

Organizing a loss control program

The following article was written by Eugene F. Morneau, assistant safety director for Cargill Inc., Minneapolis, Minnesota. This article was provided under the guidance of Harold J. Sandvig of Cargill, JAOCS' Associate Editor for the News for Plant Safety.

A good safety record is not difficult, but it takes time to develop the proper behavior and attitude among employees and managers. Once the behavior/attitude has been developed and management is committed and involved in the program, safety and loss control can become a habit with all employees.

In order to have management's commitment and involvement, ask yourself, "What would the owners/management of vegetable oil companies do if there were a problem with the quality of their edible oil?" We assume they would investigate to find the cause, make necessary corrections and develop a procedure/standard so the problem doesn't happen again. This would be true also if there were customer complaints about employees. The same response should be applied to safety; management must be as committed and involved in safety and loss control as they are to quality control, customer relations or managing any other part of the business.

An accident is "an undesired event that results in harm to people, damage to property or loss to process." "Harm to people" isn't limited to injury to employees. This can include both injury and illness resulting from an exposure or circumstances encountered in the course of employment and pertains to contract labor as well.

If the event results in property damage or process loss, with no injury, it is still an accident. Normally, accidents result in harm to people, property and process, although there are many more property damage accidents than injury accidents. Not only is property damage expensive, but damaged tools, machinery and equipment often lead to other accidents. Analysis of the more frequently occurring property damage accidents provides valuable information for prevention and a clearer under-

standing of the causes of accident problems.

A total loss control program covers all types of losses: injury/illness to people, damage to property/equipment (damaged door or wall, broken bags, a dropped centrifuge bowl) or loss of production/product (wrong blend of hardened oils, equipment failure, product is put in the wrong tank). These are examples of accidents that can be controlled through a well-managed loss control program.

Policy statement

A safety program should start with a strong company policy statement on total loss control. This can be a short written statement of how management feels toward safety/loss control, what is expected and by whom. Don't get bogged down trying to sort out policy from procedure and standard operating procedures from rules. The most important thing is whether management's interest is accurately communicated; a safety policy is management's expression of the direction to be followed. Management should consider including the following areas of concern in the statement: personal injury, occupational illness, property damage, fire and security (Table 1).

Selection and hiring

A program is needed to assist in selecting applicants who are physically capable of performing the job required safely. This can be aided by requiring pre-employment physicals or, as a minimum, the applicant completing a physical history questionnaire. This coupled with good interview techniques helps select the most qualified applicants.

Ideally, the process is based on job standards that state the capabilities required for the job. The perfect person for the job is seldom

found, but it is worth trying for such a goal. If a person is not physically or mentally capable of doing a job, no amount of training or motivation will make that person a productive and safe worker.

Orientation of new employees

New and transferred employees should be instructed in all pertinent safety policies, procedures, rules and practices prior to being placed on the job. This can assure they are aware of the potential hazards and capable of performing the job safely.

Those who should have the benefit of orientation are new employees, employees just transferred to the facility, and individuals who are returning to a type of work they have not done for some time.

Individual job orientation is important. Here is the opportunity for the employee's immediate supervisor to get the person started on the right foot, to show that management cares enough to spend time just being helpful, to avoid letting wrong ideas and habits get started, and to help the person do the job safely, efficiently and correctly (Table 2).

Critical task analysis/procedures

Procedures for all safety and health requirements and for key quality and production elements should be developed and written. A critical task is any task critical to the operation that could cause serious personal injury/illness or major property damage or large loss of production if not performed properly.

Task analysis is the process of systematically examining a task's components to establish effective work procedures and/or practices. It involves the following:

- identifying the critical tasks to be analyzed;
- breaking each task down into its significant steps or critical activities;
- identifying potential problems relating to safety, quality, production and costs;
- developing controls for all identified problems;

TABLE 1

Safety and Health/Loss Control Policy

(Sample)

_____ is committed to the protection from accidental loss of all its resources, including employees and physical assets.

In fulfilling this commitment to protect both people and property, we will provide and maintain a safe and healthful work environment as indicated by acceptable industry standards and compliance with legislative requirements, and we will strive to eliminate any foreseeable hazards that may result in fires, security losses, property damage accidents and personal injuries/illnesses.

