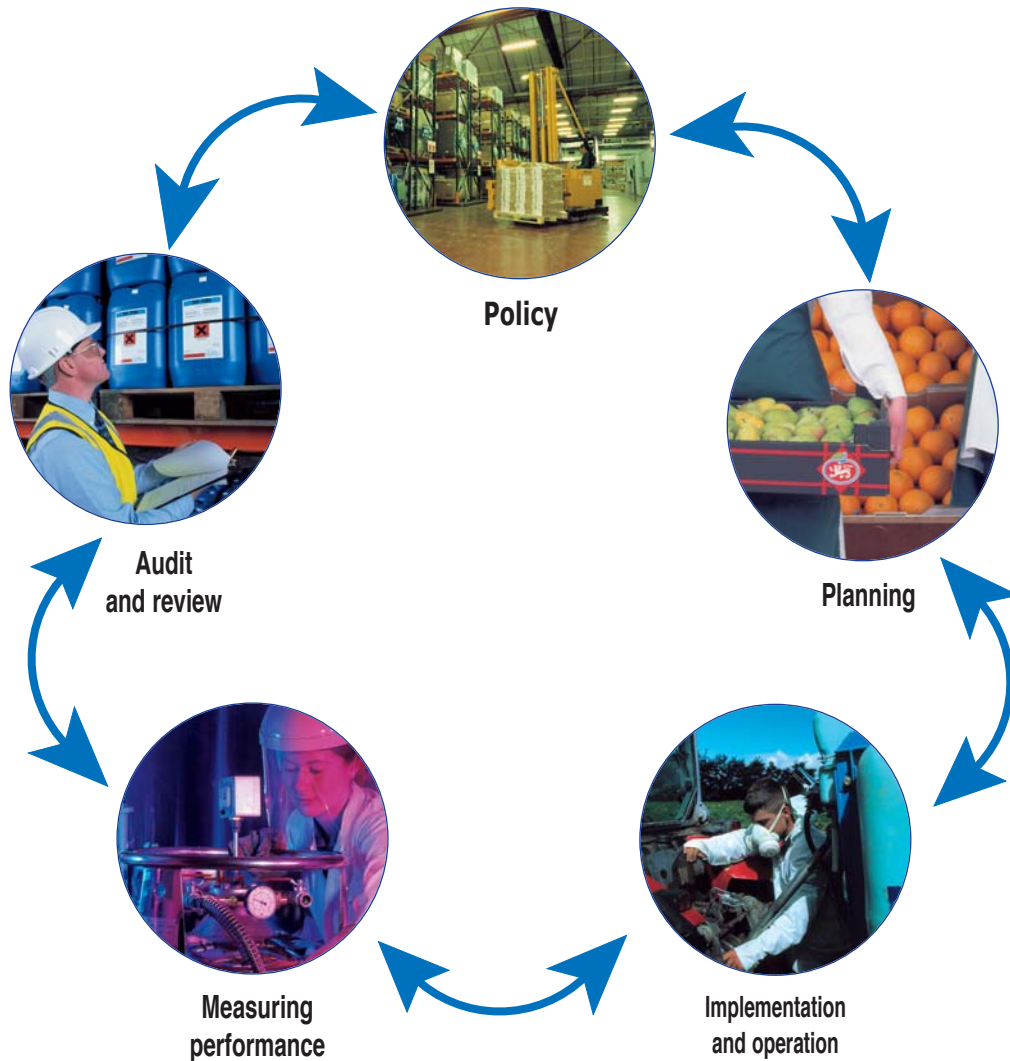




HEALTH AND SAFETY
AUTHORITY



Workplace Safety and Health Management

€14

WORKPLACE SAFETY AND HEALTH MANAGEMENT

**Practical Guidelines on the Implementation and
Maintenance of an Occupational Safety, Health and
Welfare Management System**

Published by the Health and Safety Authority

CONTENTS.....

	Page
Introduction	7
1. Key elements of a Safety and Health Management System	
1.1 Policy and Commitment	8
1.2 Planning	8
1.3 Implementation and Operation	8
1.4 Measuring Performance	9
1.5 Auditing and Reviewing Performance	9
2. Initial Safety and Health Management System Review	11
3. Safety and Health Management System Model	13
3.1 Safety and Health Policy	13
• Developing a Workplace Safety and Health Policy	14
3.2 Planning	15
• Safety and Health Objectives and Targets	16
• Performance Standards	16
3.3 Implementation and Operation	17
• Structure and Responsibilities	17
– <i>Management Responsibilities</i>	17
– <i>Individual Responsibilities</i>	18
• Safety Consultation, Participation and Representation	19
• Training, Awareness and Competence	21
• Communication	21
– <i>Information Coming into the Organisation</i>	21
– <i>Information Flow within the Organisation</i>	21
– <i>Information Flow from the Organisation</i>	23
• Document Control	23
• Safety and Health Management System Records	24
• Operational Control	24
– <i>Workplace Precautions</i>	24
– <i>Hazard Identification</i>	25
– <i>Risk Assessment</i>	26
– <i>Risk Control</i>	26
– <i>Controlling Health Risks</i>	27
• Management and Control of Contractors	28
• Procurement, Emergency Preparedness and Response	29
3.4 Measuring Performance	30
• Monitoring and Measurement	30
• Active Monitoring	31
• Reactive Monitoring	32
3.5 Auditing and Reviewing Performance	32
• Safety and Health Management Systems Audits	33
• Audit Protocols	33
• Audit Records	33
• Reviewing Performance	33
• Action for Improvement	35
 APPENDICES	
Appendix A Terminology.....	36
Appendix B Safety and Health Training and Competence.....	37
• Training for Safety and Health	37
• Identify Training Needs	37
– <i>Organisational Needs</i>	38
– <i>Job-related Needs</i>	38
– <i>Individual Needs</i>	39

