Practice Control Methods</th>
<th>Required Respiratory Protection and Minimum Assigned Protection Factor (APF)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤ 4 hrs/shift</td>
</tr>
<tr>
<td>(ii) Handheld power saws (any blade diameter)</td>
<td>Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. • When used outdoors. • When used indoors or in an enclosed area.</td>
<td>None</td>
</tr>
</tbody>
</table>

### What is Table 1?

**Table 1** matches common construction tasks with dust control methods, so employers know exactly what they need to do to limit worker exposures to silica. The dust control measures listed in the table include methods known to be effective, like using water to keep dust from getting into the air or using ventilation to capture dust. In some operations, respirators may also be needed.

Employers who follow Table 1 correctly are not required to measure workers’ exposure to silica and are not subject to the PEL.

*Excerpt from Table 1.

*See regulatory text for construction standard, with complete Table 1 at [www.osha.gov/silica/SilicaConstructionRegText.pdf](http://www.osha.gov/silica/SilicaConstructionRegText.pdf).
Major Types of Respirators

Air-purifying respirators, which remove contaminants from the air.

**Half mask/Dust mask**
APF=10
Needs to be fit tested

**Half mask (Elastomeric)**
APF=10
Needs to be fit tested

**Full facepiece (Elastomeric)**
APF=50
Needs to be fit tested
Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls.

To prevent employees from being injured from falls:
- Guard every floor hole into which a worker can accidentally walk
- Other means of fall protection that may be required on certain jobs (PPE – fall arrest / fall protection system)

Initially & when changes occur.
A fall from a ladder was the leading cause of fall deaths. Almost half of the falls were at general industry worksites, not construction. One fatality was the ejection of an employee from an aerial lift.
PLAN. PROVIDE. TRAIN.
Three simple steps to preventing falls.
Conduct your own Fall Stand-Down

Last year, nearly 15% of Stand-Down participants who provided information by getting a certificate from OSHA were non-construction employers.

May 8 – 12, 2017
Training (§ 1910.30)

Train on these topics:

- The nature of the fall hazards in the work area and how to recognize them;
- The procedures to be followed to minimize those hazards
- The correct procedures for installing, inspecting, operating, maintaining, and disassembling the personal fall protection systems that the employee uses; and
- The correct use of personal fall protection systems and equipment, including, but not limited to, proper hook-up, anchoring, and tie-off techniques, and methods of equipment inspection and storage, as specified by the manufacturer.
• Fall Hazard Elimination/Reduction Strategies

  • Eliminating the hazards through engineering design/practice
  • Installing fall protection systems
  • Providing personal protective equipment
  • Training personnel in hazard recognition and avoidance
• ABC’s of Fall Protection

• A = Anchorage
• B = Body Harness
• C = Connecting Device
A = Anchorage Point

- I-Beam Adjustable Strap
- Roof Tie-Off
- Permanent Roof-top
• **B = Body Harness**
C = Connecting Device

• Connecting devices link the body harness to the anchor point.
• Lanyards, retractable lanyards, retractable lifelines, and shock-absorbing lifelines are different types of connecting devices.
**Compliance Schedule**

The final rule becomes effective on January 17, 2017. OSHA also provides delayed or phased-in compliance dates for several requirements in the final rule, including:

- **Training workers on fall and equipment hazards** -- *6 months (May 17, 2017)*;
- **Inspection and certification of permanent building anchorages** -- *1 year*;
- **Installation of fall protection (personal fall arrest systems, ladder safety systems, cages, wells) on existing fixed ladders (over 24 feet) that do not have any fall protection** -- *2 years*;
- **Installation of ladder safety or personal fall arrest systems on new fixed ladders (over 24 feet) and replacement ladders/ladder sections** -- *2 years*; and
- **Installation of ladder safety systems or personal fall arrest systems on all fixed ladders (over 24 feet)** -- *20 years*. 
Found in:
- OSHA 29 CFR 1910.37, 38
- SPS 332.50

Emergency procedures, including the handling of any toxic chemicals, should include:

- Escape procedures and escape route assignments;
- Special procedures for employees who perform or shut down critical operations;
- Systems to account for all employees after evacuation;
- Rescue and medical duties for employees who perform them;
- Means for reporting fires and other emergencies

- Fire Prevention Plan
- Emergency Evacuation Plan (including severe weather)
- Initially & when changes occur
Excavation
Element 10

- Found in:
  - OSHA 29 CFR 1926 Subpart P
  - SPS 332.38

- OSHA requires that workers in trenches and excavations be protected, and that safety and health programs address the variety of hazards they face.

