Introduction

• Safety and Health Programs
• Objective of this course is to provide training information so the student will be able to understand the significance of how an effective safety and health program can be in preventing illnesses, injuries and fatalities in construction.
• Specific educational objectives:
  – Major benefits associated with an effective Safety and Health Program.
  – Major elements included in an effective safety and health program.
  – The intent of safety and health programs and how to improve them.
  – Recognize employer requirements to provide for a safety and health program that effectively reduces and prevents employee injury, illness and fatalities.
Introduction

• Safety – Health Programs
• Every day, workplace injuries, illnesses and fatalities ...
  – Cause immeasurable pain and suffering to employees and their families.
  – Recent estimates indicate that workplace injuries and illnesses cost our nation’s businesses $170 billion per year in wasteful and often preventable expenses.
  – Effective Safety and Health Programs have proven to be a decisive factor in reducing the extent and severity of work-related injuries and illnesses.
  – Safety and Health Programs will result in reduced injury-related costs.
  – Savings, when properly administered, will exceed the cost of a workplace safety and health program.
Introduction

- Safety – Health Programs
- Liberty Mutual estimated that employers paid...
  - Almost $1 billion per week for direct workers' compensation costs for the most disabling workplace injuries and illnesses in 2005.
  - Employers that implement effective safety and health management systems may expect to significantly reduce injuries and illnesses and reduce the costs associated with these injuries and illnesses, including workers’ compensation payments, medical expenses, and lost productivity.

TIP: Employers often find that process and other changes made to improve workplace safety and health may result in significant improvements to their organization’s productivity and profitability.
Introduction

• Requirements
• OSHA regulations do not specifically require employers to have a written safety and health program or management system however ...
  – employers are advised and encouraged to institute and maintain a program that provides adequate systematic policies, procedures, and practices to protect their employees from, and allow them to recognize, job-related safety and health hazards.
Introduction

• Background
• Over the past 30 years ...
  – The occupational safety and health community has used various names to describe systematic approaches to reducing injuries and illnesses in the workplace.
  – OSHA has voluntary Safety and Health Management Program guidelines, consensus and international standards use the term "Safety and Health Management Systems," and many of OSHA's state plan states use terms such as “Safety and Health Program”, "Injury and Illness Prevention Program" and "Accident Prevention Program."

TIP: OSHA has long recognized that an employer's implementation of an effective safety and health program is a way of demonstrating good faith in promoting workplace safety and health.
Introduction

• Background
• "Injury and Illness Prevention Program (I2P2)"
  – Regardless of the title, the common goal of these approaches is to help employers reduce workplace injuries and illnesses through a systematic process that proactively addresses workplace safety and health hazards.

TIP: An effective program includes provisions for the systematic identification, evaluation, and prevention or control of general workplace hazards, specific job hazards, and potential hazards that may arise from foreseeable conditions.
• States

• What are the States doing?
  – Thirty-four states have some type of program initiatives for worker safety and health protection.
  – Programs have a variety of names, including: Accident Prevention Programs, Injury and Illness Prevention Programs, and Comprehensive Safety and Health Programs.
  – States' programs also come in a variety of forms.
  – May be voluntary or mandatory, comprehensive or partial, applicable to all employers or only to a subset, and may be provided by the State occupational safety and health agency or through the State's workers' compensation system.

LINK: http://www.osha.gov/dsg/topics/safetyhealth/states.html
Introduction

- OSHA’s Contractor Requirement
- Federal OSHA requires the employer to initiate and maintain such safety and health programs to ensure a safe and healthful place of employment.
  - These programs include:
    - Frequent and regular inspections of the job sites, materials, and equipment to be made by competent persons designated by the employers;
    - Prohibiting the use of any machinery, tool, material, or equipment which is not in compliance with OSHA requirements;
    - Provide the necessary personal protective equipment (PPE) to ensure safety at the jobsite; and
    - Provide training or implement a training program compliant with applicable standards.

- Employers are encouraged to clearly document their safety and health programs.

