
7 Safety Leadership and Organization—Part 1

SAFETY SYSTEM COMPONENTS OR ELEMENTS

A safety management system (SMS) consists of a number of items, systems, sub-systems, processes, and activities, prescribed by elements, which need to concur on a regular basis in order to provide an ongoing system of risk control. The reduction of risk is the only way to eliminate losses caused by accidents.

Many of these elements (i.e., processes or programs) are required by safety and health legislation and are not new or unknown activities. They must, however, be integrated into the day-to-day management of the organization to be effective and sustainable. These elements will vary from workplace to workplace even though there are some core elements that are common and applicable to most organizations. A comprehensive safety management system normally comprises sections, elements, minimum standards, and minimum standards detail, and could consist of at least 70–80 elements. To explain the sections and elements of a safety management system, an example safety management system (Example SMS), is used.

EXAMPLE SAFETY MANAGEMENT SYSTEM (EXAMPLE SMS)

The Example SMS is based on the original National Occupational Safety Association (NOSA) 5-Star Safety Management System, which has been extensively modified to encompass most of the requirements of most of the Guidelines (NOSA, 1995). The Example SMS consists of 5 sections and a total of 84 elements. Section 1, *Safety Leadership and Organization* of the Example SMS, consists of 30 elements. The first 5 elements will be discussed in this chapter and the last 25 elements will be discussed in Chapter 8 (Figure 7.1).

SECTIONS, ELEMENTS, AND SUB-ELEMENTS

All elements have prescribed *minimum standards* as well as *minimum standard detail*. Many elements have sub-sections. The five sections of the Example SMS are: *Safety Leadership and Organization* (Section 1), *Electrical, Mechanical and Personal Safeguarding* (Section 2), *Emergency Preparedness and Fire Prevention and Protection* (Section 3), *Accident Reporting and Investigation* (Section 4), *Physical Workplace Environment* (Section 5).

One of the elements of the *Safety Leadership and Organization* section is that of Safety Committees. One of the *minimum standards* of this element would be

Number	Element title	Number	Element title
1.1	Managers Responsible for Safety and Health	1.16	Safety Newsletters
1.2	Safety Policy: Management Involvement	1.17	Safety and Health Representatives
1.3	Safety Performance Indicators (SPI)	1.18	Safety Management System Audits
1.4	Safety Committees	1.19	External Third Party Audits
1.5	Management of Change	1.20	Safety Publicity Boards
1.6	Safety and Health Training	1.21	Publicity, Bulletins, Newsletters, etc.
1.7	Work Permits	1.22	Safety Competitions
1.8	Organization Risk Management	1.23	Toolbox Talks, Safety Briefings, etc.
1.9	Written Safe Work Procedures	1.24	Safety Specifications
1.10	Planned Job Observation	1.25	Safety Rule Book
1.11	Safety Inspections	1.26	Safety Reference Library
1.12	Safety Suggestion Schemes	1.27	Public Safety
1.13	Employee Job Specifications	1.28	Annual Report - Safety and Health
1.14	Medical Examinations	1.29	System Documentation Control
1.15	Off-the-job Safety	1.30	Continual Improvement

FIGURE 7.1 The 30 Elements of Section 1, of the Example SMS.

the formation of committees at various levels or departments within the organization. Another *minimum standard* would be different types of committees needed, for example, permit committees, accident investigation committees, etc.

A *minimum standard detail* of the first minimum standard would be the keeping of minutes of meetings. Another *minimum standard detail* would be, for example, that the minutes are signed by the chairperson (manager or supervisor) of the committee.

Each minimum standard detail has a score allocated for auditing purposes. The Example SMS ranks each minimum standard detail on a 1–5 scale, and the main element has a weighting of 1–10 scale, dependent on the risk ranking of the element or the benefit derived from the element.

EXAMPLE SMS

Section: *Management Leadership and Organization* (Section 1).

Element: *Safety Committees*. (Section 1, Element 1.4) (S1, E 1.4) (Weighting 4).

Minimum Standard: *Committees formed to meet the legal requirements, or organization's need.* (20).