- Excavation Dependent
  - Meaning if your Department performs excavation duties as prescribed in the standard, you need an excavation program
  - ≤5’ w/ no potential for cave-ins

Competent Person:
- Exposed Person
  - Is an individual that is exposed to the hazards within the excavation / trench
Distribution of Fatalities by Cause of Death, 1990-2000

- Machine Accident: 23%
- Object Falling: 9%
- Cave-in: 48%
- Electrocution: 7%
- Other: 5%
- Asphyxiation - Noxious Fumes: 1%
- Drowning: 1%
- Fall: 2%
- Explosion/Fire: 2%
- Car Accident: 2%
• Boston, MA Trench Collapse
**Excavation Summary**

- Call before you dig.

- Use at least one visual and one manual soil test to determine soil type.

- A Ladder is required for access and egress at 4’.

- The ladder must be within 25’ lateral travel at all times.

- At 5’ depth some type of ‘protective system is required’.

- Treat all soil as Type ‘C’ and slope at 1 ½ : 1 and you are covered.

- If not: Use some type of shoring or shielding to protect your employees.

- Excavations over 20’ require the use of a P.E.
We reviewed the location & basic description of the Core Elements
- We saw that each of the Core Elements has a location in both the OSHA Standards as well as the WDSPS Standards

We reviewed the basic requirements for each Core Element
- Each Facility needs to determine if they are meeting the basic requirements of each Core Element
- Each Facility needs to implement the Core Elements if they have not already

We reviewed the frequency of training that is needed for each Core Element
- Each Facility needs to have effective training, specific for that operation
  - Need to record & document the training
What now?

Goal: Develop a safety culture

1. Management Leadership
2. Worker Participation
3. Hazard Identification and Assessment
4. Hazard Prevention & Controls
5. Effective Training & Program Evaluation
6. Program Evaluation and Improvement
7. Coordination and Communication on Multiemployer Worksites
What does it all mean?

- We need to begin to implement the core elements
- We need to start changing the culture in our facilities through training, assessments and hazard controls
- It needs to get into our DNA
  - Effective Injury & Illness Prevention Program will have a positive impact on those of you who are committed to establishing & maintaining a collaborative approach to a safety culture
The Structure of Safety

Nucleus

Neutrons

Management

Protons

Employees

Electrons

Basic 8 Core Safety Elements
# Safety Compliance Regulations

<table>
<thead>
<tr>
<th>Name</th>
<th>OSHA 29 CFR</th>
<th>SPS 332</th>
<th>Requirements</th>
<th>Training Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloodborne Pathogens</td>
<td>1910.1030</td>
<td>332.50</td>
<td>• Exposure Control Plan &amp; Annual Program Review Vaccination Status</td>
<td>Initial and Annual Refresher</td>
</tr>
</tbody>
</table>
| Confined Space Entry                    | 1910.146    | 332.28, 29 | • Space Evaluations  
• Annual Program & Permit Review                                                               | Initial and when changes occur  
• Annual Rescue                                |
| Control of Hazardous Energy (Lockout/Tagout) | 1910.147    | 332.50   | • Machine Specific Procedures  
• Periodic Inspection  
• Annual Certification of Procedures                                                              | Initial and when changes occur  
• Authorized & Affected Employees                |
| Emergency Action/Fire Prevention Plans  | 1910.37, 38 | 332.50   | • Fire Prevention Plan                                                                         | Initial and when changes occur                |
| Excavation                              | 1926 Subpart P | 332.38   | • Excavation dependent                                                                        | Competent Person/Exposed Person               |
| Fall Protection                         | 1926 Subpart M | 332.50   | • Plan if using other than PPE or railings                                                   | Initial and when changes occur                |
| Hazard Communication                    | 1910.1200   | 332.50   | • MSDS/SDS management                                                                          | Initial and when changes occur  
• New GHS training!                             |
| HAZWOPER                                | 1910.120    | —        | | Depends on level, Annual refreshers                                                            |
| Hearing Conservation (Occupational Noise Exposure) | 1910.95    | 332.50   | • Sound Level Meter Testing  
• Annual Audiograms                                                                               | Initial and Annual Refresher                  |
| Personal Protective Equipment           | 1910.132, 33, 35, 36, 38 | 332.50   | • Certification of PPE Hazard Assessment                                                       | Initial and when changes occur                |
| Powered Industrial Trucks (Forklifts)   | 1910.178    | 332.50   | • Competent operating skills                                                                  | Initial and re-evaluation every 3 years       |
| Respiratory Protection                  | 1910.134    | 332.50   | • Hazard Assessment  
• Annual fit-testing  
• Medical Evaluation                                                                              | Initial and Annual Refresher                  |
| Recording and Reporting Injuries & Illnesses | 1904.29, 32 | 332.10   | • Posting - Annually February thru April                                                       | Annual submission of form SBD - 10710 to DSPS on 3/1 |

