Objectives:

- “Best Practices” Defined
- Outline and Review the Z-10 Standard
- Auditing Health & Safety Management Systems based on the Z-10 Standard
- Closing the Gap – Making the system work

“Best Practices” Defined:

From Wikipedia:

- Best practices can be defined as the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proven themselves over time for large numbers of people.

“Best Practices” Defined:

Best Practices is a philosophical approach based around continuous learning and continual improvement.

Business Buzz Words

- Best Practices
- World Class
- Total Quality Management
- Industry Best Practice
- Change Management
- Six Sigma
- Benchmarking
- Continuous Improvement
Why so many improvement initiatives?

- Increase productivity
- Ensure quality product
- Engender customer confidence & loyalty
- Why are companies in business?

To Make $$$$!

How does Safety affect a business’s ability to make money?

How does a company make money?

Money in
- Money out
= Profit $$$

Money Out

- Salaries
- Other Overhead
- Materials
- New product development & research
- Etc....
Money Out as it Relates to Safety

- Workers Compensation Premiums
- Medical Costs
- Equipment damage Costs
- Cost of lost production
- Cost of training replacement workers
- Cost of turnover
- Cost of time to fill out accident paperwork
- Legal costs
- Poor morale
- OSHA citations/penalties

<table>
<thead>
<tr>
<th>Accident Costs (dollars)</th>
<th>Company Profit Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,000</td>
<td>5%</td>
</tr>
<tr>
<td>$20,000</td>
<td>10%</td>
</tr>
<tr>
<td>$50,000</td>
<td>25%</td>
</tr>
<tr>
<td>$100,000</td>
<td>50%</td>
</tr>
<tr>
<td>$250,000</td>
<td>100%</td>
</tr>
</tbody>
</table>

Sales Necessary to Offset the Cost of Accidents and Injuries at Different Profit Margins.

Example

- $400,000 premium cost
- 10% profit margin

$400,000 in premiums = $4 Million in Sales

0.10

Best Practices in Safety

Industrial Hygiene & Safety News Poll:

1. DuPont
2. 3M
3. Alcoa
4. Dow
5. GE
6. Ford
7. GM
8. IBM
9. British Petroleum
10. UPS
The “Best Practice” in Safety is:

- To integrate safety into the business management system of the company.
- Give equal consideration to injury prevention as to quality or productivity.
- Implement management systems using current scientific and technological knowledge that prevent accidents and injuries.

**GE VPP Program Video Clip**

**SAFETY MANAGEMENT AWARDS 2006**

**Self Rating Exercise**

See “Safety Program Evaluation” handouts.
The Z-10 Standard:

1. Scope, Purpose, & Application:
   - Defines minimum requirements for occupational health and safety management systems (OHMS).
   - Purpose “…is to provide a management tool to reduce the risk of occupational injuries, illnesses, and fatalities.”
   - Applies to businesses of all sizes and types.
   - Designed to continually improve safety and health performance.

2. Definitions:
   - Compliance
   - Conformance vs. Nonconformance
   - Exposure Assessment
   - Occupational Health Assessment
   - Corrective Action vs. Preventive Action
   - Risk
The Z-10 Standard:
3. Management Leadership & Employee Participation:

3.1.1 Top management shall direct, establish, implement and maintain an OHSMS
3.1.2 Written OHS Policy that includes 4 basic areas of commitment
   - Officially authorized/endorsed by Top Management

4 Basic Areas Of Commitment To Be Included in OHS Policy:
1. Protection & Continual improvement of employee health & safety;
2. Effective employee participation;
3. Conformance with the organization’s health & safety requirements;
4. Compliance with applicable laws & regulations

Note: Example policy statement is included in Appendix A of the Z-10 Standard.

The Z-10 Standard:
3. Management Leadership & Employee Participation:

3.1.3 Responsibility & Authority:
   - Top management provides leadership and assumes overall responsibility (See Appendix B for example of roles and responsibilities).

3.2 Employee Participation:
   - Organization to establish processes to ensure effective participation of employees at all levels (See Appendix C for examples to encourage employee participation).

Barriers to Employee Participation
- Incentive programs
- Drug testing programs
- Disciplinary programs
- All should be carefully designed and implemented!!