- *Minimum Standard detail 1:* All departments to have a safety committee. (1–5)
- *Minimum Standard detail 2:* Committees to meet monthly. (1–5)
- *Minimum Standard detail 3:* Minutes to be kept of each meeting. (1–5)
- *Minimum Standard detail 4:* Minutes to be signed by chairperson of the committee. (1–5)

Total maximum score of the element (*Safety Committees*) is: 20 points (4 minimum standard detail with a maximum of 5 points each). Weighting 4, for example, possible maximum score: 80 points (20 × 4).

ELEMENT STANDARD REQUIREMENTS

Each element of the safety system should have a written standard which can be stored in hardcopy or as an electronic file. Each standard should have: a title, an element number, a date, revision number, legal reference, sources and references, signature of authorizer, name(s) of compiler(s), and reviewers' signatures. The standard should also contain an objective, minimum standard requirements, minimum standard details, the process, measurable criteria, and it must allocate responsibility for actions.

CORE (COMMON) ELEMENTS OR COMPONENTS

Core elements form the basic safety management system elements. These are elements common to most workplaces, industries and mines, and include elements such as the following:

- Work permits
- Safety committees
- Management responsibility
- Employee participation
- Business order (Housekeeping)
- Electrical safety
- Motorized transport safety
- Occupational hygiene
- Accident investigation
- Personal and mechanical guarding
- Fire precautions
- Inspections and many more

PRINCIPLE OF THE CRITICAL FEW

The principle of the critical few states that *a small number of basic causes could give rise to the majority of safety problems*. Critical elements could be responsible for the majority of injury causing accidents. These critical few items (critical safety elements) should receive maximum safety control to minimize their potential for causing (the majority) of problems. Precontact control means directing safety efforts towards controlling these crucial areas before a loss occurs.

WHAT ARE CRITICAL ELEMENTS?

Critical safety elements are elements, identified by the hazard identification and risk assessment process that pose the highest risk to the organization. These may include environmental and employee factor elements, which need to be controlled constantly to prevent losses occurring.

Critical safety elements are those elements most likely to give rise to losses. Past experience based on thousands of safety inspections and audits have shown that control over certain aspects of the work environment and work practices can significantly reduce accidents. Critical elements would have a higher weighting allocated to them for auditing purposes as a result of their risk ranking.

Examples

Critical safety elements are elements that reduce risks posed to employees and which need to be managed on an ongoing basis to prevent accidental loss. Critical elements may differ from workplace to workplace and could include elements such as the following:

- Hazardous material handling
- Confined space entry
- Work at heights
- Machine guarding
- Ergonomics
- Radiation safety
- Rescue procedures
- Underground ventilation
- Fire prevention, etc.

Risk assessments will identify which safety system elements are critical to the organization and which are not so critical but also important.

Why These Elements?

Experience has shown that there are between 70 and 80 critical safety activities (elements) that need to be in operation to constitute an effective safety management system. Most of these are processes common to most workplaces. Dependent on the nature of the business and its operations, these common elements will form the basis of the safety management system. These elements may vary from organization to organization and from industry to industry. The emphasis on individual elements will also vary according to the nature of the process, culture of the workforce, and category of business such as mining, the iron and steel industry, transportation, the fishing industry, manufacturing, construction, etc.

Benefit

The benefit of controlling critical safety elements, is that the work being done to manage safety is channeled at reducing the risk and potential loss in areas that have been identified as crucial. Some critical safety elements help control the health and

safety of the work environment, which would contribute to the reduction of losses due to an unsafe workplace.

Other critical safety elements are directed towards the protection of the employees within a workplace. These controls would include items such as critical task procedures, rules, training and activities that involve, motivating, guiding, and training employees in safe work practices.

Elements that have a direct influence on the work environment include items such as the following:

- Business order (Housekeeping)
- Electrical safety
- Stacking and storage
- Ventilation
- Lifting gear
- Demarcation
- Machine guarding
- Hazardous substance control
- Lighting
- Hazardous environment controls, etc.

Elements that help to ensure safe work procedures and habits could include:

- Critical task procedures
- Rules and regulations
- Job safe procedures (JSPs)
- Appointment of Health and Safety Representative
- Safety and health training
- Regular safety meetings
- Safety communication
- Safety promotion
- Medical examinations, etc.