Introduction

• Written Program
• The extent to which the program is described in writing ...
  – Is less important than how effective it is in practice.
  – As the size of a worksite or the complexity of a hazardous operation increases, however, the need for written guidance increases to ensure clear communication of policies and priorities as well as a consistent and fair application of rules.
• Major Elements
• An effective occupational safety and health program will include the following four main elements:
  – Management commitment and employee involvement
  – Worksite analysis
  – Hazard prevention and control
  – Safety and health training.
Commitment / Involvement

- Management Commitment
- The elements of management commitment and employee involvement are ...
  - Complementary and form the core of any occupational safety and health program.
  - Management's commitment provides the motivating force and the resources for organizing and controlling activities within an organization.
  - In an effective program, management regards worker safety and health as a fundamental value of the organization and applies its commitment to safety and health protection with as much vigor to other organizational goals.
Commitment / Involvement

• Employee Involvement
• Employee involvement provides
  – The means by which workers develop and/or express their own commitment to safety and health protection for themselves and for their fellow workers.
Commitment / Involvement

- Program Recommendations
- Recommended actions:
  - State clearly a worksite policy on safe and healthful work and working conditions, so that all personnel with responsibility at the site (and personnel at other locations with responsibility for the site) fully understand the priority and importance of safety and health protection in the organization.

TIP: In implementing a safety and health program, there are various ways to provide commitment and support by management and employees.
Commitment / Involvement

• Program Recommendations

• Recommended actions:
  – Establish and communicate a clear goal for the safety and health program and define objectives for meeting that goal so that all members of the organization understand the results desired and measures planned for achieving them.
Commitment / Involvement

• Program Recommendations

• Some recommended actions:
  – Provide visible top management involvement in implementing the program so that all employees understand that management's commitment is serious.
Commitment / Involvement

• Program Recommendations

• Recommended actions:
  – Arrange 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 goal and objectives.
Commitment / Involvement

- Program Recommendations
- Some recommended actions:
  - 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.
Commitment / Involvement

• Program Recommendations
• Recommended actions:
  – Provide adequate authority and resources to responsible parties so that assigned responsibilities can be met. Resources are critical.
  – Adequate resources include time, staffing and budget.
  – Amount of time, staffing and budget depends upon the type of work.
  – The more hazardous the activity the more time, staffing and budget will be necessary.
Commitment / Involvement

• Program Recommendations

• Recommended actions:
  – Hold managers, supervisors, and employees accountable for meeting their responsibilities so that essential tasks will be safely performed.
Commitment / Involvement

• Program Recommendations

• Recommended actions:
  – Review program operations at least annually to evaluate their success in meeting the goals 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.
Commitment / Involvement

- Checklist
- Management Commitment and Employee Involvement Checklist:
  - Develop and communicate a safety and health policy to all employees.
  - Demonstrate management commitment by instilling accountability for safety and health, obeying safety rules and reviewing accident reports.
  - Conduct regular safety and health meetings involving employees, managers and supervisors.
  - Assign responsible person(s) to coordinate safety and health activities.
  - Integrate safety and health into business practices (e.g., purchases, contracts, design and development).
  - Involve employees in safety and health related activities (e.g., self-inspections, accident investigations and developing safe practices).
  - Recognize employees for safe and healthful work practices.
• Worksite Analysis

• A practical analysis of the work environment ...
  – Involves a variety of worksite examinations to identify existing hazards and conditions and operations in which changes might occur to create new hazards.
  – Unawareness of a hazard stemming from failure to examine the worksite is a sign that safety and health policies and/or practices are ineffective.
  – Effective management actively analyzes the work and worksite to anticipate and prevent harmful occurrences.
Worksite Analysis

- Suggested Actions
- Measures recommend to identify all existing and potential hazards:
  - Conduct comprehensive baseline worksite survey for safety and health and periodic comprehensive update surveys and involve employees in this effort.
Worksite Analysis

• Suggested Actions
• Measures recommend to identify all existing and potential hazards:
  – Analyze planned and new facilities, processes, materials, and equipment.
  – Easier to identify, analyze and correct worksite, activity and equipment potential hazards before the hazard is created.
Worksite Analysis

• Suggested Actions
• Measures recommend to identify all existing and potential hazards:
  – Contractors are encouraged to perform routine job hazards analyses.
  – A job hazard analysis (referred to as a JHA, Job Safety Analysis (JSA) or Activity Hazard Analysis (AHA) is a technique that focuses on job tasks as a way to identify hazards before they occur.
  – It focuses on the relationship between the worker, the task, the tools, and the work environment.
  – Ideally, after you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level.

Worksite Analysis

• Suggested Actions
• Measures recommend to identify all existing and potential hazards:
  – Assess risk factors of ergonomics applications to workers' tasks.
  – Construction is a physically demanding occupation.
  – Construction workforce handles tasks that range from carrying heavy loads to performing repetitive tasks, placing them at risk of serious injury.
  – Ergonomic related injuries, such as strains, sprains, and work-related musculoskeletal disorders, are the most common injury resulting in days away from work.

