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The Nuts & Bolts of Hazard Prevention & Control by Leslie Lord

Planning for workplace safety is an important part of every business, and in the long run, may reduce the costs and risks associated with occupational accidents. All private employers and public sector organizations are responsible for developing, implementing and maintaining a written hazard communication program for their places of work. Remember that safety in the workplace begins with you!

The goal of a hazard prevention and control program is to make the workplace foolproof, to the greatest extent feasible. This is an ongoing program. As your truss workplace changes, and its store of hazard information grows, the design and implementation of its preventive measures and controls will be revised and improved.

ENGINEERING CONTROLS

Your plant's work environment and its employees' jobs should be designed to eliminate or reduce exposure to hazards. These reductions are called engineering controls. Engineering controls are based on the following three principles:

1. If feasible, design the facility, equipment or process to remove the hazard and/or substitute something that is not hazardous or is less hazardous.
2. If removal is not feasible, enclose the hazard to prevent exposure in normal operations.
3. Where complete enclosure is not feasible, establish barriers or local ventilation to reduce exposure to the hazard in normal operations.

Roller gantry head with trip lever safety brake.

Roller gantry head on the plastic topped table with trip lever safety brake arm.

The most frequent sources for updating hazard information are routine inspections, employee reports of hazards, and accident/ incident investigation. Frequent inspections of saws, blades, pneumatic nail guns, presses and forklifts should be an important part of your safety program.

Consider implementing a series of job hazard analyses including change analyses, and a periodic comprehensive hazard surveys. Thoroughly evaluate how each job, from sawyers to assembly personnel to your maintenance and delivery personnel, should safely perform their duties. Evaluate each step carefully for purpose, function and potential problems.

For example, evaluate how forklifts are used in your truss plant. Are they properly maintained? Are you training the operators? Are the operators certified? Are proper loading and unloading techniques being used? Also check the forklift's traffic pattern to see if other employees regularly cross through this pattern. If so, you may want to consider alternative patterns for the safety of your employees.

Analyze your employees' protective clothing and equipment. Make sure that employees, for example sawyers, assemblers and stackers, are wearing the proper shoes, headgear, eyewear, earplugs, safety glasses and gloves for the job they perform.

ELIMINATION OF HAZARDS THROUGH DESIGN

Following are examples of designing facilities, equipment or processes to eliminate hazard:

- Redesign, change or substitute equipment to remove the source of extreme hazards. For example, make sure all belts, pulleys, gears, shafts and moving parts are guarded on saws, rollers, presses, stackers and splicers. Installing safety trip controls, such

View of the retrofitted guarding on the table saw. Note the blade guards and anti-kickback guards are in place as required.

Lock out/Tag out device, safety policy and procedures manual and other warning signs in a typical shop settings.

Studded structural gable being assembled on a steel topped gantry table. Notice the sound deadening blankets on the walls. Similar panels hand from the ceiling above

as pressure sensitive body bars, safety tripods and tripwire cables are options.
- Redesign a workstation to relieve physical stress and remove ergonomic hazards. Use of stackers, rollers and forklifts help to eliminate unnecessary lifting and undue stress on employees' backs.
- Design general ventilation with sufficient fresh outdoor air to improve air quality and generally to provide a safe, healthful atmosphere. Make sure that your truss plant has an effective sawdust collection system to minimize inhalation risks.

ENCLOSURE OF HAZARDS

When a hazard cannot be removed or replaced with a less hazardous alternative, the next best alternative is enclosure. While this may control employee exposure during production, it may not control exposures during maintenance. The following are some examples of enclosure design:

the table to reduce noise level near the steel topped table.

Vertical stacker arms coming down after stacking dropped gables for a set of attic frames. Notice the second set of trusses further down the stacker. This stacker can be set up for all the lift arms to operate together, for larger trusses, or in two smaller set-ups as shown.

- Complete enclosure of moving parts of machinery. A good example is the use of an upper hood that completely encloses the upper portion of the saw blade down to the end of the saw arbor.
- Another common example is the enclosure of rollers, plate presses and other dangerous moving parts protects workers from accidentally dropping small tools into the machine that could easily become a projectile that could strike and injure another worker.
- Using these examples, take a walk through the plant and see if there are any moving parts in operation that do not have good enclosures and as such may pose a hazard of some type.

BARRIERS OR LOCAL VENTILATION

When the potential hazard cannot be removed, replaced or enclosed, the next alternative is to create a barrier to exposure, or, in case of air contamination, local exhaust ventilation, to remove the local air contaminant from the workplace. This engineered control involves potential exposure to the worker, even in normal operations. Consequently, it should be used only in conjunction with other types of controls, such as safe work practices designed specifically for the site condition and/or personal protective equipment. Examples are:

- Machine guarding that is constructed of heavy materials, such as metal, that is firmly secured to the frame saws, sanders, rollers and presses.
- Safeguards, such as electric stops to prevent forward traveling of the saw blade and other mechanisms that disengage power and prevent the starting of machines when guards are open.

- Baffles and earplugs can be used as noise-absorbing barriers to help to eliminate unnecessary hearing damage for workers who use saws, sanders and other noise-induced machines.

Remember: By providing these safety mechanisms, you can prevent hands, arms or any part of a worker's body or clothing from making contact with dangerous moving parts. A good safety system eliminates the possibility of the operator or other workers placing parts of their bodies near hazardous moving parts.

WTCA is currently in the process of working on a comprehensive safety manual and safety program. Our goal is to have an online system where members can easily access the information they need to continually upgrade their safety practices. This will be similar to an online encyclopedia of information and programs to be used as a template. It will also ensure that your safety program meets and exceeds all governmental requirements, and in a very practical way help you manage your plant safety issues so that progress can be made in your component plant daily.

NOTE: Keep in mind that engineering controls can be very simple. They do not necessarily require an engineer to design the control that will eliminate the hazard.

Safety and health planning is effective when a workplace has:

- Rules written to apply to everyone, which address areas such as personal protective equipment, appropriate clothing, expected behavior and emergency procedures.
- Safe and healthful work practices developed specifically for each job.
- Discipline and reward procedures to help ensure that safety and health work procedures are in practice and enforced.
- A written plan for emergency situations including a list of emergencies that may arise and set procedures for response. Some emergency procedures, such as those covering medical emergencies and fire evacuation are required by OSHA rules.

SBC HOME PAGE

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