

PROCESS SAFETY MANAGEMENT & ELECTRICAL CITATIONS UNDERSCORE IMPORTANCE OF SAFETY TRAINING IN SOUTH CAROLINA

Top 15 Cited OSHA Standards in South Carolina*

Rank	# Cited	OSHA Standard Cited
1	114	Process Safety Management
2	95	Elect.-Wiring Design/Protection
3	93	Electrical, Wiring Methods
4	76	Machines, General Requirements
5	71	Control of Hazardous Energy, Lockout/Tagout
6	62	Mechanical Power Presses
7	55	Hazard Communication
8	52	Permit-Required Confined Spaces
9	52	Medical Services & First Aid Requirements
10	44	Mechanical Power-Transmission Apparatus
11	42	Eye & Face Protection
12	34	Electrical, Use of Equipment
13	32	Personal Protective Equipment
14	24	Formaldehyde

Listed above are the 15 standards which were most often cited during recent inspections by South Carolina OSHA of industries with 20 or more employees. As you continue to evaluate your company's 1999 health and safety compliance program, EI has selected a few of these standards for review.

Process Safety Management (PSM)

Process Safety Management (1910.119), is given as "the most frequently cited OSHA standard" in South Carolina, resulting in costly fines. A PSM program is required of all industries

that store and use highly hazardous chemicals above threshold quantities. A properly executed PSM program should include provisions for employee participation in the collection of hazard, process, and equipment information and validation of operation and maintenance procedures. Also integral to compliance is training employees of potential risks identified by each Process Hazard Analysis (PHA). Additionally, a PSM program must provide a detailed plan for emergency responses and investigations of any potentially serious incident. An audit of the program must be conducted at least every three years.

Electrical Hazards

Four of the top fifteen cited OSHA violations in South Carolina were associated with electrical safety, potentially the most serious of offenses. Electrical wiring design and protection was the second most frequently cited standard and electrical wiring methods was third. Employers should ensure that all equipment is installed according to the National Electrical

OSHA Officials Offer Several Tips for Developing a Successful PSM Plan:

- ♦ *Develop accurate Piping and Instrumentation Diagrams (P&IDs) -these are the cornerstones in the assessment of a process regulated under PSM.*
- ♦ *Keep the PSM plan simple - the Mechanical Integrity Program and Management of Change can quickly become cumbersome, making improvement in safety practices and PSM compliance unnecessarily difficult to achieve.*
- ♦ *Obtain adequate support for PSM implementation from the management of your organization. PSM compliance must have a strong commitment from top management.*

SIX STEPS TO EFFECTIVE SAFETY TRAINING

Regardless of how valuable the training information is or how critical the content may be, it is a challenge to be an effective safety compliance trainer. Professional trainers agree on several basic principles of how adults learn and what it takes to organize and conduct a good training program. The following list of training tips will enhance the transfer and retention of safety information to class participants.

1) Custom tailor the presentation.

Make sure your presentations are custom-tailored to your specific audience's needs and interests. To get attention focused on the content of the presentation, answer the question, "How does this course apply to the students?" Make sure the training curriculum and audiovisuals include actual facility situations pertinent to all employees and their particular job. Facility-specific training generates further interest and dialogue regarding the information presented, increasing the chances that course attendees will ask questions and participate in training. Solicit personal experiences regarding the course training materials from the audience and use these experiences as a teaching aid.

2) Keep it simple and stimulating.

People retain material best in short, concise segments. Initially, it takes ten minutes for a person to focus on course training materials. After the first ten minutes, the optimum learning begins and continues for about 20-30 minutes. Following this learning period, an adult's attention span begins to diminish. Therefore, an effective training program should not be more than 45 minutes long. Focusing attention on several key issues, and repeating them so participants retain these concepts, should be an instructor's objective.

3) Allow multiple avenues for learning.

Not everyone learns effectively by reading course material handouts. Most adults learn best by active course participation. In addition to a written course handout, teaching aids can include visually stimulating overheads, a special guest speaker, and class activities (such as group discussions and "hands-on" exercises, including the use of a group prop or conversation piece). Blend diversity into your programs through the use of real world examples of actual occupational experiences which reflect the course training topics.

4) Make the learning experience a positive one.