---

These regulations and requirements are subject to change based on updates and compliance standards. Always consult the latest official sources for the most current information.
### Additional Regulatory Requirements

<table>
<thead>
<tr>
<th>Name</th>
<th>Requirement</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive Wheel Equipment</td>
<td>Inspection of wheel and ring test</td>
<td>Before mounting</td>
</tr>
<tr>
<td></td>
<td>Measure spindle speed of the machine</td>
<td>When mounting a new wheel</td>
</tr>
<tr>
<td>Air Receivers</td>
<td>Open and drain liquid from receiver</td>
<td>When necessary</td>
</tr>
<tr>
<td></td>
<td>Test safety valve</td>
<td>At frequent intervals</td>
</tr>
<tr>
<td>Automatic Sprinkler Systems</td>
<td>Open inspectors test valve</td>
<td>Biannually</td>
</tr>
<tr>
<td></td>
<td>Main drain flow test</td>
<td>Annually</td>
</tr>
<tr>
<td>Electrical Protective Devices</td>
<td>Inspection for damage</td>
<td>Before each day’s use</td>
</tr>
<tr>
<td></td>
<td>Electrical test</td>
<td>Pre-determined intervals</td>
</tr>
<tr>
<td>Employee Alarm Systems</td>
<td>Test reliability and adequacy of on-supervised employee alarm system</td>
<td>Bimonthly</td>
</tr>
<tr>
<td></td>
<td>Test reliability and adequacy of supervised employee alarm system</td>
<td>Annually</td>
</tr>
<tr>
<td>Fire Detection Systems</td>
<td>Cleaning of detection devices</td>
<td>Periodically</td>
</tr>
<tr>
<td>First Aid Kits</td>
<td>Keep the kit functional</td>
<td>Periodically</td>
</tr>
<tr>
<td>Hoisting Equipment</td>
<td>Inspection</td>
<td>Initially</td>
</tr>
<tr>
<td>Lab Fume Hoods</td>
<td>Operable fume hood testing</td>
<td>Annually for minimum average face velocity</td>
</tr>
<tr>
<td>Ladders</td>
<td>Inspect for defects</td>
<td>Periodic</td>
</tr>
<tr>
<td>Mechanical Power Presses</td>
<td>Presence sensing device initiation validation by third party</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>Refresher training of operators</td>
<td>Annually</td>
</tr>
<tr>
<td>Overhead &amp; Gantry Cranes</td>
<td>Periodic inspection</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>Frequent inspection</td>
<td>Daily to monthly intervals</td>
</tr>
<tr>
<td></td>
<td>Inspection of standby cranes</td>
<td>Semi-annual-minimum</td>
</tr>
<tr>
<td>Portable Fire Extinguisher</td>
<td>Visual inspection</td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>Maintenance check</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>Refresher training</td>
<td>Annually</td>
</tr>
<tr>
<td>Portable Metal ladders</td>
<td>Inspection</td>
<td>Regularly based on use</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>Hoisting machine, cable and equipment inspection</td>
<td>After installation and every 30 days thereafter</td>
</tr>
<tr>
<td>Slings</td>
<td>Inspection by a competent person</td>
<td>Before use</td>
</tr>
<tr>
<td></td>
<td>Thorough inspection</td>
<td>Based on severity of use but at least annually</td>
</tr>
<tr>
<td>MSHA Refresher Training</td>
<td>8-hour refresher training</td>
<td>Annually</td>
</tr>
<tr>
<td>First Aid/CPR/AED</td>
<td>Required for Confined Space Entry</td>
<td>1-3 years pending who certified the training</td>
</tr>
</tbody>
</table>
# Environmental Compliance Regulations