All employees will be equally responsible for minimizing accidents within our facilities. Job practices and procedures will be clearly defined in the Safety and Loss Control Manual for all employees to follow.

Accidental loss can be controlled through good management in combination with active employee involvement. Loss prevention is the direct responsibility of all line managers and employees alike.

All management functions, including business, line and associated management, will comply with _____ company loss prevention requirements as they apply to the design, operation and maintenance of facilities and equipment. All employees will perform their jobs properly in accordance with established procedures and operating philosophy.

I trust that all of you will join me in a personal commitment to loss prevention as a way of life.

Chief Executive Officer

Rework to suit your organization.

TABLE 2

New Employee Safety Indoctrination Check List

Employee's Name	Employee No.	Location
Date Employed	Date of Instruction	Date of Review

_____ Welcome to _____ _____ Tour of facility _____ What we do at this location

Safety Job Instructions

- | | |
|--|---|
| _____ Reporting injuries
_____ Location of first aid
_____ Smoking rules carrying matches and lighters
_____ Horseplay (Examples)
_____ Danger of airhoses
_____ Manlifts (Correct way to use)
_____ Proper clothing (shoes, loose clothing, rings)
_____ Reporting unsafe conditions
_____ Proper lifting
_____ Crossing between cars
_____ Keeping covers on conveyors and manholes
_____ No walking on belts
_____ Emergency alarm
_____ Permit system (cutting and welding-bin and tank entry-fumigation) | _____ Equipment guards
_____ Choke-ups (danger of, how to unchoke legs – screw/belt conveyors)
_____ Entering of bins-confined spaces (air quality)
_____ Bin shoveling operation (cables, sheaves, rigging cables)
_____ Life jackets on barges and open water (examples)
_____ Special clothing/protective equipment for special hazards
_____ Unsafe electrical cords and other electrical hazards
_____ Disciplinary action explained
_____ Dust control-housekeeping
_____ Equipment lockout procedure
_____ Other plant procedures
Enter: _____
_____ |
|--|---|

Review of all job / Task Procedures	Date	Date	Date	Received copy of safety code booklet	Date	Initials
-------------------------------------	------	------	------	--------------------------------------	------	----------

I have these dates _____ received instructions from my supervisor relative to the proper and safe way to do my job and he/she has explained the items initialed on this sheet.

Supervisor	Employee	REVIEW	Initials	Initials	Initials
------------	----------	--------	----------	----------	----------

- writing a standard task procedure or work practice.

A task procedure is defined as a step-by-step description of how to proceed efficiently, productively and safely to properly perform a task. A work practice is a set of positive guidelines for performing a specific work assignment properly, efficiently, productively and safely.

Education and training

Supervisors and production personnel should be adequately trained to perform assigned tasks properly. Training may be based on needs analyses, task procedures, rules, the plant emergency organization, the hazard communication program and the Right-To-Know Program.

Experience has shown the importance of the following six steps for successful employee training:

- Pinpoint training needs.
- Set training objectives.
- Decide how best to meet the training objectives.
- Secure or develop the training program.
- Do the training.
- Evaluate and follow up the training.

Training should be an ongoing process and never left to chance in the hands of the "available" worker. All persons designated as supervisors and employees who help provide on-the-job training to their co-workers should be trained as trainers. At the very least, they should know how to apply the four-step technique of proper job instruction: motivate, tell and show, test and check.

Promotion and involvement

Employees and plant management should be involved in and committed to the plant loss control program. This should include the following activities:

- Establish and use a safety/loss control policy, as well as procedures and practices.
- Participate actively in management tours specifically for safety and health.
- Take part in the investigation of major accidents, and review all high potential accidents and incidents, including near misses.

- Distribute safety/loss control letters or memos to all employees at least quarterly.