TIP: The word "Ergonomics" comes from two Greek words "ergon," meaning work, and "nomos" meaning "laws." The word "ergonomics" is used to describe the science of "designing the job to fit the worker, not forcing the worker to fit the job." Ergonomics covers all aspects of a job, from the physical stresses it places on joints, muscles, nerves, tendons, bones and the like, to environmental factors which can effect hearing, vision, and general comfort and health.
Worksite Analysis

• Suggested Actions
• Measures recommend to identify all existing and potential hazards:
  – Conduct regular site safety and health inspections so that new or previously missed hazards and failures in hazard controls are identified.
  – Frequency and extent of the inspection should be based on the nature of the hazard and activities.
Worksite Analysis

• Suggested Actions
• Measures recommend to identify all existing and potential hazards:
  – Provide a reliable system for employees to notify management personnel about conditions that appear hazardous and to receive timely and appropriate responses and encourage employees to use the system without fear of reprisal.
  – This system utilizes employee insight and experience in safety and health protection and allows employee concerns to be addressed.
Worksite Analysis

• Suggested Actions
• Measures recommend to identify all existing and potential hazards:
  – Investigate accidents and "near miss" incidents so that their causes and means of prevention can be identified.
  – Critical to investigate what behaviors and unsafe conditions potentially led to the incident.

TIP: A ten-year study of all serious injuries occurring across all Du Pont sites showed that: 96% of the injuries resulted from the unsafe acts of people or from poor work practices. Only 4% of the injuries resulted from unsafe conditions.
Worksite Analysis

• Suggested Actions
• Measures recommend to identify all existing and potential hazards:
  – Analyze injury and illness trends over time so that patterns with common causes can be identified and prevented.
  – Review of the OSHA injury and illness forms is the most common form of pattern analysis, but other records of hazards can be analyzed for patterns (e.g. inspection records and employee hazard reporting records).

**TIP:** Repeat hazards, just like repeat injuries or illnesses, mean that controls are not working.
Worksite Analysis

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

• Hazard Prevention and Control
• Where feasible,
  – Workplace hazards are prevented by effective design of the job site or job.
  – Where not feasible to eliminate such hazards, they must be controlled to prevent unsafe and unhealthful exposure.
  – Elimination or control must be accomplished in a timely manner once a hazard or potential hazard is recognized.
  – Employers should establish procedures to correct or control present or potential hazards in a timely manner.
Hazard Prevention and Control

• Recommendations
• Controlling exposures to occupational hazards is
  – The fundamental method of protecting workers.
  – Hierarchy of controls:
    • Elimination
    • Substitution
    • Engineering controls
    • Administrative controls
    • Personal protective equipment

TIP: The idea behind this hierarchy is that the control methods at the top of the list are potentially more effective and protective than those at the bottom. Following the hierarchy normally leads to the implementation of inherently safer systems, ones where the risk of illness or injury has been substantially reduced.
Hazard Prevention and Control

• Recommendations

• Procedures / measures:
  – Use engineering controls where feasible and appropriate.
  – Engineering controls includes designs or modifications to plants, equipment, ventilation systems, and processes that reduce the source of exposure.
Hazard Prevention and Control

• Recommendations
• Procedures / measures:
  – Establish, at the earliest time, safe work practices and procedures that are understood and followed by all affected parties.
  – Understanding and compliance are a result of training, positive reinforcement, correction of unsafe performance, and if necessary, enforcement through a clearly communicated disciplinary system.
Hazard Prevention and Control

- Recommendations
- Procedures / measures:
  - Use administrative controls.
  - Measures aimed at reducing employee exposure and/or duration to hazards.
  - Administrative controls include:
    - Scheduling maintenance and other high exposure operations for times when few workers are present (such as evenings, weekends).
    - Using job-rotation schedules that limit the amount of time an individual worker is exposed to a substance.
    - Using a work-rest schedule that limits the length of time a worker is exposure to a hazard.
  - Administrative controls are normally used in conjunction with other controls that more directly prevent or control exposure to the hazard.
Hazard Prevention and Control

• Recommendations
• When exposure to hazards cannot be ...
  – Engineered completely out of normal operations or maintenance work, and when safe work practices and other forms of administrative controls cannot provide sufficient additional protection, a supplementary method of control is the issuance and effective use of protective clothing or equipment.
  – This is collectively called personal protective equipment, or PPE.
  – PPE may also be appropriate for controlling hazards while engineering and work practice controls are being installed.
Hazard Prevention and Control