<table>
<thead>
<tr>
<th>Name</th>
<th>Regulation</th>
<th>Requirements</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NR 406 &amp; 407</td>
<td></td>
<td>• Construction Permits (Source Specific) and Facility Wide (Title V) Operating Permits for Air Emission Sources</td>
<td></td>
</tr>
<tr>
<td>NR 419.03 and NR 424.03</td>
<td></td>
<td>• Control of Organic Compound Emissions - General Limitations and Process Lines</td>
<td></td>
</tr>
<tr>
<td>NR 438</td>
<td></td>
<td>• Annual Emissions Reporting</td>
<td>Due date of 3/1</td>
</tr>
<tr>
<td>NR 440.688</td>
<td></td>
<td>• New Source Performance Standards for Nonmetallic Mining Processing Plants</td>
<td>Air Permits for crushers, mills, screens, conveyors at quarries and pits. Air permits for hot mix asphalt plants, dryers, screening, storing, weighing, transfer.</td>
</tr>
<tr>
<td>NR 440.25</td>
<td></td>
<td>• New Source Performance Standards for Asphalt Plants</td>
<td></td>
</tr>
<tr>
<td>NR 445</td>
<td></td>
<td>• Control of State Hazardous Air Pollutants (HAPs)</td>
<td></td>
</tr>
<tr>
<td>40 CFR Part 63</td>
<td></td>
<td>• HESHAPs - National Emission Standards for controlling metal HAPs from Area Sources</td>
<td>6H - Paint Stripping and Misc. surface coating 6X - Metal Fabrication and Finishing ZZZZ - Emergency Generator Reciprocating Engines</td>
</tr>
<tr>
<td><strong>SARA 311</strong></td>
<td>40 CFR Part 370 (EPA)</td>
<td>• Submit copies of Material/Safety Data Sheets to SERC, LEPC and Fire Dept.</td>
<td>Initial Submission with continual updates:</td>
</tr>
<tr>
<td><strong>SARA 312</strong></td>
<td>40 CFR Part 370 (EPA)</td>
<td>• Annually submit emergency and hazardous chemical inventory form to local LEPC and Fire Department for chemicals stored in excess of 10,000 pounds.</td>
<td>Due date of 3/1 - annual requirement in effect after initial SARA 311 is submitted.</td>
</tr>
<tr>
<td><strong>SARA 313</strong></td>
<td>40 CFR Part 370 (EPA)</td>
<td>• Annually submit Form R/A to EPA for toxic chemicals manufactured or processed in excess of 25,000 pounds or &quot;otherwise used&quot; in excess of 10,000 pounds</td>
<td>Due date of 7/1</td>
</tr>
<tr>
<td><strong>SPCC - Spill Prevention Control &amp; Countermeasure Plans</strong></td>
<td>40 CFR Part 112 (EPA)</td>
<td>• Plan required if facility has “oil” storage capacity in tanks, oil-filled equipment, or containers in excess of 1,320 gallons stored in 55 gallon drums or larger.</td>
<td>Update every 5 years.</td>
</tr>
<tr>
<td><strong>Storage of Flammable, Combustible, Hazardous Liquids and CERCLA® Hazardous Materials</strong></td>
<td>Chapter ATCP 93 (WI)</td>
<td>• Plan required if facility has “oil” storage capacity in tanks, oil-filled equipment, or containers in excess of 1,320 gallons stored in 55 gallon drums or larger.</td>
<td>For complete information visit the Wisconsin Administrative Code website.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Name</th>
<th>Regulation</th>
<th>Requirements</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm Water</td>
<td>NR 216 Subchapter I-Municipal</td>
<td>• Prepare Storm Water Pollution Prevention Plan, conduct compliance inspections, plan updates, and best management practices.</td>
<td>Owners or operators of municipal separate storm sewer systems shall obtain coverage under a WPDES municipal storm water permit.</td>
</tr>
<tr>
<td></td>
<td>Subchapter II-Industrial Storm</td>
<td>• Prepare Storm Water Pollution Prevention Plan, conduct annual compliance inspections &amp; plan updates, semi-annual &amp; quarterly inspections, and best management practices.</td>