● Identify Training Objectives and Methods	39
● Deliver Training	39
● Evaluation and Feedback	39
● Specialist Advice and Services	39
– Access to Specialist Advice and Services	39
– Role and Functions of Safety and Health Advisers	40
– Relationships Within the Organisation	40
– Relationships Outside the Organisation	41
– External Specialist Safety and Health Support.....	41
Appendix C Risk Assessment and Control	42
● The Legal Basis for Risk Assessment	42
● Key Stages of Risk Assessment and Control	42
– Use Trained Risk Assessors	42
– Prepare an Inventory.....	42
– Identify the Hazards	43
– Assess the Risks	43
– Identify Appropriate Action	44
– Risk Assessment Records and Control	44
● A Simple Risk Estimation Example	45
– Hazards	45
– Remedial Measures	45
– Key stages of Risk Assessment and Control.....	46
Appendix D Measuring Safety and Health Performance	47
● Active and Reactive Monitoring	47
● Measurement Techniques	47
● Inspection	47
● Accident, Ill-health and Incident Investigations	48
● Key Data to be Covered in Accident, Ill-health and Incident Reports	49
– The Event	49
– The Potential Consequences	49
– Recommendations	49
● Learning from and Communicating Results from Investigations	49
● Cautions in Using Accident and Ill-health Data	50
Appendix E Auditing systems	51
● Safety and Health Management System Auditing	51
● Board and Senior Management Commitment to Auditing	51
● Co-operation with the Auditors	51
● Essential Elements of a Safety and Health Management System Audit	51
● Planning and Managing Safety and Health Management System audit	52
– Audit Programme	52
– Auditor Selection, Competence and Training	52
– Data Collection and Interpretation.....	52
– Audit Reporting.....	52
– Acting on Audit Results	53
– Safety and Health Audit Systems	53
– Effective Safety and Health Audit Systems	53
– Safety and Health Policy	53
– Organisation.....	53
– Planning and Implementation	53
– Measuring System.....	53
– Reviewing System	53
References	54
– International	54
– Health and Safety Authority Guidance.....	54

ABOUT THESE GUIDELINES

WHO SHOULD READ THESE GUIDELINES?

The guidance is principally aimed at enterprises with a well-defined management structure, where occupational safety and health management can be integrated into the general management system. In particular, it is aimed at executive directors, boards of directors, other boards of management and senior management controlling bodies in workplaces, all senior managers who discharge responsibilities for occupational safety and health, and safety and health professionals. Smaller companies with a less formal management structure can use this guidance as appropriate to their needs. Safety Representatives should also find it helpful.

WHY IS IT IMPORTANT TO HAVE AN EFFECTIVE SAFETY AND HEALTH MANAGEMENT SYSTEM?

There are sound economic reasons for reducing work-related accidents and ill-health, as well as ethical and regulatory reasons.

Economic Reasons

Besides reducing costs, effective safety and health management promotes business efficiency. Thousands of work-related accidents, resulting in more than three days off work are reported to the Health and Safety Authority each year. Work-related diseases and ill-health are more difficult to measure due to their long latency period but result in excess of one million days lost at work each year. These accident and ill-health cases are due to failures and deficiencies in the occupational safety and health management in organisations.

Legal Reasons

The Safety, Health and Welfare at Work Act 2005 (the 2005 Act) requires you to ensure, so far as is reasonably practicable, the safety, health and welfare of your employees and to manage and conduct your work activities in such a way as to ensure their safety, health and welfare. This requires you to be proactive in managing your safety, health and welfare responsibilities and deal with them in a systematic way. This guidance should help organisations to improve their safety and health performance by providing advice on how safety and health should be managed, and in the process help them to comply with their legal requirements.

Moral and Ethical Reasons

The proactive management of safety and health in the workplace helps organisations prevent injuries and ill-health at work. This guidance should help organisations reduce the personal loss caused as a result of accidents and ill-health at work.

HOW WILL THESE GUIDELINES HELP?

This guidance aims to give practical advice and recommendations on developing an occupational safety, health and welfare management system for your organisation. The words 'safety and health' are used throughout the document for conciseness and are intended to include the safety, health and welfare of employees and others at work due

6 WORKPLACE SAFETY AND HEALTH MANAGEMENT

to work activities. This guidance is not intended to be a specification or to be used for certification purposes. This document:

- describes the principles and management practices that provide the basis for effective occupational safety and health management;
- sets out the issues that need to be addressed;
- serves as a tool to develop improvement programmes, self-audits or self-assessments.