• Recommendations

• Procedures / measures:
  – Maintain the worksite and equipment to prevent equipment breakdowns.
  – Plan and prepare for emergencies, and conduct training and emergency drills, as needed, to ensure that proper responses to emergencies will be "second nature" for all persons involved.
Hazard Prevention and Control

- Recommendations
- Procedures / measures:
  - Establish a medical program that includes first aid onsite as well as nearby physician and emergency medical care to reduce the risk of any injury or illness that occurs.
Hazard Prevention and Control

- Checklist
- Hazard Prevention and Control include:
  - Eliminate and control workplace hazards (e.g., engineering controls, workstation design and work practices).
  - Establish a preventive maintenance program.
  - Keep employees informed of safety and health activities and conditions.
  - Plan for emergencies (e.g., create an evacuation plan, train employees and conduct fire drills).
  - Record and analyze occupational injuries and illnesses.
Safety and Health Training

- Safety and Health Training
- Training is an essential component of an effective safety and health program.
  - Training helps identify the safety and health responsibilities of both management and employees at the site.
  - Training is often most effective when incorporated into other education or performance requirements and job practices.
  - Complexity of training depends on the size and complexity of the worksite as well as the characteristics of the hazards and potential hazards at the site.
Safety and Health Training

• Employee Training
• Employee training programs ...
  – Should be designed to ensure that all employees understand and are aware of the hazards to which they may be exposed and the proper methods for avoiding such hazards.
  – Does everyone in the workplace know:
    • The workplace plan in case of a fire or other emergency?
    • General site hazards and hazards unique to a workers activity?
    • When and where PPE is required?
    • Chemicals used in the workplace to include the precautions when handling or otherwise exposed to them?

TIP: Training can help to develop the knowledge and skills needed to understand workplace hazards and safety procedures.
Safety and Health Training

• Supervisory Training

• Training of supervisors is critical.
  – Supervisors should be trained to understand the key role they play in job site safety and to enable them to carry out their safety and health responsibilities effectively.
Safety and Health Training

• Supervisory Training
• Training programs for supervisors topics:
  – Analyze the work under their supervision to anticipate and identify potential hazards.
  – Maintain physical protection in their work areas.
  – Reinforce 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.
  – Understand their safety and health responsibilities.
Safety and Health Training

- Checklist
- Training for Employees, Supervisors and 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.

**TIP:** The five principles of teaching and learning should be followed to maximize program effectiveness. They are:

- Trainees should understand the purpose of the training.
- Information should be organized to maximize effectiveness.
- People learn best when they can immediately practice and apply newly acquired knowledge and skills.
- As trainees practice, they should get feedback.
- People learn in different ways, so an effective program will incorporate a variety of training methods.
Additional Program Elements

- OSHA’s IIPP Proposed Rule
- Elements:
  - 1. Management duties
  - 2. Employee participation
  - 3. Hazard identification and assessment
  - 4. Hazard prevention and control
  - 5. Education and training
  - 6. Program evaluation

**TIP:** Federal OSHA refers to their proposed Injury and Illness Prevention Program rule as I2P2. Learn more about I2P2 at OSHA’s Injury and Illness Prevention Program website at [http://www.osha.gov/dsg/topics/safetyhealth/](http://www.osha.gov/dsg/topics/safetyhealth/)
OSHA’s IIPP Proposed Rule

These elements are similar to ...
  – IIPP requirements as specified, adopted and enforced already by some states.
  – Cal/OSHA has had an IIPP regulation since 1991.
  – As of 2012, fifteen states have IIPP type requirements.
  – OSHA has learned much from the variety of approaches taken by these 15 states.
Additional Program Elements

• Where to Find
  – Regulations specific to your state.
    • Contact your states OSHA Consultation Service and inquire on your states IIPP type programs requirements.
    • You can contact your state’s OSHA Consultation Service by clicking on the link shown and using the drop down menu to locate your state.