Make sure there are multiple opportunities in your training program to be successful. Create a situation where class participants are free to express their thoughts without fear of reprisal. Ask questions which have no correct or incorrect answers, but provide opportunities for discussion.

5) Use your participants as trainers.

Participants in a training program are often your best resource for practical solutions to complex safety issues. Given the

testing.

opportunity to discuss implementation of safety procedures in their work area, the experienced participants will devise new methods to incorporate safety features into their routine operations. This type of discussion serves to effectively train newer employees because of their familiarity with only a limited number of specific plant processes and operations.

6) Follow-up.

Monitor your class participants in the work environment following completion of each training course. Reinforce and reiterate fundamental course concepts through discussion of work practices with previously trained employees. Ask them how they are relating what they learned during safety training to their routine job responsibilities. Follow-up in the work environment is critical to your employees' training success.

EPA SIMPLIFIES FACILITY RESPONSE PLANNING

If your efforts to comply with Facility Response Planning are currently burdened by requirements to provide multiple and redundant environmental and safety plans, a new tool developed by the U.S. Environmental Protection Agency (EPA) may help alleviate your problem. Termed the Integrated Contingency Plan (ICP), or "One Plan" as it is also called, EPA provides a new mechanism to legally consolidate multiple plans into one unified whole. While this EPA initiative is strictly a voluntary program, EPA believes that implementation of ICP will lower costs, eliminate unnecessary paperwork, minimize duplication, and greatly simplify the process of developing and maintaining your facility's environmental and safety plans.

As an example of the complexity and diversity of Facility Response Planning compliance obligations faced by many facilities, it is not uncommon to be subject to many of the following federal regulations:

- ♦ EPA's Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements) - 40 CFR part 112.7 (d) and 112.20 - .21;
- ♦ EPA's Risk Management Programs Regulation - 40 CFR part 68;
- ♦ OSHA's Emergency Action Plan Regulation - 29 CFR 1910.38(a);
- ♦ OSHA's Process Safety Standard - 29 CFR 1910.119;
- ♦ OSHA's HAZWOPER Regulation - 29 CFR 1910.120;
- ♦ EPA's Resource Conservation and Recovery Act Contingency Planning Requirements - 40 CFR part 264, Subpart D, 40 CFR part 265, Subpart D, and 40 CFR 279.52.

Code (NEC) requirements. One of the most common violations is the use of flexible cords, instead of permanent wiring, to connect fixed equipment. The control of hazardous energy (lockout/tagout) was the fifth most cited standard in South Carolina. Employers are required to develop a written program to prevent the unexpected startup of machinery that can occur during servicing or maintenance. This program should include specific procedures which address the following: isolating equipment from its source(s) of energy, locking/tagging out the energy isolating device(s), and returning the equipment to service. Employees must be trained on these procedures and the program should be audited periodically.

Complete documentation of conformity to NEC requirements would have eliminated most electrical safety violations. **Accurately validated written safety programs and extensive employee training are key components to successful electrical safety compliance.**

Personal Protective Equipment

Two of the top 15 standards cited are associated with Personal Protective Equipment (PPE). Employers are now required to perform a Hazard Assessment of each work area. After the hazards for each work area are identified, appropriate PPE should be determined. The PPE should not only protect the employee but should not interfere with the employee's job performance, fit well, and be comfortable. Employees must be trained on how to determine the proper fit and use of the PPE required for their specific job.

In conclusion, for your facility to comply with all OSHA standards, the importance of a safety training program custom-tailored to your operational needs must be a fundamental component of an OSHA compliance program.

If you would like more information on how to ensure that your company's safety training program complies with OSHA standards, please visit our website at www.ei.com or call 1-800-717-3472. For more information refer to "NC PSM Compliance Inspections to Quadruple," EI Alert Vol. 8, No. 7 and "Beginning Compliance with the PSM Standard," EI Alert Vol. 5, No. 11. Other Alert articles referring to PSM may be obtained by calling 1-800-717-3472. For information pertaining to Electrical Safety, refer to "Electrical Safety moves to First Place as most frequently cited NC OSHA Standard," EI Alert Vol. 8, No 11.