PRECONTACT, CONTACT, AND POST-CONTACT CONTROL

There are three areas of safety control. They are the precontact stage, the contact stage, and the post-contact stage. Precontact activities are the interventions and processes that take place before any accident occurs. They are ongoing hazard identification and risk reduction processes that occur according to the safety plan, objectives, and standards.

Most safety efforts are aimed at the post-contact stage, when a loss has already occurred. The accident has happened and there is a sudden response to now rectify the accident causing problems, that is reactive safety and not proactive safety. Control before the accident and subsequent loss, is taking action at the precontact stage and is proactive safety. Precontact management control of risk is facilitated by a structured safety management system and its components (Figure 7.2).

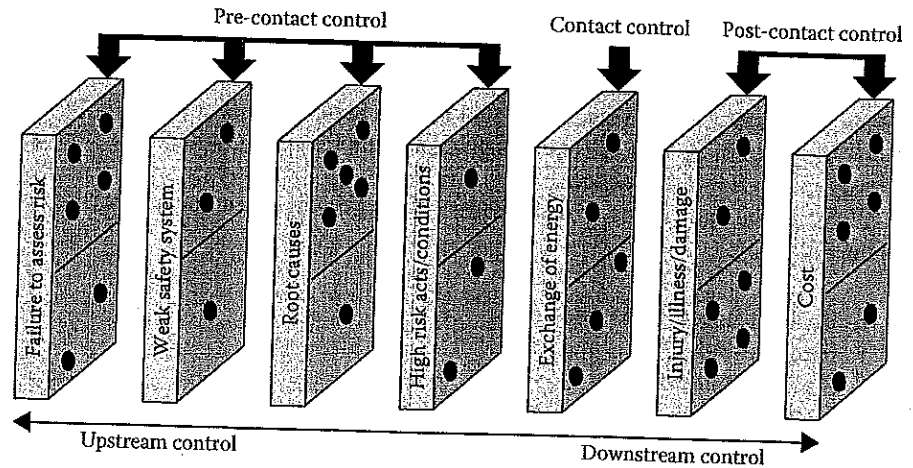


FIGURE 7.2 Precontact, contact, and post-contact control.

SAFETY MANAGEMENT SYSTEM BASIC ELEMENTS

A safety management system embraces ongoing activities and efforts directed to control accidental losses by monitoring critical safety elements on an ongoing basis. The monitoring includes the promotion, auditing and improvement of the critical and other elements constantly.

The success of many safety management systems is that they begin the implementation of the system with the tangible, visible safety elements, and then move onto the intangible elements. It is recommended that the basics of safety be put in place first and then the more intangible, long-term benefit elements be phased in next. Management and employee buy-in is easier when short-term gains are realized and they can see changes to the workplace being brought about by the safety management system. This also helps to reduce resistance to change.

BUSINESS ORDER AND LEGAL REQUIREMENTS

When faced with the task of implementing a safety system, the organization should implement processes that are required by safety legislation, and elements that will give the best return with the lowest cost, and within the shortest time. Business order (good housekeeping) is a basic requirement of international safety legislation and is a good place to start. Once the workplace, including offices, storerooms, kitchens, and all work areas are in order (a place for everything and everything in its place, always), the impact of the safety system becomes visible. Business order is the foundation of a safety management system and as one safety expert put it, "If you can't manage the workplace, how can you manage the people in that workplace?"

Getting the organization in order is a management responsibility and once it is achieved a number of hazards would have been eliminated, and the foundation established on which to build the safety management system.

MANAGEMENT AUTHORITY, RESPONSIBILITY, AND ACCOUNTABILITY

DEFINITIONS

- *Safety authority* has already been defined as the right or power assigned to an executive or a manager in order to achieve certain organizational safety goals.
- *Safety responsibility* is a duty, obligation, or liability toward safety for which someone is accountable.
- *Safety accountability* is being liable to be called on to render an account on safety and be answerable for safety issues.

MANAGERS DESIGNATED AS RESPONSIBLE FOR SAFETY AND HEALTH (SECTION 1, ELEMENT 1.1) (S1, E1.1)

MANAGEMENT SAFETY APPOINTMENTS

Many of the Guidelines recommend that senior management appoints one of its top managers responsible to coordinate the safety management system implementation and maintenance. This person is sometimes referred to as the Safety Champion. This appointee must report to the executive committee on a regular basis as to the status of the safety system and these reports must form the basis of future system improvements. This appointment should be in writing and a brief description of duties and functions should be spelt out. This appointment must be made known to the entire organization.