INTRODUCTION

Safety and health principles are universal, but how much action is needed will depend on the size of the organisation, the hazards presented by its activities, the physical characteristics of the organisation, products or services, and the adequacy of its existing arrangements.

Many of the features of effective safety and health management are analogous to the sound management practices advocated by proponents of quality management, environmental protection, and business excellence. Commercially successful companies often excel at safety and health management as well, precisely because they apply the same efficient business expertise to safety and health as to all other aspects of their operations.

While the quality management of products or services and environmental protection principally protect physical phenomena, safety and health management in the workplace involves protecting people and developing a safety culture between employers and employees. However, there are considerable similarities between the approaches to safety and health described here and those advocated for effective quality management (ISO 9000 series of standards) or environmental protection (ISO 14000 series).

For example, quality management systems promote continuous improvement in all aspects of an organisation's activities. They are founded on a continuous process of:

- identifying the key processes;
- setting performance standards;
- measuring achievement against these standards;
- taking corrective action;
- identifying opportunities for improvement.

Success in quality management requires the development of supportive organisational cultures. Quality management systems also stress the importance of the active involvement of all employees in the quality process, and the crucial importance of visible leadership by managers.

Organisations that manage safety and health successfully invariably have a positive safety culture and active safety consultation programmes in place. Successful organisations can establish and maintain a culture that supports safety and health. Practical methods of designing, building, operating, and maintaining the appropriate systems are outlined in this guidance. In the following sections the similarities and strong links between total quality management, environmental protection and effective safety and health management will become increasingly apparent.

1. KEY ELEMENTS OF SAFETY AND HEALTH MANAGEMENT

The key elements of a successful safety and health management system are set out in this section. Diagram 1 on page 10 below outlines the relationship between them. They also comply with the main elements of an occupational safety and health management system as set out in the ILO Guidelines. The manner and extent to which the individual elements will be applied will depend on factors such as size of the organisation, its management structure, the nature of its activities, and the risks involved. The terminology used in this guidance is explained in Appendix A.

1.1 POLICY AND COMMITMENT

The organisation should prepare an occupational safety and health policy programme as part of the preparation of the Safety Statement required by section 20 of the 2005 Act. Effective safety and health policies should set a clear direction for the organisation to follow. They will contribute to all aspects of business performance as part of a demonstrable commitment to continuous improvement. Responsibilities to people and the working environment will be met in a way that fulfils the spirit and letter of the law. Cost-effective approaches to preserving and developing human and physical resources will reduce financial losses and liabilities. In a wider context, stakeholders' expectations, whether they are shareholders, employees or their representatives, customers or society at large, can be met.

1.2 PLANNING

The organisation should formulate a plan to fulfil its safety and health policy as set out in the Safety Statement. An effective management structure and arrangements should be put in place for delivering the policy. Safety and health objectives and targets should be set for all managers and employees.

1.3 IMPLEMENTATION AND OPERATION

For effective implementation, the organisation should develop the capabilities and support mechanisms necessary to achieve its safety and health policy, objectives and targets. All staff should be motivated and empowered to work safely and to protect their long-term health, not simply to avoid accidents. The arrangements should be:

- underpinned by effective staff involvement and participation through appropriate consultation, the use of the safety committee where it exists, and representation systems;
- sustained by effective communication and the promotion of competence which allows all employees and their representatives to make a responsible and informed contribution to the safety and health effort.

There should be a planned and systematic approach to implementing the safety and health policy through an effective safety and health management system. The aim should be to minimise risks. Risk assessment methods should be used to determine

priorities and set objectives for eliminating hazards and reducing risks. Wherever possible, risks should be eliminated through the selection and design of facilities, equipment and processes. If risks cannot be eliminated, they should be minimised by the use of physical controls and safe systems of work or, as a last resort, through the provision of personal protective equipment. Performance standards should be established and used for measuring achievement.

Specific actions to promote a positive safety and health culture should be identified. There should be a shared common understanding of the organisation's vision, values and beliefs. The visible and active leadership of senior managers fosters a positive safety and health culture.

1.4 MEASURING PERFORMANCE

The organisation should measure, monitor and evaluate its safety and health performance. Performance can be measured against agreed standards to reveal when and where improvement is needed. Active self-monitoring reveals how effectively the health and safety management system is functioning. Self-monitoring looks at both hardware (premises, plant and substances) and software (people, procedures and systems, including individual behaviour and performance). If controls fail, reactive monitoring should find out why they failed, by investigating the accidents, ill-health or incidents that could have caused harm or loss. The objectives of active and reactive monitoring are:

- to determine the immediate causes of substandard performance;
- to identify any underlying causes and implications for the design and operation of the safety and health management system.

Longer-term objectives should also be monitored.