OSHA TRAINING

An Essential Element of Safety Compliance

Compliance with OSHA standards requires that employees in general industry are trained in accordance with their specific job functions. The table on the following page, "Six Steps to Effective Safety Training," provides a summary of OSHA compliance training programs that are applicable to the majority of SIC classifications in South Carolina. In addition, all facility OSHA training programs should be evaluated annually and employee files updated to reflect recent training.

OSHA TRAINING REQUIRED BY MOST SIC CLASSIFICATIONS

Hazard Communication

Course Training should include a review of the OSHA HAZCOM standard, key elements of a hazard communication written program, an overview of MSDS and hazardous chemical labeling.

HAZWOPER

First responder awareness training should familiarize the participant with hazardous substances and other risks during an incident, levels/use of PPE, decontamination techniques, proper work practices which minimize risk from hazards, medical surveillance requirements and use of the DOT Emergency Response Guidebook.

Process Safety Management

Training emphasizes risk recognition, employee awareness and involvement and methodology associated with conducting a Process Hazard Analysis for highly hazardous chemicals.

Electrical Safety Work Practices

Training is required for qualified personnel permitted to work on or near exposed energized parts. This training focuses on techniques necessary to distinguish exposed live parts from other equipment and determine voltages/clearances associated with live parts.

Lockout/Tagout

Training should provide practical knowledge for the recognition and safe isolation of hazardous energy sources.

Equipment Training

This training should feature fundamentals associated with safe operation of industrial trucks, grinders, presses and saws and include PPE requirements for specific equipment usage.

Personal Protective Equipment

Annual training on the proper use and maintenance of PPE for hearing and respiratory protection, safety glasses, shoes and gloves, and other protective clothing.

First Aid/Injury Management

Should be taught by health professionals certified by American Red Cross or other licensing body.

Fire Prevention

Training should include emergency evacuation procedures, fire prevention, and the use of fire extinguishers.

Bloodborne Pathogens

Course training should provide an overview of OSHA Standard (29 CFR 1910.1030) and include information on epidemiology, the transmission, symptoms, and treatment of HIV, the principles of infection control, and the proper methods of disposal for regulated medical waste.

Confined Space

Training should provide a working knowledge of OSHA's permit-required confined space standard, recognition/evaluation of permit required confined space hazards, and elements of air monitoring and PPE requirements.

Hearing Conservation

Required for employees exposed to 85 dBA on an 8-hour time weighted average. Includes the effects of excessive noise, the purpose, selection, fitting of hearing protectors and the purpose/explanation of audiometric

In addition to the above regulations, many facilities are also subject to state emergency response planning requirements and several additional federal requirements. The net result of these unconsolidated requirements on you and your facility is the accumulation of multiple plans that burden and confuse your personnel with varied and separate needs for continual revisions and updates, thereby elevating costs in time and money.

The awareness of a need for ICP arose in response to a Presidential Review conducted by EPA as required by Section 112(r)(10) of the Clean Air Act Amendments (also known as the Risk Management Plan Rule). The members of this review board found that the current systems for contingency planning, while technically satisfying their statutory goals, were too complex, confusing, and costly. The findings of the Presidential Review identified a clear need for simplicity in the contingency planning process. This realization led directly to the development of ICP.

The format of ICP is relatively straight forward and divided into the following three main sections:

An Introductory Section, designed to provide users with basic information on the plan and the facility it covers.

A Core Plan, based on the National Interagency Incident Management System (NIIMS) and Incident Command System (ICS), to provide information that is time critical.

An Annex, designed to contain the more detailed supporting information on specific response management functions.

The short-term costs to assemble and consolidate the above information into an ICP is not extensive considering future benefits. EPA believes that a transition to the ICP format will enable industry to improve economic efficiency, thereby providing savings through lowered facility costs for the preparation, maintenance, submission and updating of a single plan. It is also important to note that no federal agency will require a response planning format different from that of ICP and that in the future, all federal emergency response planning regulations will eventually incorporate the use of ICP guidance.

