EMPLOYEE TRAINING

INTRODUCTION

Studies of incidents in a variety of industries and activities have shown that about 85% of all accidents (unplanned or unexpected incidents) are caused by human error. Only 15% of accidents result from equipment failure. This split between human error and equipment failure can vary depending on interpretation of data when developing cause information. For example, accidents resulting from the selection of inadequate hardware could be classified either as hardware failure or as human error. However, in spite of these interpretative differences, the 85% – 15% split has remained fairly consistent among numerous studies.

Human error encompasses a broad range of problems including inadequate job skills, poor judgment, failure to obey safety rules, horseplay, proceeding too fast, abuse of drugs or alcohol, inadequate or improper supervision and distractions due to psychological or domestic problems. These problems can be addressed through employee training.

Most workers will not deliberately jeopardize their safety, the safety of others, or their jobs by using improper or unsafe work practices. Management should ensure that employees have adequate job skills, and that they are fully informed of company policies and safety requirements. Firm and skillful supervision is necessary for the control and direction of company efforts.

POSITION

To reduce loss caused by human error, employees must be trained in proper work practices. Management must be committed to employee training and dedicate the resources necessary to develop and maintain the program.

This training may include information on specific job skills, good safety practices, and company regulations and requirements. Train supervisors and managers in good leadership and supervisory skills to ensure that the proper work practices are implemented.

To develop an effective employee training program:

- Appoint a training director to supervise the overall program;
- Inform all employees of the need for proper training;
- Demonstrate support of the training program by making certain that no management decision relating to job performance and procedures violates those taught in the training program.

Duties of the Training Director:

- Establish the scope of all segments of the program, making certain that loss prevention aspects of a job and critical procedures to be followed are highlighted as well as routine job procedures;
- Write training program segments;
- Establish the degree of participation and input by line supervisors;
- Train the instructors;
- Establish training schedules;
- Establish retraining schedules;
- Implement feedback and follow-up programs.

The training program segments are categorized as Basic and Job-Specific. The Basic segments apply to all employees and the Job-Specific segments to individual job functions.

Include the following in Basic segments:

- Corporate operating policies;
- General plant safety rules;
- Facility layout, operations and hazards;
- Alarm and signaling systems;
- Emergency procedures.

Include the following in Job-Specific segments:

- Process equipment operation;
- Fire and explosion hazards associated with the operation;
- Familiarization with operating manuals for the equipment;
- Highlighting of critical procedures which must be followed.

Include training for outside contractors and visitors in training programs. Information specific to their duties and roles in the plant should be covered. (See PRC.1.0.4.)

DISCUSSION

AXA XL Risk Consulting's experience during a 10 yr period shows that errors by process operators accounted for 30% of the major property losses in the chemical and petrochemical industries. This indicates a need for training in relatively specific job skills. If operators were routinely violating safety rules, improved supervisory skills were needed. Even if an employer has a good training program, it is of no value if management allows employees to sense that unsafe work practices will be tolerated. Production short cuts that are encouraged by management without due consideration of the loss prevention aspects will negate the effectiveness of the best training program.

In today's increasingly sophisticated technological society, virtually every job requires training, much of it in-depth. An employee training program must be all-inclusive, anticipating and covering all jobs and all situations that might occur. For example, all operators in the chemical and petrochemical industry should be educated in the hazards involved in their job and in the functions of the safety control equipment. They should be forbidden to run the process when any critical systems or components are out of order, and trained in critical procedures and manual emergency shutdown procedures.

Training methods that may have been effective in the past may not be so today, due to changes in employees' attitudes toward their jobs. The routine of automation may dull employees' reactions during emergencies causing them to make slow or improper decisions under unusual circumstances. Training program can sharpen employees' reactions making their responses more effective.

Numerous articles discuss well-established training methods. These training methods, based on an understanding of behavior, suggest that:

- People behave in a manner that is sensible and logical to them.
- Behavior is influenced by its consequences.
- People will change their behavior if they know how and see a need to change.
- The training process must provide for the acquisition of knowledge and skills to enable people to change their performance.
- The job environment must allow sufficient practice and reinforcement to enable people to change their performance.

All training programs must have a clearly written format. Each segment of the program must be well defined. Training should be broken down into logical parts so that progress through the program may be readily measured. Trainees should be given feedback at frequent intervals to reinforce their progress.

Depending upon the number of trainees and the type of training needed, the program may involve formal classroom sessions, process simulators, self-study that employs such aids as videotape, audiocassettes, interactive computer programs, or a combination of these methods. On-the-job sessions with line supervisors can reinforce the training program. Where on-the-job training is considered the most appropriate and practicable type of training, a formal outline or method can ensure that all important aspects and safety related information are covered during the training period.

To obtain feedback on the effectiveness of the program, the training director can simulate problems using situations that will allow employees to respond as realistically as possible. Observing their response will give the training director an indication of the effectiveness of the training programs. Additional simulated problems given at carefully chosen intervals will indicate when retraining is needed. The training director can review loss reports, near-miss incident reports, production reports and product defect reports to gain additional feedback on the effectiveness of the training program.