1.5 AUDITING AND REVIEWING PERFORMANCE

The organisation should review and improve its safety and health management system continuously, so that its overall safety and health performance improves constantly. The organisation can learn from relevant experience and apply the lessons. There should be a systematic review of performance based on data from monitoring and from independent audits of the whole safety and health management system. These form the basis of complying with the organisation's responsibilities under the 2005 Act and other statutory provisions. There should be a strong commitment to continuous improvement involving the development of policies, systems and techniques of risk control. Performance should be assessed by:

- internal reference to key performance indicators;
- external comparison with the performance of business competitors and best practice in the organisation's employment sector.

Many companies now report on how well they have performed on worker safety and health in their annual reports and how they have fulfilled their responsibilities with regard to preparing and implementing their safety statements. In addition, employers have greater responsibilities under section 80 of the 2005 Act on 'Liability of Directors and officers of undertakings' which requires them to be in a position to prove they have proactively managed the safety and health of their workers. Data from this 'Auditing and Reviewing Performance' process should be used for these purposes.

DIAGRAM 1: KEY ELEMENTS OF A SAFETY AND HEALTH MANAGEMENT SYSTEM



2 INITIAL SAFETY AND HEALTH MANAGEMENT SYSTEM REVIEW

The organisation should carry out an initial review of its safety and health management arrangements. This review should compare existing safety and health practice with:

- the requirements of safety and health legislation;
- the provisions set out in the organisation's Safety Statement;
- safety and health guidance in the organisation;
- existing authoritative and published safety and health guidance;
- best practice in the organisation's employment sector.

As a minimum, in order to comply with safety and health legislation, the organisation must:

- identify hazards and carry out their risk assessments;
- prepare and implement the Safety Statement requirements;
- have effective safety consultation and employee participation programmes in place;
- facilitate the selection of and support the role of the Safety Representative.

The initial review of the organisation's safety and health management system should cover the issues listed above. The following checklist may be use for the review:

- Is the Safety Statement clear and concise so that it can be read and understood by those who may be at risk?
- Is it available at the workplace to which it relates and are workers given relevant extracts where they are at specific risk?
- Is the overall safety and health policy of the organisation and the internal structure for implementing it adequate, e.g. are responsibilities of named persons clearly outlined?
- Does the Statement contain a systematic identification of hazards and an assessment of risks for the workplace(s) it covers?
- Are risk assessments being carried out on a regular basis as risks change, and are the necessary improvements made to keep the safety and health management system up to date?
- Are the necessary safety control measures required for a safe workplace identified and implemented - e.g. the provision of safe access and egress, good housekeeping, clear passageways and internal traffic control?
- Are written safe procedures available for those operations that require them, e.g. for routine processing and ancillary activities, handling and using chemicals, preventive maintenance, plant and equipment breakdown maintenance, accident and ill-health investigations, emergency planning, assessment of personal protective equipment (PPE) requirements?
- Are procedures available for monitoring the implementation of safety systems and control measures, e.g. are safety audits being carried out?
- Is safety and health training being carried out and does the training give adequate information to workers on risks they might be exposed to?

12 WORKPLACE SAFETY AND HEALTH MANAGEMENT

- Is the impact of this training and the level of understanding of the information assessed by anyone?
- Do safety consultation, employee participation and representation procedures exist and are these procedures effective, e.g. is there good co-operation between employer, managers and employees on safety and health issues at the workplace? Is there a safety committee in existence and if so does it comply with the 2005 Act requirements. Are safety committee meetings constructive, with meeting reports and follow-up action lists? Is the Safety Representative or Representatives involved at every stage of the safety consultation process?

3 SAFETY AND HEALTH MANAGEMENT SYSTEM MODEL

3.1 SAFETY AND HEALTH POLICY

Management should develop and incorporate into the Safety Statement a safety and health policy that recognises that safety and health is an integral part of the organisation's business performance. They should ensure that this safety and health policy:

- is appropriate to the hazards and risks of the organisation's work activities and includes a commitment to protect, so far as is reasonably practicable, its employees and others, such as contractors and members of the public, from safety and health risks associated with its activities;
- includes a commitment to comply with relevant safety and health legislation, codes of practice and guidelines as a minimum;
- provides a framework for measuring performance and ensuring continuous improvement by setting, auditing, and reviewing safety and health objectives and targets.
- is documented, understood, implemented, and maintained at all levels in the organisation;
- clearly places the management of safety and health as a prime responsibility of line management from the most senior executive level to first-line supervisory level;
- covers employee safety and health consultation, safety committee meetings where they exist, worker participation; and safety representation and includes a commitment to provide appropriate resources to implement the policy;
- provides for employee co-operation and compliance with safety rules and procedures.

Effective safety and health management demands comprehensive safety and health policies that fulfil the spirit and the letter of the law, are effectively implemented, and are considered in all business practice and decision-making.