The Z-10 Standard:
3. Management Leadership & Employee Participation:

4. Planning

• Defines planning requirements to identify and prioritize OHSMS issues (i.e. hazards, risks, system deficiencies, and opportunities for system improvement).

4.1 Initial & Ongoing Reviews
   - See Appendix D of the Standard
   - Brainstorm on internal and external factors.

Initial & Ongoing Review
(Appendix D, 32)

• Brainstorm on internal and external factors.

[Diagram of planning process]

• Defines planning requirements to identify and prioritize OHSMS issues (i.e. hazards, risks, system deficiencies, and opportunities for system improvement).

4.1 Initial & Ongoing Reviews
   See Appendix D of the Standard
   • Brainstorm on internal and external factors.
4.1.1 Initial Review

- Relevant business management systems
- Hazards, risks, controls
- Resources
- Applicable regulations, standards, and other health & safety requirements
- Assessments
- Other relevant activities (contractor, maintenance, & non-routine operations, etc.)

The Z-10 Standard: 4. Planning

4.2 Assessment & Prioritization

- Must assess risk to prioritize!

- See Appendix E of the Standard for Risk Assessment Guide

Another Example:

Risk Assessment Matrix - Appendix E, Page 35 of Z-10 Standard

<table>
<thead>
<tr>
<th>Severity of Injury or Loss</th>
<th>Consequence</th>
<th>Control</th>
<th>Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor First Aid</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Minor Injury</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Serious Injury</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Fatality</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

Risk Nomogram
The Z-10 Standard: 4.3 Objectives

- Based upon priorities developed from assessment & prioritization
- Focused on system improvements
- Consistent with organizations OHS policy
- Set, reviewed, and modified regularly
- Modified according to changing information and conditions

SMART Objectives Exercise:
The Z-10 Standard:
4.4 Implementation Plans & Allocation of Resources

- Plans shall define resources, responsibilities, timeframes, intermediate steps, and measurements of progress.
- Assign resources to achieve the objectives.

5.1 OHSMS Operational Elements

5.1.1 Hierarchy of Controls
5.1.2 Design Review & Management of Change (MOC)
5.1.3 Procurement
5.1.4 Contractors
5.1.5 Emergency Preparedness

5.1.1 Hierarchy of Controls (continued)

Must take into account:
- Nature & extent of risks
- Degree of risk reduction desired
- Requirements of applicable regulations
- Recognized “BEST PRACTICES” in industry
- Available Technology
- Cost-effectiveness
- Internal organization standards

5.1.2 Design Review & Management of Change (MOC)

- Prevent or control hazards and reduce potential risks associated with:
  - New processes or operations at the design stage
  - Changes to existing operations, products, services, or suppliers
5.1.2 Design Review & Management of Change (MOC)

- Process for design reviews and MOC shall include:
  - Identification of tasks & related health & safety hazards
  - Consideration of hazards associated with human factors (i.e. characteristics & capabilities of humans)
  - Consideration of control measures (control hierarchy)
  - Review of applicable regulations, codes, standards
  - Determination of appropriate scope and degree of the design review and MOC

5.1.3 Procurement

- Identify & evaluate H & S risks associated with purchased goods before introduction into work environment.
  - Chemicals
  - Equipment & Machinery
  - Raw materials
- Establish requirements to control potential H & S risks.
- Ensure purchased goods conform to the organization’s H & S requirements.

5.1.4 Contractors

- Establish & implement processes to identify safety and health risks:
  - To the organizations employees from contractors planned and unplanned activities
  - To the contractors’ employees from the organization’s activities
  - Shall include contractor health and safety performance criteria
- Process for coordinating OHSMS with other organizations on multi-employer worksites.

5.1.5 Emergency Preparedness
5.1.5 Emergency Preparedness

- Process to prevent, prepare for, and/or respond to emergencies, including:
  - Plans to prevent and minimize risks from potential emergencies
  - Periodic testing of plans through drills
  - Plan and procedure evaluation and update

5.2 Education, Training, Awareness & Competence

Establish processes to:
- Define & assess OHSMS competence needed for employees & contractors.
- Ensure OHSMS competence of employees and contractors through education, training or other methods.
- Ensure access to & remove barriers to participation in education and training
- Ensure training is provided in language trainees can understand
- Ensure competent trainers.