MANAGERS

All managers in the management line must be appointed in writing, responsible for the implementation and maintenance of the safety management system in their areas of responsibility. These appointments must spell out their safety authority, responsibility, and accountability, and must be acknowledged by the appointees.

SUPERVISORS

All supervisors, team leaders, or foremen in the management line must be appointed in writing, responsible for the implementation and maintenance of the safety management system in their areas of responsibility. These appointments must spell out their safety authority, responsibility, and accountability and must be acknowledged and accepted by the appointees.

SAFETY AND HEALTH REPRESENTATIVES

The selection, nomination, and appointment of Safety and Health Representatives (Safety Representatives) is perhaps the next most important appointment that senior management can make. In some instances, these appointments are a legal requirement prescribed by safety and labor law, and must be done accordingly.

Selected individuals from within the workplace are selected or nominated, either by management or the workforce, or both, to act as safety representatives for the forthcoming period, normally a year. They are then appointed in writing and their duties and functions are detailed in the appointment document.

The Safety Representatives should undergo suitable training to prepare them for their duties which, briefly summarized, is to conduct a monthly inspection of their work areas, identify high-risk acts and unsafe conditions, and complete the inspection report. Once the inspection is completed, they present the report to their supervisor or manager who undertakes to take action on the deviations noted.

SAFETY DEPARTMENT

The safety department appointments are done by management. Getting the right person in the right job is vital if the safety department are to be effective coordinators of the safety system. The safety department cannot, and should not, be held accountable for the safety performance of an organization. All employees have some safety responsibility, but management, senior and line, have ultimate safety authority therefore is ultimately accountable.

Safety Department Job Purpose

The main objective of the safety department should be to guide, educate, train, and motivate all levels of management, unions, contractors, and the workforce in the techniques of accident and industrial illness and disease prevention, in an ongoing effort to reduce risk to an acceptable level in order to prevent injury and illness to employees and damage to property. They also advise on, and coordinate the safety management system. The safety department should be a staff function and not a line function. To summarize their function: Guide, Educate, Train, Motivate, Advise, and Coordinate (GETMAC).

APPOINTING PROFESSIONALS

When appointing safety and health department employees, management has a duty to the profession to ensure suitably qualified and experienced practitioners are selected for the safety department. Proper job descriptions based on the American National Standards Institute (ANSI) guidelines: ANSI/ASSE Z590.2 – 2003, *Criteria for Establishing the Scope and Functions of the Professional Safety Positions*, or similar, should be used as selection and training criteria for safety staff.

Safety departments should be very professional. Their true place is advising management and coordinating the activities of an ongoing safety management system. They cannot improve the safety by accepting the responsibility for safety. They should not directly try to influence behaviors of employees. Only management can do that.

SAFETY COORDINATOR

The Safety Coordinator's (Safety Advisor, Safety Practitioner, Loss Control Professional) function should also be to guide, educate, train, and motivate all levels of management, contractors, and the workforce in the techniques of risk reduction,

accident prevention, and the safety management system. They also advise on all aspects of safety and coordinate safety activities in their area(s) of responsibility. Further, they coordinate the implementation of the safety management system and offer support to management, contractors, and workers concerning the safety management system. Board certification is recommended.

INDUSTRIAL (OCCUPATIONAL) HYGIENE

Industrial (Occupational) Hygiene is the science and art devoted to the anticipation, recognition, identification, evaluation, and control of environmental stresses arising out of a workplace which may cause illness, impaired wellbeing, discomfort, and inefficiency of employees or members of the surrounding community. It can be described as the science dealing with the influence of the work environment on the health of employees and is an important part of the safety system.

Industrial (Occupational) Hygienist

The Industrial Hygienist (IH) coordinates the industrial hygiene elements of the safety management system as they call for specialist skills and training. Ideally the appointee should be a member of a recognized institute and have appropriate board certification.