- Attend safety meetings periodically.
- Present safety commendations and awards
- Periodically chair safety promotion campaigns.
- Include safety and health/loss control on the agenda of all regularly scheduled management meetings.
- Review and act upon the findings of periodic audits of the management system for safety and health/loss control.

The safety meeting is an opportunity for managers to demonstrate their involvement in the loss control program. Discussing losses, quality problems and customer relations with all employees indicates managers are interested in areas other than production. It also is a chance to praise and give positive reinforcement for a job well done. It is important not to cancel the safety meeting because "we're too busy." Such action tells the employee that safety is not a priority. The safety meeting also is a time to train employees. Some type of off-the-job safety program that includes the employee's family also should be organized. This is an excellent means of promoting safety, motivated by displaying interest in the family unit and reducing loss costs by preventing absenteeism.

Plant inspection

Unsafe practices and conditions representing potential hazards to personnel, property or the operation should be identified for elimination or control. A general planned inspection should be conducted at least monthly by a qualified person or team, the results reviewed, and correction of deficient items scheduled with follow-up action taken by management.

Inspection is one of the best tools available to find problems and assess their risk before accidents and other losses occur. A well-managed inspection program should identify potential problems, equipment deficiencies, improper employee actions, effects of changes and inadequacies in remedial

actions; provide management with self-appraisal information, and demonstrate management commitment. The inspection is an excellent opportunity for evaluating management performance. It is a means of examining the way things are being managed and of providing a valuable picture of the following:

- well-conditioned equipment vs. key items that are about to break down;
- efficient layout vs. congestion and poor use of space;
- tools in order vs. tools scattered that must be searched for when needed;
- materials ready for use vs. being buried, behind and under things;
- safe work areas vs. those with slip and trip hazards, unprotected pinch points of operation/equipment, sharp points/edges and health hazards;
- clean work areas vs. those that require a shutdown and clean-up when a customer is scheduled to visit.

Determine what to look at and know what to look for, then develop a checklist (Table 3) or written report. Whatever style chosen, the report should be routed through interested and accountable managers/supervisors for action.

Inspection, detection and correction activities are hard to beat as ways of showing employees that their safety and health are important to management and the company. When employees see that others care, they are encouraged to be involved in the safety program and to take pride in their work.

Accident/incident investigation

All accidents and incidents that have been determined reportable by management policy should be thoroughly investigated, their causes determined and prompt corrective action taken to prevent recurrence. The basic or root causes need to be determined; these often point to deficiencies in the management system, such as inadequate training, lack of supervision, inadequate maintenance, lack of purchasing controls, inadequate inspection systems, poor communication and inadequate engineering.

TABLE 3

General Physical Conditions

1. **Electrical fixtures:** wiring, cords, grounds and connections.
2. **Mechanical power transmission:** condition and guarding.
3. **Machine guarding:** nip points, cutting and shear edges, presses, rotating parts and gear devices.
4. **Walking and working surfaces:** guarding and condition.
5. **Compressed gas cylinders:** segregation in storage, weather protection and restraints.
6. **Flammables:** storage, ventilation and working supply.
7. **Exits:** marking, visibility, lighting and unobstructed access.
8. **Deluge showers and eye baths:** water flow, temperature and drainage.
9. **Ladders and climbing devices:** condition, storage and proper use.
10. **Hand tools:** condition, storage and proper use.
11. **Materials handling equipment and lifting devices:** condition, proper use and storage.
12. **Scrap and refuse:** accumulation, removal, storage and disposal.
13. **Aisleways and storage stacks:** accessibility, marking and adequate dimensions.
14. **Stacking and storage:** location, segregation, stability and damage protection.
15. **Tag-out and lock-out:** adequacy, use and condition of tags and lock-out devices.