Organisations achieving high standards of safety and health develop policies that recognise:

- the contribution that safety and health can make to business performance by preserving and developing human and physical resources, by reducing costs and liabilities, and by expressing corporate responsibility;
- the need for leaders to develop appropriate organisational structures and a culture that supports risk control and secures the full participation of all members of the organisation
- the requirement to resource and plan policy implementation adequately;
- the necessity of approaching injury, ill-health and loss prevention by systematically identifying hazards, assessing and controlling risks;
- the need for the organisation to develop an understanding of risks and risk control and to be responsive to internal and external change;
- the requirement to scrutinise and review performance to learn from experience;

14 WORKPLACE SAFETY AND HEALTH MANAGEMENT

- the connection between quality, the environment, safety and health, and good management practice.

Developing a Workplace Safety and Health Policy

By law, employers are obliged to plan their overall approach to managing safety and health and must commit the necessary resources to implement the plan. As an initial step, employers must develop a safety and health policy which should form part of the Safety Statement. It must be specific to their organisation and be in a written format. The content of the safety and health policy of an organisation should be based on the hazards and risks present in the organisation and should reflect the fact that systematic hazard identification and risk assessment have been undertaken.

As a minimum, the policy should contain a commitment that safety and health legislation will be complied with, and should specify those responsible for implementing the policy at all levels in the organisation, including senior managers, first-line managers, and supervisors. It should also define their safety and health responsibilities. Employees' responsibilities should also be addressed. The safety and health policy should specify the organisation's commitment to ensuring it will manage and conduct its work activities, so far as is reasonably practicable, so as to be safe for employees and others in its workplace, and it will not allow improper conduct or behaviour which is likely to put safety and health at risk. In particular, it should specify that adequate resources will be provided for critical safety and health issues such as the:

- design, provision and maintenance of a safe place of work for all employees;
- design, provision and maintenance of safe means of access to and egress from each part of the workplace;
- design, provision, and maintenance of any article, plant, equipment or machinery for use at work in a safe manner;
- provision of systems of work that are planned, organised, performed, maintained or revised, so as to be safe, particularly for safety-critical process operations or services;
- performance of ongoing hazard identification and risk assessments, and compliance with the general principles of prevention as set out in the legislation;
- provision and maintenance of welfare facilities and PPE;
- preparation of emergency plans and the provision of first-aid training;
- reporting of accidents and dangerous occurrences to the Authority and their investigation;
- provision and dissemination of safety and health information, instruction, training and supervision as required;
- operation of safety and health consultation, employee participation and safety representation programmes;
- review and keeping up-to-date the safety and health policy in order to prevent adverse effects on the safety and health of employees from changing processes, procedures, and conditions in the workplace;
- appointment of people responsible for keeping safety and health control systems in place and making them aware of their responsibilities;
- establishment of monitoring arrangements, including safety and health inspections and audits, which should be used by the employer to ensure ongoing compliance with legal duties, responsibilities and controls;

- development of in-house safety and health competence;
- employment of external safety and health experts as required;
- use of standards, codes of practice, guidelines, or industry practices;
- co-operation required from employees and disciplinary procedures for non-compliance.

The above list is not exhaustive and the critical safety and health issues that could be covered by the policy will depend on the risks in the organisation. If the above issues are adequately covered elsewhere in the Safety Statement or in the safety and health management system, they might need only to be referred to in the safety and health policy. Backup documentation may also be referred to in the policy.

The executive board of directors or other senior management controlling body of the organisation needs to accept formally the contents in the safety and health policy and publicly acknowledge its collective role in providing safety and health leadership in its organisation by:

- committing to continuous improvement in safety and health;
- explaining the board's expectations to senior managers and staff and how the organisation will deliver on them;
- ensuring the safety statement is a living document, is prepared in consultation with workers, is reviewed as conditions change, and is brought to the attention of all workers.

3.2 PLANNING

Planning is essential for the implementation of safety and health policies. Adequate control of risks can be achieved only through co-ordinated action by all members of the organisation. An effective planning system for safety and health requires a safety and health management system that:

- controls risks and as a minimum complies with safety and health laws;
- reacts to changing circumstances and demands;
- promotes and sustains a positive safety and health culture and supports continual improvement in safety and health performance.

Initially, the organisation should:

- access and identify relevant legislation, codes of practice, and guidelines;
- monitor legal and other requirements and communicate relevant information on these to employees.

Safety and health objectives and targets should be based on legal and other requirements. The next step is to formulate a plan to fulfil safety and health policy, objectives, and targets. The plan should include the following:

- setting clear performance standards;
- defining work programmes – the plan for achieving each objective;
- designating responsibilities;
- setting time frames for tasks to be completed.

A safety and health plan will help the organisation meet its legal obligations and improve its performance. It should be reviewed and revised regularly to reflect changes in organisational safety and health objectives.

Safety and Health Objectives and Targets

Realistic and achievable safety and health objectives should be established to meet the organisation's safety and health policy. Objectives should be aimed and focused at overall improvement in safety and health performance and should be supported by specific performance standards and targets. They should also be in compliance with relevant safety and health laws applying to the organisation. Discussions about agreeing objectives should help set priorities for the allocation of resources for safety and health. These should reflect the ultimate aim of minimising risk, while the immediate objective may be to achieve a level of performance that complies with relevant legal requirements. Safety and health objectives should be periodically evaluated and updated if necessary.