<td>Submit a certification of no exposure or submit notice of intent to discharge and comply with Tier 2 storm water discharge permit.</td>
</tr>
<tr>
<td></td>
<td>Storm Water Permit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NR 216 Subchapter III-Construction Sites Storm Water Permit</td>
<td>• Prepare Storm Water Erosion Control &amp; Management Plan, conduct compliance inspections, and best management practices.</td>
<td>Landowners of construction sites where more than one acre of land will be disturbed require coverage under the construction site Storm Water Run-off General Permit.</td>
</tr>
<tr>
<td>Wastewater</td>
<td>WWTP regulations</td>
<td>• Prohibited discharge requirements; defines users that need permits; defines significant industrial users.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NR 200</td>
<td>• Defines procedure for applying for a wastewater discharge permit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NR 205</td>
<td>• WPDES permit general conditions defined in this regulation</td>
<td>Wastewater, Storm water non-contact cooling water, metallic mining</td>
</tr>
<tr>
<td>Asbestos</td>
<td>HFS 159, NR 406 &amp; 447</td>
<td>• Asbestos waste must be stored in a leak-tight container and properly labeled.</td>
<td>Properly dispose through approved landfill.</td>
</tr>
<tr>
<td></td>
<td>Notification requirements</td>
<td>• Training is required for employees managing and removing ACM (asbestos containing materials).</td>
<td></td>
</tr>
<tr>
<td>Demolition Waste</td>
<td>NR 500</td>
<td>• Conduct testing to demonstrate debris is not a RCRA* Waste.</td>
<td>Properly dispose through approved landfill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Notify WDHR prior to removal.</td>
<td></td>
</tr>
<tr>
<td>Universal Waste - Bulbs (Lamps), Batteries, Pesticides, Mercury containing equipment</td>
<td>NR 673 (WI)</td>
<td>• Properly label “universal waste” and store in a place that will minimize breakage.</td>
<td>Properly manage through authorized Universal Waste recycler.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maintain shipping records from a bill of lading or manifest.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Date &amp; Ship within 1 year.</td>
<td></td>
</tr>
<tr>
<td>Used Antifreeze</td>
<td>Regulated as a RCRA*</td>
<td>• Storage container must be leak-tight, chemically compatible, and properly labeled “Used Antifreeze”.</td>
<td>Properly manage through authorized recycler of Antifreeze.</td>
</tr>
<tr>
<td></td>
<td>potential hazardous waste</td>
<td>• Storage container must remain closed at all times, with exception when antifreeze is being added or removed.</td>
<td></td>
</tr>
<tr>
<td>Used Oil</td>
<td>40 CFR NR 679</td>
<td>• Storage containers in good condition and properly labeled “Used Oil”.</td>
<td>Properly management through licensed transporter and authorized recycler of Used Oil.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maintain shipping record or bill of lading.</td>
<td></td>
</tr>
</tbody>
</table>
Summary

• Reduce work related injuries and illnesses
• Improve morale and productivity
• Reduce workers’ compensation costs
• Include these four elements:
  ➢ Management commitment and employee involvement
  ➢ Worksite analysis
  ➢ Hazard prevention and control
  ➢ Safety and health training
There is always room for safety improvement, how is your safety process functioning?

Thank you!

Questions?
Office Locations:

- **Wisconsin** – Monroe, Plymouth
- **Illinois** – Champaign, Freeport, Rochelle, Rockford, Springfield
- **Iowa** – Cedar Rapids, Manchester, West Union

Contact:

John Krueger, Senior Safety & Health Scientist
jkrueger@fehr-graham.com
920.858.0617