Fire Prevention and Control

1. **Fire detection and alarm system:** installation, adequacy of coverage and service testing.
2. **Sprinkler systems:** clearance for type storage, adequacy of pressure and flow volume of water or chemical supply and maintenance.
3. **Fire evacuation:** exit route maps, personnel training and emergency drills.
4. **Portable extinguishers:** correct type and mounting, locating signs and guides, unrestricted accessibility, and maintenance of serviceability.
5. **Fire prevention:** adequacy of housekeeping, waste disposal and flammable materials work controls.
6. **Fire containment:** fire control doors and seals, ventilation controls.
7. **Fire notification:** telephone and alternate systems for notification of fire team and outside services.
8. **Fire services:** hose outlets, valves and water supply adequate, compatible with local fire unit equipment, and tested for serviceability.
9. **Fire equipment:** color coding, signs and access, compliance with governmental standards.

Environmental Health

1. **Caustic, corrosive, and toxic materials:** container labels, storage, disposal and spill clean-up.
2. **Ventilation:** of toxic fumes, vapors, mists, smoke and gases.
3. **Noise exposure:** measurement and controls.
4. **Radiation exposure:** measurement and controls.
5. **Temperature extremes:** measurement and controls.
6. **Hazardous substances:** information to affected employees.
7. **Illumination:** surveys and controls.
8. **Human factors engineering:** surveys and controls.
9. **Personal protective equipment:** selection, location and compliance.
10. **External environmental protection:** evaluations and actions.

Any serious loss, including injury occupational illness, property damage, spill, fire, theft or vandalism, should be investigated promptly and thoroughly. Such losses and their effects are important for the organization because suffering, cost, liability and lost production concerns everyone.

Any accident or incident with the potential for serious loss points out significant deficiencies; the severity of the actual loss in each event is often a matter of chance. The practical approach is to investigate every accident and incident thoroughly enough to evaluate the loss potential, and then concentrate investigative efforts on high potential incidents and accidents. Each organization has to define what losses and potential losses are significant to its resources, people and public image.

Designating the investigator or investigating team is a critical first step. As with any type of problem-solving, the person with the most interest in the problem and knowledge of the work area, such as the immediate supervisor, is the obvious first choice. The investigator should be as objective as possible; the findings have to be truthful and relevant or the problem won't be solved.

Many things have to be done when an accident occurs, including care for the injured, prevention of secondary accidents (fires and explosions), inspection of the scene, interviewing witnesses, checking equipment and records, analyzing causes, writing reports, taking corrective action and getting people back to work.

All these tasks vary with the situation and the loss potential. No investigative method can be applied without adequate thought because situations vary. However, most successful investigation programs have the following steps in common:

- Respond to the emergency promptly and positively.
- Collect pertinent information about the incident.
- Analyze all significant causes.
- Develop and take remedial action.
- Review findings and recommendations.

- Follow through on the effectiveness of the actions.

Plant emergency organization (P.E.O.)

Personal injuries and property losses can be kept to a minimum through prompt action by an emergency organization trained to handle emergencies in an orderly predetermined manner. To accomplish this, a written P.E.O. should have specific duties, adequate training and simulated drill experience for each identified emergency. P.E.O. instruction should be included in the orientation of all new hires, and the program should be reviewed with all employees at least once each year.

Emergency conditions include building collapse, serious personal injury or illness, fire, tornadoes, hurricanes, earthquakes, floods, blizzards, air pollution, water pollution, civil unrest, transportation accident, chemical accidents, protest demonstration, explosion, bomb threats, riots, sabotage, blackouts, forest fires, neighboring fires, oil spills and chemical release.

Emergency action plans must be in writing and must cover all perceived emergencies. As a minimum, the plan must include the following:

- employee training;
- method of reporting emergencies;
- alarm systems;
- evacuation plans;
- a written fire plan, consisting of hazard identification, hazard control methods, housekeeping procedures, names and titles of personnel who will combat fires in the workplace and their training;
- provision for portable fire extinguishers, as well as more sophisticated firefighting equipment and documented training if employees are to do more than fight fire in the incipient stage;
- equipment maintenance;
- exit marking and control;
- control of specific hazards and cut-off valves.
- a decision on whether to have a fire brigade. If one is organized, OSHA guidelines specify the type of training and the equipment required. If a company is more than

10 minutes from the arrival of a fire department, the general recommendation is to have a fire brigade, although this decision is left to industry.