- June 15-16 Hazwoper- First Responder Awareness
 - June 16 Hazwoper- 8-Hour Refresher Course
 - June 17 Fundamentals of Occupational Health/Safety
 - June 21-25 Certified Safety Professional Preparation
- ### RESPIRATOR FIT TESTING CLARIFIED

As your facility addresses respirator fit testing, one particular issue that may be confusing is whether to utilize the qualitative or quantitative method. OSHA allows the use of either fit testing technique regardless of whether the respirator uses a positive or negative pressure mode. To clarify appropriate fit testing, consider the following to aid in respirator selection:

- ♦ **Qualitative** fit testing is a pass/fail evaluation that relies on the response of the respirator wearer to various test agents, such as banana oil or irritant smoke.
- ♦ **Qualitative** fit testing advantages include low cost, ease of performance, and minimal time constraints. However, its **disadvantage** includes low reliability and dependence upon the sensitivity of the wearer to the test agents used.
- ♦ **Quantitative** fit testing uses numerical measurements to assess the adequacy of a respirator by measuring its fit to the wearer.
- ♦ **Quantitative** fit testing advantages include greater accuracy and reliability, as the method does not rely upon the sensitivity of the wearer to test agents. However, the **disadvantages** include the use of expensive equipment and the need to contract or employ highly trained personnel to provide respirator fit testing using their fit test devices.

In determining the fit testing method that is most appropriate for your facility, it is also important to keep in mind that the method chosen should be able to provide the necessary accuracy in meeting your respiratory fit factor requirements. A fit factor is a numerical estimate of the fit of a given respirator to the face of its wearer, specific to the particular make and model. OSHA requires that the type of fit test performed be able to provide the accuracy in fit factor that must be achieved. **If your facility is classified as a more hazardous operating environment, the fit requires greater accuracy to ensure the protective capacity of your respirators, which can be provided by quantitative fit testing.**

For more information on the Respiratory Standard, refer to , *EI Alert Vol.*

Should you have questions or concerns regarding the development and implementation of ICP, call EI's Environmental Engineering Department at 1-800-717-3472 or visit our website at www.eil.com for more information.

JUNE CALENDAR

- June 2 Hearing Conservation- Refresher Course
- June 2-4 Hearing Conserv. & Audiometric Testing
- June 15 ADA Action Plan

FOR MORE INFORMATION, VISIT OUR WEBSITE

www.eil.com

Available on our website are previous copies of the *EI Alert* as well as the 1999 Training Catalog. Questions regarding training locations or newsletter content may be directed to: vhix@eil.com.

8, No. 8 "Respiratory Protection Standard Receives Facelift". *EI's* experienced team of occupational health professionals have provided both qualitative and quantitative fit testing and pulmonary function evaluations. Please call for further details on our capabilities at 1-800-717-3472.

OSHA ELIMINATES THE "COMMON EXCUSE" IN RECORDKEEPING

OSHA inspectors have determined that they will no longer accept the common excuse of "I didn't know" as an alibi for incomplete recordkeeping. As an agency, OSHA is planning to launch a major new initiative, called the Occupational Injury and Illness Recording and Reporting Requirements, that will affect both the general and construction industries. Citing interpretations, OSHA hopes its new initiative will simplify the overall process, improve the quality of industry records, meet the needs of many users, and improve the accessibility of company records to workers.

To the individual company in general industry, OSHA's initiative involves the following specific changes: OSHA's 200 Log Form will be replaced with the OSHA CFR 1904, and elimination of earlier guidelines will remove the question and answer format. These changes are expected to simplify the overall system.

Under 29 CFR1926-Construction Safety Regulations, OSHA's new initiative will require construction facilities to comply with the above changes plus the following specific requirements. First, OSHA's 101 Log form will be replaced by the OSHA 301 Log. Second, site-controlling construction companies will be required to keep two sets of records; one for their own employees and one for their subcontractors. Third, a number of specific changes are being incorporated into subcontractor records.

There are several aspects of the new guideline that should decrease your company's administrative and recordkeeping burden over the long run. First, OSHA's head, Charles Jeffress, plans to launch a series of outreach and training programs on recordkeeping to ease the transition. Second, OSHA will not be forcing companies to record near-misses as had earlier been proposed. Third, the distinction between "injury" and "illness" will be eliminated, simplifying the process of recording injury. Finally, OSHA officials have recently indicated that the deadline for company compliance with the new requirements will probably be pushed back until January 1, 2000. Still, **OSHA is training its inspectors on the stricter procedures and increasing their ability to issue citations to your company.** It is therefore in your company's best interest to begin preparations as soon as possible to avoid being caught unprepared by the impending deadline.