Objectives

The objective of the Industrial Hygienist is to recognize occupational health hazards, evaluate the severity of these hazards, and eliminate them by recommending the instituting of control measures. Where the occupational health hazards cannot be eliminated entirely, occupational hygiene control methods aim to reduce the exposure to the hazard and institute measures to reduce the hazard.

SAFETY COMMITTEE CHAIRPERSON

The chairperson of a committee is the person who leads a safety and health committee and should be a member of management. The safety committee chairperson must also be appointed by senior management, in writing, and duties should be briefly described in the appointment document. Depending on the structure of the safety committee, or tiers of safety committees, it is ideal to have the chief executive officer (CEO) of the organization head up the executive safety committee (EXCO).

ACCIDENT INVESTIGATORS

Accident investigators should be appointed in writing and must receive the necessary training in accident investigation techniques. The investigator of an accident, or high potential near miss incident, should ideally be the supervisor of the area in which the event took place. Since safety is a line management function, line management should take ownership of accidents in their areas and investigate them. The safety department can assist in the investigation, or in major events, they may be called on to take the lead. Special accident investigation committees should also be appointed where and when necessary.

FIRE OFFICIALS

The fire department members or the fire coordinator must also be trained and appointed to coordinate the elements of the safety system dealing with fire protection and prevention. Fire wardens, fire marshals, equipment inspectors, as well as emergency coordinators must also be appointed as per the standards of the safety management system elements.

OTHER APPOINTMENTS

Other appointments could include issuers and receivers of work permits and others, once again, dependent on the needs of the organization. Management must ensure that all appointments are done in writing so that safety authority, responsibility, and accountability are allocated to the correct people. Their duties must also be spelt out in their letters of appointment.

OCCUPATIONAL SAFETY AND HEALTH POLICY (THE POLICY STATEMENT) (S1, E1.2)

The Chief Executive Officer (CEO) must approve the contents of the Safety and Health Policy Statement (*the* safety policy) and ensure that it is updated in accordance with the needs of the organization. Since the policy is the initiating document of the safety system process, it should

- Include a commitment to injury and ill-health prevention.
- Indicate safety responsibilities and accountabilities.
- Refer to continuing improvement of safety and health initiatives.
- Contain a commitment to comply with safety and health legislation.
- Provide a framework for safety objective setting.
- Be documented, displayed and maintained.
- Be freely available.
- Be communicated to all affected parties.
- Receive periodically review.

This is the declaration that drives the safety management system, and is viewed as the most important document in the system. The policy statement should be made known to all employees, contractors, visitors, and other interested parties. The policy must be signed by the CEO. In some organizations the entire executive management sign the policy.

The policy should be framed and displayed throughout all workplaces, including offices and foyers and meeting rooms. A copy should be reproduced in the employee safety handbook and a copy included in contract bid documents. Since it forms the framework for setting safety objectives, it should be reviewed at least annually.

SAFETY PERFORMANCE INDICATORS (SPIs) AND OBJECTIVES (S1, E1.3)

Safety objectives should now be established for the organization. The status of the safety within an organization must constantly be measured against the company's safety goals and objectives. Safety performance indicators (SPIs) should be upstream indicators that can be managed, achieved, and measured. Collectively they form part of the safety system action plan.

MEASUREMENTS

Safety management systems should have measurements based mainly on precontact objectives which are manageable and achievable. Safety measures of precontact achievements are more meaningful, and organizations should not only focus on the post-contact or lagging indicators. The Guidelines suggest that safety measurements be both proactive and reactive, both upstream and downstream, so that a clear picture of the safety efforts is obtained.

Upstream measurements could include the following:

- Number of near miss incidents reported
- Safety committee meetings and attendance
- Toolbox talks held
- Evacuation drills held
- Internal audit scores
- Safety observations rectified
- Safety inspections done
- Safety Representative inspections done and checklists submitted
- Housekeeping scores, etc.

Downstream measurements could include the following:

- Fatality rate
- Injury rate
- Injury severity rate
- Property damage costs
- Fire losses
- Business interruptions, etc.

PROACTIVE, UPSTREAM SAFETY PERFORMANCE INDICATORS

Manageable safety performance indicators should primarily be based on proactive, upstream objectives. An organization should break from traditional reactive measurements and shift the focus to upstream, precontact, and doable actions that contribute to the ongoing reduction of risk. These proactive safety indicators can also be cascaded down to all levels of management and can be measured on a short, medium and long term basis. Achievement of these SPIs creates safety accountability at all levels.