The key is first to develop plans for emergency situations most likely to occur and/or possess the greatest potential for loss. Employees then can train and drill for each identified emergency.

Fire protection

Fire protection equipment should be inspected, tested and maintained to assure reliable and proper operation. If there is a fixed sprinkler system, develop a weekly inspection and maintenance program. Fire extinguishers should be inspected monthly and tested annually.

Develop checklists tailored to the operation and equipment, similar to general safety inspection checklists. Consider the following for fire prevention and corresponding controls:

- installation, adequacy and service testing of fire detection and alarm systems;
 - sprinkler system clearance and type of storage, adequacy of pressure and flow volume of water or chemical supply and maintenance;
 - exit route maps, personnel training and emergency drills;
 - correct type and mounting of portable extinguishers, locating signs and guides, unrestricted accessibility and serviceability maintenance;
 - adequacy of housekeeping, waste disposal and flammable material work controls for fire prevention;
 - control doors and seals and ventilation controls for fire containment;
 - telephone and alternate systems for notifying fire team and outside services.
 - adequate water supply, along with hose outlets and valves compatible with local fire unit equipment and tested for serviceability.
- color-coded fire equipment with signs and access complying with governmental standards.

Housekeeping program

Establish a housekeeping program that insures a clean and orderly

workplace. Cover all areas of the plant. Assign employees to areas of responsibility. Train people to maintain the established standards. Make sure that upper management walks through the plant at least weekly to insure that the program is being maintained.

If there is dirt or disorder in the department, costs are much higher than they should be. Housekeeping inspections provide excellent opportunities to seek out signs of disorder such as the following:

- cluttered and poorly arranged areas;
- untidy and dangerous piling of materials;
- items that are obsolete;
- blocked aiseways;
- materials stuffed in corners, on overcrowded shelves, in overflowing bins and containers;
- tools and equipment left in work areas instead of being returned to tool rooms, racks, cribs or chests;

- damaged containers, drums, bags and other material;
- materials gathering dirt and rust from disuse;
- excessive quantities of certain items;
- waste, scrap and excess materials that congest work areas;
- spills, leaks and hazardous materials creating safety and health hazards.

Two key questions to ask are "Is this item necessary? Is it in its proper place?" Order means more than cleanliness or neatness. It means that things are where they ought to be for maximum productivity, quality, safety and cost control. It eliminates accidental injury and fire causes, prevents wasted energy, maintains greatest use of space, keeps inventory to a minimum, helps control property damage and waste, guarantees good shop appearance, encourages better work habits, impresses customers and reflects a well-run plant.

Order is the first step in doing anything right.

Industrial health and hygiene

Recognized potentially hazardous exposures affecting the health of employees while on the job can be kept to a minimum by reducing the hazards and controlling them through the use of personal protective equipment and employee training.

The Right-To-Know Law, respiratory and hearing conservation programs and personal protective equipment guidelines should be developed and tailored to the facility. These programs can be included under the area of industrial health and hygiene in the safety program.

ACKNOWLEDGMENTS

The International Loss Control Institute (I.L.C.I.) of Loganville, Georgia.

Highest quality stainless steel, seamless, welded handle

Refining Cups



Used in conjunction with AOCS Official Method Ca9a-52 to determine the refining loss of free fatty acids, oil and impurities when the sample is treated with alkali solutions under test conditions. The method applies to crude peanut oil, crude coconut oil, crude corn oil, crude soybean oil (expeller and hydraulic), and crude cottonseed oil (expeller and hydraulic). Cup dimensions: 4 1/2 inch diameter and 4 1/8 inch depth. Capacity: 960 ml.

Price

Carton of 6 cups: \$96/carton
Broken cartons: \$20/cup
Postage and handling extra.

Order from

American Oil Chemists' Society
P.O. Box 3489
Champaign, IL 61821-0489 USA