5.2 Education, Training, Awareness & Competence (continued)

- Training for engineers in safety design
- Training in incident investigation and audits
- Training for procurement personnel on impact of purchasing decisions
- Training of others involved with the identification of OHSMS issues, methods or prioritization, and controls.

5.3 Communication

- Establish and implement processes to:
  - Communicate info about OHSMS & implementation plan progress to all affected levels or the organization.
  - Achieve prompt employee reporting of injuries, illnesses, incidents, hazards, risks.
  - Encourage employees to make recommendations regarding hazard control & reporting procedures
  - Identify & remove barriers to all of the above.
5.3 Communication

• Examples of Barriers to Communication:
  – Illiteracy
  – Language barriers
  – Fear of reprisal
  – Incentive programs
  – Drug testing programs
  – Discrimination

5.4 Document & Record Control Process

Process to create and maintain documents and records specified by the OHSMS in order to:

1. Implement an effective OHSMS
2. Demonstrate or assess conformance with requirements of this standard

- OHSMS identifies documents that need to be controlled. These documents shall be reviewed and updated as necessary, with dates of revision.
- Documents/records are legible, readily identifiable and accessible, protected from damage, deterioration, or loss and retained for specified period.

Explicitly requires documentation of:

- OHS Policy (Section 3.1.2)
- Objectives (Section 4.3)
- Implementation Plan (Section 4.4 A)
- Audits (Section 6.3)
- Management Reviews (Section 7)

Examples of Documents & Records:

- Training records
- Procedures
- Policies
- Purchasing records
- MSDS
6.0 Evaluation & Corrective Action

Purpose of this section:
- Defines requirements for processes to:
  - Evaluate performance of OHSMS
  - Take corrective action when non-conformance is found
  - Include results of evaluation activities as part of the planning process and management review

6.1 Monitoring, Measurement, & Assessment

- Should develop predictive or “leading” performance indicators or measures.
  - Examples: non-conformances found during inspections, rate and timeliness of corrective actions, completion of required maintenance, or completion of required training.
- Leading indicators can be used in combination with injury & illness data (trailing indicators) to determine the effectiveness of the OHSMS.
**Workplace Inspections & Testing**
- Checklists
- Group inspections
- Industrial hygiene air monitoring
- Corrective actions should be assigned and action taken with follow-up.

**Exposure Assessment**
- Ergonomic evaluations
- Look at injury & illness data
- Assess the substances, raw materials, and chemicals that may be used.
- Assess the mechanical, electrical, or other types of physical hazards present.

**Injury, Illness, & Incident Tracking**
- Should have a reporting procedure for all work related injuries, illnesses, and incidents
- Records should be kept including the OSHA 300 log

**Employee Input**
- Employee/supervisor self-assessments
- Employee surveys (Perception surveys) – Must be anonymous
- Safety suggestion box
- Safety meeting discussions
- Barriers to employee input should be identified and eliminated

**Occupational Health Assessments**
- Medical examinations
- Biological monitoring (medical surveillance)
- Review of health records

**6.2 Incident Investigation**
**Appendix H**
- Process to investigate and analyze reported work-related incidents
- Purpose is to determine underlying deficiencies in OHSMS and other factors causing or contributing to occurrence
- Investigations shall be performed in a timely manner.
- All barriers for reporting incidents should be removed (see section 3.2 & 5.3)
6.2 Incident Investigation

- What should be investigated?
  - OSHA recordable
  - First aid injuries?
  - Near misses?
  - Motor vehicle accidents
- Organization’s OHSMS should have policy/procedure specifying what will be investigated and the level of investigation
- See Incident Investigation form example in Appendix H of the standard (p. 43), also example forms in WCF Safety & Cost Control Guidebook.

6.3 Audits

- Periodic audits
- “System” oriented rather than “compliance” oriented
- Purpose is to determine whether the organization has appropriately applied and effectively implemented OHSMS elements
- Any situation identified by the audit that may cause fatality or serious injury or illness must be immediately communicated and corrected.