Measurable targets should be agreed with all managers responsible for achieving the plan and should be clearly communicated to those involved in its implementation.

Performance Standards

Performance standards are the basis of planning and measuring safety and health achievement. The maxim 'what gets measured gets done' applies. If the organisation is to be efficient and effective in controlling risks, it needs to co-ordinate its activities to ensure that everyone is clear about what they are expected to achieve. Both the direction of the organisation as a whole and specific risks have to be controlled. Setting performance standards is essential if policies are to be translated from good intentions into a series of co-ordinated activities and tasks. Standards should:

- set out clearly what people need to do to contribute to an environment free of injuries, ill-health, and loss;
- identify the competencies, expertise and training individuals need to fulfil their responsibilities;
- form the basis for measuring individual, group, and organisational performance.

Good performance standards link responsibilities to specific outputs. They should specify:

- who is responsible. This will give a name or position. Nobody should be made responsible for a task unless they meet suitable competence criteria (i.e. they have been trained and possess the necessary skills and knowledge).
- what they are responsible for. This should explain what is to be done and how. It may involve applying specific procedures or systems of work and the use of specific documents or equipment because of legal duties. Some examples include:
 - preparing plans to implement the safety and health policy;
 - carrying out risk assessments in accordance with specific regulations;
 - periodic monitoring of safety and health performance;
 - checking contractors' competence and safety and health performance before awarding contracts;
 - holding supervisors' weekly safety and health meetings, which may include, for example, a reminder of important safety and health procedures or lessons from a recent accident;

- providing training;
- providing first aid after an accident.
- when should the work be done. Some work occurs regularly (e.g. monthly inspections) or only when particular tasks or jobs are being done (e.g. when using a particular chemical). A clear time frame should be set for these tasks.
- what is the expected result? Some outputs may refer to legal requirements (e.g. achievement of a certain air-quality standard). Alternatively, the output may be satisfactory completion of a specified procedure (e.g. training). Output standards can be used to specify how individuals will be held accountable for their safety and health responsibilities.

3.3 IMPLEMENTATION AND OPERATION

Structure and Responsibilities

Responsibility for safety and health management ultimately rests with the employer. This responsibility is normally delegated to executive directors, senior managers, line managers, supervisors, and employees. Each person's authority and duties should be clearly defined, documented and communicated to them. The organisational and reporting structure for implementing these duties should be illustrated in an in-house organisational chart.

In addition, each director on the organisation's board needs to accept their responsibilities in providing safety and health commitment and leadership by:

- ensuring that each member's actions and decisions at board level always reinforce the message in the organisation's safety statement;
- preventing a mismatch between individual board members attitudes, behaviour or decisions and the organisation's safety statement so as not to undermine workers belief in maintaining good safety and health standards.

Management Responsibilities

Accidents, ill-health, and incidents are seldom random events. They generally arise from failures of control and involve multiple contributory elements. The immediate cause may be a human or technical failure, but such events usually arise from organisational failings which are the responsibility of management. Successful safety and health management systems aim to utilise the strengths of managers and other employees. The organisation needs to understand how human factors affect safety and health performance. Senior executive directors or other senior management controlling body members and executive senior managers are primarily responsible for safety and health management in the organisation. These people need to ensure that all their decisions reflect their safety and health intentions, as articulated in the Safety Statement which should cover:

- the appointment of someone at senior management level with executive responsibility, accountability and authority for the development, implementation, periodic review, and evaluation of their safety and health management system;
- the safety and health ramifications of investment in new plant, premises, processes or products. For example such changes could introduce:
 - new materials – are they toxic or flammable, do they pose new risks to employees, neighbours or the public, and how will any new risks be controlled?
 - new work practices – what are the new risks, and are managers and supervisors

18 WORKPLACE SAFETY AND HEALTH MANAGEMENT

competent to induct workers in the new practices?

- new people – do they need safety and health training and are they sufficiently competent to do the job safely?
- only engaging contractors to do new or ongoing projects that reinforce rather than damage the organisation's safety and health policies;
- recognising their continuing responsibility for safety and health even when work is contracted out;
- providing their customers with the necessary safety and health precautions when supplying them with articles, substances, or services;
- being aware that although safety and health responsibilities can and should be delegated, legal responsibility for safety and health still rests with the employer.

Senior managers' responsibilities should include:

- preparing safety and health policies and consulting employees, including the safety committee where it exists, and the Safety Representative, as appropriate;
- devising safety and health strategies for key high risks;
- setting safety and health objectives and targets for employees;
- devising plans to implement the safety and health policy;
- ensuring that appropriate organisational structures are in place;
- identifying and allocating resources for safety and health;
- ensuring that the safety and health policy is effectively implemented, and checking whether objectives and targets have been met;
- reviewing the effectiveness of the safety and health management system;
- implementing any necessary improvements derived from carrying out risk assessments;
- giving all personnel the authority necessary to carry out individual safety and health responsibilities;
- devising appropriate arrangements whereby employees are held accountable for discharging their responsibilities;
- establishing clear and unambiguous reporting relationships;
- devising job descriptions that include safety and health responsibilities;
- incorporating safety and health performance in the appraisal system where personal appraisal systems exist;
- developing safety and health cultures in project teams and team working situations.