LINK: http://www.osha.gov/dcsp/smallbusiness/consult_directory.html
Additional Program Elements

• Elements of effective Safety/Health Program

• The program should:
  • Be in writing.
  • Be maintained at the fixed work site.
  • Begin with policy statement.
  • Specifically address responsible persons, employee compliance, employee communications, hazard assessment, accident investigation, hazard control, training / instruction and recordkeeping.
  • Be reviewed periodically and updated.
Additional Program Elements

• Coverage

• The Safety/Health Program should cover ...
  – the employers employees and all other workers who the employer controls or directs and directly supervises on the job to the extent these workers are exposed to work site and job assignment specific hazards.
Additional Program Elements

• Responsible Person
  – Responsible Person
    • It is important for the employer to identify in the Safety/Health Program the “person or persons with “authority and responsibility” for implementing the IIPP”.
    • Person or persons should be documented in writing.
    • Everyone within the organization should know who this person or persons are.
Additional Program Elements

• Employee Compliance
  – Elements include:
    • Recognition of employees
    • Training and retraining programs
    • Disciplinary actions
    • Other means that ensures employee compliance, for example:
      – Safe employee of the month.
      – Giving a cash bonus
      – Giving a special jacket or similar acknowledgement.

TIP: All permanent and intermittent workers, including managers and supervisors, are responsible for complying with safe and healthful work practices.
Additional Program Elements

• Employee Communications
  – Elements include:
    • New worker orientation
    • Meetings
    • Training programs
      – (including translation where appropriate)
    • Posting
    • Written communications
    • Anonymous notification
    • Labor/management committees, other means.

TIP: When lives or health is at stake, employee fear of reprisal over reporting an unsafe or unhealthy condition or behavior is totally unacceptable.
Additional Program Elements

- Records
- Documenting activities.
  - Keep records of:
    - Steps taken to establish and maintain the safety and health program, including records of the scheduled and periodic inspections to identify hazardous conditions and work practices.
    - Safety and health training given to employees.
    - Records should be kept for at least one year.
    - Know your states recordkeeping requirements.

**TIP:** Although some state OSHA programs have specified 1 year to maintain records, the employer may reconsider this and check with their legal counsel as many OSHA attorneys recommend that these records be maintained for considerably longer periods of time to document the employees IIPP efforts.
Summary

• Importance and elements of Safety and Health Programs.
  • The four major elements of a Safety Program include:
    – Management commitment and employee involvement
    – Worksite hazard analysis
    – Hazard prevention and control, and
    – Safety and health training
  • Other important elements include:
    – Designating a responsible person
    – Employee compliance
    – Safety communications
    – Documentation and recordkeeping

TIP: Employees and their families benefit from safety and health because:
  • their incomes are protected;
  • their family lives are not hindered by injury;
  • their stress is not increased.
Simply put, protecting people on the job is in everyone's best interest—our economy, our communities, our fellow workers and our families. Safety and health add value to businesses, workplaces and lives.
Summary

• Assistance Programs

• OSHA:
  – Consultation assistance.
  – Training and education.
  – Voluntary protection type programs.

LINK: http://www.osha.gov/dcsp/smallbusiness/consult.html
Summary

• Web Sources of information and assistance
• OSHA’s Effective Workplace Safety and Health Management Systems Fact Sheet and Checklist
• OSHA’s Injury and Illness Prevention Programs topics Page
  http://www.osha.gov/dsg/topics/safetyhealth/

• 1926 Subpart C, Safety and Health Program Management Guidelines
  http://www.osha.gov/Publications/Const_Res_Man/1926_C_SH_guide.html#N_2
• OSHA’s Safety and Health Management Systems e-Tool

• OSHA’s Small Business Handbook for Safety and Health Management Series
  http://www.osha.gov/Publications/smallbusiness/small-business.html
Summary

• Employers Responsibility
• Selected employer responsibilities under the Occupational Safety and Health Act of 1970.
  – Provide a workplace free from serious recognized hazards
  – Comply with standards, rules and regulations.
  – Inspect the worksite and examine workplace conditions.
  – Make sure employees have and use safe tools, equipment and maintain them.
  – Establish or update operating, safety and health procedures and communicate them.
  – Provide medical examinations and training when required.
  – Keep records of work-related injuries and illnesses.
  – Provide access to employee medical records and exposure records.

Summary

- Employers Responsibility
- Contractor requirements specified in Title 1926.20.
  - Initiate and maintain safety and health programs to comply with OSHA’s contractor requirements.
  - Provide for frequent and regular inspections of the job sites, materials, and equipment to be made by competent persons designated by the employers.
  - The use of any machinery, tool, material, or equipment which is not in compliance with any applicable requirement is prohibited.

TIP: Remember that many states have requirements that employers must comply with or voluntary guidelines for workplace injury and illness prevention programs.