Although they should be considered, downstream measures, over the years have been subject to manipulation and misinterpretation to improve so-called safety performance and are not reliable measures of safety efforts. They are difficult to set as manageable targets, as the obvious target is "zero injuries and fatalities."

SAFETY AND HEALTH COMMITTEES (S1, E1.4)

A safety and health committee (safety committee) can be defined as a group that aids and advises both management and employees on matters of safety and health pertaining to company operations. Furthermore, it performs essential monitoring, educational, investigative, and evaluation tasks.

A safety committee is one way to ensure the active participation of a large number of employees and also to ensure that supervisors, foremen, employees, and management are involved and informed about the safety management system. Employees and managers become involved in the safety process as participation in the safety committee activities allows for opinions to be heard, and suggestions to improve safety can be discussed. Committees should operate in all departments throughout the organization, so that participation and communication reach all levels within the company.

SUPPORT

Safety committees must have the full support and backing of top management otherwise they are doomed to fail. Management must be sincere about its support of the safety system, and show this support by holding regular executive safety committee meetings and by taking action recommended by sub, or special committees.

TYPES OF COMMITTEES

There are numerous types of safety committees. These are: joint committees, departmental committees, maintenance committees, committees consisting of Safety and Health Representatives, the Executive Safety Committee (EXCO), safety suggestion committee, and other ad hoc committees which may be constituted from time to time. These may include committees formed to help organize the safety day, or organize the annual housekeeping competition, or prepare certain elements of the safety system that need modification, rectification, or implementation.

Executive Safety Committee (EXCO)

The executive level safety committee chaired by the CEO of the organization, comprising top management, should meet monthly. This is the policy-making body and the group that set standards and direction for the safety management system. The executive appointed for safety coordination reports his or her findings, suggestions, and recommendations concerning the safety system to this committee. Without guidance and direction from such an EXCO committee, the safety system may not be successfully implemented or maintained.

Departmental Safety Committees

The heads of departments should be members of the executive committee so that all departments of the organization are represented. These departmental heads in turn should chair their own departmental safety committees, which means that all departmental employees are represented by the safety committee system. Having the departmental head or supervisor chair the meetings means that certain decisions can be taken at the committee level, directions given, and two-way communication between workers and management takes place.

Numerous safety committees have failed because the committees have been chaired by the wrong level of employees, without the correct authority. Safety committees must be chaired by a manager, foreman, team leader, group leader, or head of that particular department, as only they have the authority to take decisions and bring about change. Safety department personnel should not chair safety committees but should act as facilitators and secretaries to the committees.

Special Committees

Special committees can be formed to operate on the same lines as the structured safety committees, and these committees could be temporary until the project is completed, or the specific objective has been achieved. Types of special committees could include the following:

- Accident investigation committee
- Safety competition organizing committee
- Safety education committee
- First aid training committee
- Personal protective equipment selection committee
- Ergonomic project review committee
- Written safe work procedure drafting committee
- Standards review committee
- Pre-audit team committee
- Housekeeping competition adjudication committee, etc.

Joint Safety Committee

The joint safety and health committee is advocated by safety legislation in a number of countries. The joint committee concept stresses cooperation and a commitment to safety, as a shared responsibility, both by management and employees. At joint committee meetings, employees can become involved in safety discussions and their ideas can be translated into actions. The committee serves as a forum for discussing regulatory changes, safety system elements, processes, or new and unusual procedures that could give rise to accidents.

The concept of joint decision making in safety is facilitated by joint safety committees as management and workers can now face each other across the same meeting table with a common ground and a common agenda based on the prevention of loss causing events. Representation by management at a joint committee clearly indicates commitment to safety and visible involvement.

Accident and Near Miss Incident Investigation Committee

In many instances, a special accident investigation committee is constituted to investigate certain major accidents. The main function of the committee is to investigate the accident and report its findings and recommendations to top management. In some countries, this committee is required by legislation.