If you would like to know more about OSHA's new recordkeeping requirements, please call us at 1-800-717-3472.

GOOD ERGONOMICS TOUTED AS GOOD ECONOMICS

OSHA administrator Charles Jeffress continues to build support for implementation of ergonomics by informing safety specialists in a March conference that ergonomics initiatives reduce employees' pain and suffering, improve employers' productivity and positively affect the bottom line.

Nearly 650,000 workers every year suffer serious injuries and illnesses caused by overexertion, repetition or other physical stress. It is estimated that work-related musculoskeletal disorders or WMSDs result in more than one-third of all lost workday injuries and illnesses. When other indirect factors related to ergonomics are considered, the cost for US businesses failing to take appropriate action is estimated at \$65 billion.

Jeffress' program has gained momentum as Congress vows not to "block or delay" proposed regulations that seek to reduce the physical stress of workers. When enacted, the new ergonomic standard will be tough and far-reaching in its effects on companies.

Although a rule for ergonomics generated controversy when first introduced three years ago, recent lobbying efforts of workers and a substantial body of scientific evidence indicates that enactment now seems certain. California, whose job safety agency has already adopted an ergonomic standard, recently issued its first citation.

When passed, OSHA's new ergonomic rule will require companies to perform a number of additional functions. First, management leadership must initiate employee participation by creating a reporting procedure. Second, job hazard analysis and control requires that employers undertake studies to identify possible WMSD hazards in manufacturing operations and provide information relating to high-risk tasks. Third, manufacturers must analyze jobs and eliminate or control WMSD hazards. Finally, OSHA will require companies to establish employee training programs, medical management initiatives, and mechanisms for program evaluation. Training must continue to be offered every three years. If companies can demonstrate that present policies satisfy all of the above requirements they will be allowed to use existing programs.

For more information on Ergonomics please review "ANSI Proposes New Voluntary Ergonomic Standard - OSHA to Follow by June 1999," EI Alert vol. 8, no. 8, on our website at www.eil.com.

OSHA's NOISE STANDARD Complying with Audiometric Testing Standards

The OSHA noise standard states "the employer shall establish and maintain an audiometric testing program for all employees whose exposures equal or exceed an eight-hour time-weighted average of 85 decibels."

Audiometric tests are performed by a licensed or certified audiologist, otolaryngologist or other physician, or by a qualified technician. A qualified technician must be certified by

the Council of Accreditation in Occupational Hearing Conservation (CAOHC), or has satisfactorily demonstrated competence in administering audiometric examinations, checking calibration and functioning of the audiometers being used. A technician who performs audiometric tests must report to an audiologist, otolaryngologist or physician.

Baseline audiograms are to be completed within six months of an employee's first exposure at or above 85 dBA. The employer shall establish a baseline audiogram, against which subsequent audiograms can be compared to determine if a standard threshold hearing shift has occurred. This comparison may also be done by a qualified technician. Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise.

Hearing protectors may be used as a substitute for the requirements; therefore employees can be tested after they have begun working in

Steps to OSHA Noise Compliance

- ◆ Noise Survey - determines compliance requirements.
- ◆ Selection of Hearing Protection Devices
- ◆ Employee Base-line & Annual Audiograms
- ◆ Employee Training
- ◆ Follow Up of abnormal audiograms.
- ◆ Recordkeeping.

areas that are above 85 dBA, as long as hearing protection is effectively worn prior to the test.

Audiometric tests are pure tone, air conduction, hearing threshold examinations with test frequencies including a minimum 500, 1000, 2000, 3000, 4000 and 6000 Hz. Tests are conducted with audiometers (including microprocessor audiometers) that meet the requirements outlined in the American National Standard Specification for Audiometers. Tests need to be administered in a setting meeting the requirements listed in Appendix D (mandatory) of the standard.

In addition to offering a Council for Accreditation in Occupational Hearing Conservation (CAOHC) Approved "Hearing Conservation and Audiometric Testing" training course, EI has also conducted audiometric testing for a wide variety of industrial clients. For more information

regarding noise monitoring, hearing conservation training or audiometric testing, please contact EI at 1-800-717-3472, or visit our website at www.ei.com.