Individual Responsibilities

Managers and supervisors have direct responsibility for the safety and health of employees and activities under their control. Individual employees have responsibilities for ensuring their own safety as defined by the 2005 Act and other relevant safety and health legislation. These responsibilities should be clearly allocated and communicated to the various duty holders. Individual responsibilities should be stated in the organisation's Safety Statement. They may include providing supervision and carrying out risk assessments.

Safety Consultation, Participation, and Representation

Participation by employees supports risk control by encouraging their 'ownership' of safety and health policies. It establishes an understanding that the organisation as a whole, and people working in it, benefit from good safety and health performance. Pooling knowledge and experience through participation, commitment, and involvement means that safety and health really becomes everybody's business.

The organisation's executive board of directors or other senior management controlling body needs to recognise its role in engaging the active participation of workers in improving safety and health by:

- actively promoting and supporting worker participation in all aspects of the safety and health management system;
- ensuring a safety consultation, employee participation, and representation programme is put in place in compliance with sections 25 and 26 of the 2005 Act;
- promoting partnership for prevention, where workers and the safety representative are involved in identifying hazards and tackling actual problems, rather than being consulted after decisions have been made;
- making workers aware of their safety and health responsibilities.

Consultation and participation arrangements and the extent of their usage will depend on the size and complexity of the organisation. This may range from informal one-to-one discussions to a more formal safety committee which operates as set out in Schedule 4 of the 2005 Act. At a minimum, they must address:

- procedures to be used to facilitate effective co-operation and communication on safety and health matters between employer and employees;
- preparation and revision of the Safety Statement with particular reference to the written procedures covering the role of the Safety Representative, the operation of safety committees, or informal safety discussions by work crews, which might take place as necessary;
- methods to be used for ensuring a balanced approach to consultation with no one side trying to get the upper hand;
- legal requirement for consultation to be in advance and in good time of any work that can have a substantial effect on employee safety and health.

Examples of essential consultation include:

- the introduction of new technology, equipment or chemicals and their affect on working conditions and environment;
- the employment of competent persons and safety and health experts to study company safety and health activities;
- the outcome of risk assessments on workplace hazards;
- appointment of persons with responsibility for emergency planning;
- safety and health information for employees and its dissemination;
- the planning and organisation of safety and health training.

In organisations where arrangements for joint decision-making exist, these arrangements shall include the safety consultation and participation procedures in use in the organisation.

The organisation's safety representation arrangements should:

- facilitate the selection of Safety Representatives, as appropriate, from employees;
- provide for adequate safety and health training for employees involved in the safety consultation and safety committee processes and for selected Safety Representatives;
- ensure reasonable facilities are provided for Safety Representatives to make representations to the employer on workplace safety and health matters and to carry out other representative functions in a competent manner such as communicating with colleagues on safety and health issues;
- set up periodic meetings between employer, the safety committee, and Safety Representative;
- supply information on the status of previous representations;
- allow the Safety Representative to carry out workplace inspections and investigate accidents and complaints;
- enable the Safety Representative to make representations to Health and Safety Authority inspectors on safety and health matters;
- permit the Safety Representative to accompany a Health and Safety Authority inspector on a tour of inspection.

Safety Representatives and members of the safety committee, where it exists, must be trained, in common with all employees, to enable them to make an informed contribution on safety and health issues. They should also have access to the positive benefits of an open communications policy and be closely involved in supporting the safety and health effort through open discussion at safety and health committee meetings. Effective safety committees should be involved in planning, measuring and reviewing performance as well as in their more traditional reactive role of considering the results of accident, ill-health, and incident investigations and other concerns of the moment.

Employees at all levels should be involved individually or in groups in a range of safety and health activities. They may, for example, help set performance standards, devise operating systems, procedures and instructions for risk control, and help in monitoring and auditing. Supervisors and others with direct knowledge of how work is done can make important contributions to the preparation of procedures. Other examples of good co-operation include forming problem-solving teams from different parts of the organisation to help solve specific problems such as issues arising from an accident or a case of ill-health. Such initiatives should be supported by management, who should ensure access to advice from safety and health specialists.

Opportunities to promote involvement also arise through the use of safety audit checklists, suggestion schemes or safety discussion workgroups, where safety and health problems can be identified and solved. These too can promote enthusiasm and draw on worker expertise. It has to be recognised that involving employees may initially increase the potential for short-term conflict and disagreement about what constitutes safe and healthy working. Such conflict should be anticipated by supporting the activities of supervisors and managers with procedures and training to establish when and how specialist advice should be obtained to resolve problems and disputes. It may also be helpful to identify when specific investigations should be carried out and any circumstances in which work should be suspended. Potential conflict is likely to reduce over time as participants develop more constructive working relationships and shared objectives.