Safety and Health Representative Committees

A committee comprising of Safety and Health Representatives and other interested parties is sometimes required by local safety legislation. This is also a vital safety committee which can contribute greatly to the safety system, as it creates a platform for open communication between management and employees concerning employee safety and health.

FUNCTIONS OF SAFETY AND HEALTH COMMITTEES

The main functions of safety committees are:

- Meet regularly (preferable monthly).
- Ensure that safety momentum is maintained.
- Provide for two-way safety communication.
- Solve certain occupational health and/or safety problems.
- Propose improvements to the safety system.
- Act as a selection committee for suppliers of personal protective equipment.
- Assist in accident investigations.
- Sort and select safety suggestions and recognition schemes.
- Assist in planning safety campaigns, competitions, etc.
- Constantly monitor the safety system effort.
- Discuss near miss incidents, injury and loss statistics, and monitor trends.
- Preview new safety training programs which are about to be introduced.
- Contribute to the general improvement of the safety system.

SAFETY COMMITTEE CONSTITUTION

Most safety committees are constituted formally within the organization, and a basic constitution is drawn up governing the duties, rights, powers, and functioning of safety committees. A simple safety committee constitution could consist of the following:

- Scope of activities
- Extent of the committees' authority
- Basic objectives of the committee
- Membership
- Role of the Chairperson
- Secretarial and other functions

The procedures are also laid down in the constitution, and this would also stipulate how many members are necessary to form a quorum, the frequency of meetings, which records are to be kept, and the order of business.

COMMITTEE PURPOSE

The constitution described above should never detract the committee from its most important and basic function. The basic function of every safety committee is to create and maintain interest in safety and health, create involvement and participation, and provide a platform for two-way communication, thereby contributing to the safety management system.

RECOGNITION

In some plants, it is a practice to display the photographs of the safety committee members on the safety notice board and to also issue each member with a badge stating, "Safety Committee Member." It should also be widely publicized that any employee can speak to a safety committee member, should there be a specific problem, or should a hazard arise. This system also gives importance to being a safety committee member, and normally great competition takes place every year to be nominated or re-nominated as a safety committee member.

MANAGEMENT OF CHANGE (S1, E1.5)

Ineffective management of change has been the cause of many major accidents. Change at the workplace is inevitable and often brings progress. But it can also increase risks that, if not properly managed, may create conditions that could lead to injuries, property damage, or other losses. The main types of change within an enterprise are: changes to equipment, infrastructure, processes or product, changes in personnel, use of different material, and changes brought about by the safety and health management system.

The hazards encountered and risks posed by these changes should be assessed and the necessary controls put into place before the change, to reduce the probability of the change resulting in accidental loss.

Ideally, no modification should be made to any plant, equipment, control systems, process conditions, operating, or safety and health procedures, without authorization from a responsible manager. In some cases third party approvals may be necessary.

The management of change process could follow the following phases:

Origination: This is where the change is generated in the form of an improvement, an idea or a solution to a problem.

Review and appraisal: The changes should be reviewed and the technical, operational, safety, environmental, quality, and economical aspects of the change be evaluated. In some instances specialists may be called in for this change review.

Change approval: A document in the form of a *management of change* document, should list all the details of the change and all concerned departments and managers should approve and sign off on the change proposal and its ramifications. Technical, operational, financial, health, safety, and environment departments should be involved in the approval process.

All foreseeable hazards and risks posed by the proposed change should be considered at this stage, and safety system controls recommended. A responsible person should be appointed as the person in charge of the change project.

Implementation and verification: The change is now implemented according to a plan of action based on the approval document. The change must be verified to ensure that it is in accordance with the change document and all relevant requirements prior to restarting the changed process. All proposed safety and health controls must be in place prior to the change.

Verification documentation: All documentation relevant to the change needs to be updated. This includes: specifications, procedures, emergency actions, training manuals, checklists, etc.

Training: Affected employees and contractors need to be trained on the impact of the change prior to the restart of the changed process.

Checklists: Checklists should be used during all phases of the change to ensure the plan is being followed and necessary controls are in place and working.

Management of emergency changes: Management of change due to emergencies should also follow a sequence and receive the same attention as routine changes. These changes may be necessary in case of major events, immediate threat to employees, contractors or members of the public, or other situations that need immediate change to reduce risk.