6.3 Audits

- Document & communicate audit results to:
  - Those responsible for corrective & preventive action.
  - Area supervision.
  - Other affected individuals
    - Employees
    - Employee representatives
    - Contractors

The Z-10 Audit

- Z-10 Standard Sections
- Objective Evidence
- Documents
- Records
- Interviews
- Observations
## The Z-10 Audit

<table>
<thead>
<tr>
<th>Objective Evidence</th>
<th>Audit Section</th>
<th>Documents</th>
<th>Records</th>
<th>Interviewee</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Documents</td>
<td>Records</td>
<td>Interviewee</td>
<td>Observations</td>
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<td>CHIPS</td>
<td>Documents</td>
<td>Records</td>
<td>Interviewee</td>
<td>Observations</td>
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<td>Responsibility and Authority</td>
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<td>Records</td>
<td>Interviewee</td>
<td>Observations</td>
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<td>Training</td>
<td>Documents</td>
<td>Records</td>
<td>Interviewee</td>
<td>Observations</td>
<td></td>
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<tr>
<td>Processes</td>
<td>Documents</td>
<td>Records</td>
<td>Interviewee</td>
<td>Observations</td>
<td></td>
</tr>
</tbody>
</table>
6.4 Corrective & Preventive Actions

Implement process to:

- Address OHSMS deficiencies & inadequately controlled hazards
- Identify newly created hazards resulting from corrective & preventive actions – evaluate overall risk reduction
- Expedite action on hazards that could cause serious injury or illness
- Track actions taken to ensure effective implementation
6.4 Corrective & Preventive Actions

- Examples:
  - Written follow-up of audit results with assignment of responsibility.
  - Health & Safety committee or Health & Safety System Oversight committee
  - Assignment of responsibility and follow through by top management

6.5 Feedback to the Planning Process

Process to ensure that the results of monitoring, measurement, audits, incident investigation, and corrective/preventive action are included in the ongoing planning process

Feedback is ESSENTIAL!

7.0 Management Review

7.1 Management Review Process

Process for TOP MANAGEMENT to review the OHSMS at least annually & recommend improvements to continue suitability, adequacy, and effectiveness.

7.1 Management Review Process

Inputs to the Management review process shall include:
1. Progress in reduction of risk
2. Effectiveness of processes to identify, assess & prioritize risk and system deficiencies
3. Effectiveness in addressing underlying causes of risks and system deficiencies
4. Input from employees and employee representatives

7.1 Management Review Process

Inputs to the Management review process shall include (continued):
5. Status of corrective and preventive actions & changing circumstances
6. Follow-up actions from OHSMS audits & previous management reviews
7. Extent to which objectives have been met
8. Performance of OHSMS relative to expectations
7.1 Management Review Process

The Scorecard approach

- (See Appendix J, p. 51 & Example Audit Report)

<table>
<thead>
<tr>
<th>Program Element</th>
<th>Score</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Leadership</td>
<td>X</td>
<td>MODERATE</td>
</tr>
<tr>
<td>D&amp;H Policy</td>
<td>X</td>
<td>STRONG</td>
</tr>
<tr>
<td>Responsibility and Authority</td>
<td>X</td>
<td>MODERATE</td>
</tr>
<tr>
<td>Initial and Ongoing Reviews</td>
<td>X</td>
<td>STRONG</td>
</tr>
<tr>
<td>Assessment and Followup</td>
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<td>MODERATE</td>
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<td>Objective and Its penetration</td>
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<tr>
<td>Use of Records of Change</td>
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<td>STRONG</td>
</tr>
<tr>
<td>Management of Change</td>
<td>X</td>
<td>MODERATE</td>
</tr>
</tbody>
</table>

7.2 Management Review Outcomes & Follow-Up

TOP MANAGEMENT shall determine:
- Future direction of the OHSMS based on business strategies and conditions
- Need for changes to the organization’s policy, priorities, objectives, resources, or other OHSMS elements

ACTION ITEMS shall be developed from the findings of the management review

Results and ACTION ITEMS shall be documented, communicated, and tracked to COMPLETION.

Continual Improvement is the Goal

Thank You!