Training, Awareness, and Competence

If employees are to make the maximum contribution to safety and health, adequate arrangements must be in place to ensure that they have the necessary skills to do their work safely. This means more than simply training. Experience of applying skills and knowledge is an important ingredient and needs to be gained under adequate supervision. Managers should know the relevant legislation and be able to manage safety and health effectively. All employees need to be able to work in a safe and healthy manner. It is also necessary to check the abilities of contractors where they work close to, or in collaboration with, direct employees. Good arrangements should include:

- recruitment and placement procedures that ensure employees (including managers) have the necessary physical and mental abilities to do their jobs or can acquire them through training and experience; this may require individual fitness assessments by medical examination and tests of physical fitness or aptitudes and abilities where work-associated risks require it;
- systems to identify safety and health training needs arising from recruitment, changes in staff, plant, substances, technology, processes, or working practices;
- training documentation as appropriate to suit the size and activity of the organisation;
- refresher training to maintain or enhance competence, to include where necessary contractors' employees, self-employed people, or temporary workers who are working in the organisation
- systems and resources to provide information, instruction, training and supporting communications
- arrangements to ensure competent cover for staff absences, especially for staff with critical safety and health responsibilities
- general health promotion and surveillance schemes that contribute to the maintenance of general health and fitness; this may include assessments of fitness for work, rehabilitation, job adaptation following injury or ill-health, or a policy on testing employees for drugs or alcohol abuse.

Proper supervision helps to ensure the development and maintenance of competence and is particularly necessary for those new to a job or undergoing training. The organisation should identify its training needs and implement a training programme that takes legal requirements on safety and health training into account (section 10 of 2005 Act). Records of training should be maintained. Further information on training and competence is outlined in Appendix B.

Communication

Effective communication about safety and health relies on information coming into the organisation; flowing within the organisation; and going out from the organisation;

Information Coming into the Organisation

Good sources of safety and health intelligence are as important in developing safety and health policy and performance as market information is for business development. Organisations should monitor legal developments to ensure continuing compliance with the law, technical developments relevant to risk control, and developments in safety and health management practice.

Information Flow within the Organisation

If the safety and health policy is to be understood and consistently implemented, certain key information should be communicated effectively and should cover:

22 WORKPLACE SAFETY AND HEALTH MANAGEMENT

- the meaning and purpose of the policy;
- the vision, values and beliefs underlying it;
- the commitment of senior management to its implementation;
- plans, standards, procedures and systems relating to implementation and measurement of performance;
- factual information to help secure the involvement and commitment of employees and their safety representatives;
- ensuring workers' concerns, ideas, and inputs on safety and health matters are received, considered and responded to;
- comments and ideas for improvement;
- performance reports;
- lessons learned from accidents and other incidents.

Three interrelated methods – visible behaviour, written communications and face-to-face discussions – can be used to provide an adequate flow of information in all directions throughout the organisation. These methods use both formal and informal means, but they should be consistent with each other, especially where key messages can be reinforced by more than one method.

Visible Behaviour: Managers, particularly directors and other senior managers, can communicate powerful signals about the importance and significance of safety and health objectives if they lead by example. Equally, they can undermine the development of a positive safety and health culture through negative behaviour. Successful methods demonstrating commitment include:

- regular safety and health tours. These are not detailed inspections but a way of demonstrating management commitment and interest and to see obvious examples of good or bad performance. They can be planned to cover the whole site or operation progressively or to focus attention on current priorities in the overall safety effort;
- chairing meetings of the central safety and health committee or other joint consultative body;
- active involvement in investigations of accidents, ill health and incidents.

Written and Electronic Communications: Among the most important written and electronic forms of communications are:

- written safety and health policy statements;
- the organisation's Safety Statement, showing safety and health roles and responsibilities which can be in written or electronic format;
- the organisation's internal intranet site;
- documented performance standards;
- supporting organisational and risk control information and procedures;
- significant findings from risk assessments;
- records of issues discussed and addressed by the safety consultation process.

Safety and health documentation should be tailored to the organisation's business needs, bearing in mind the requirements of specific legislation. In general, the degree of

detail should be proportional to the level of complexity and the hazards and risks. The greater the risk, the more specific instructions will need to be. In some cases, formal systems may be needed to keep track of key documentation, but material should always be written according to the needs of the user.

Organisations can use notices, posters, handbills, safety and health newsletters, e-mail or internal intranet sites or the internet to inform employees about particular issues or about progress in achieving objectives. As organisations develop, electronic means of communicating safety and health documents are used more often, but be careful with overuse of this medium. This information might include results of inspections, compliance with standards or the outcome of investigations. Well-directed use of notices, posters or e-mail can support the achievement of specific targets or improve knowledge of particular risks, and is likely to be more effective than general poster campaigns.

Face-to-face Discussion: Face-to-face discussions support other communication activities and enable employees to make a more personal contribution. Tours and formal consultation meetings are options, but others include:

- planned meetings (or team briefings) at which information can be cascaded and pooled; these can include targeting particular groups of workers for safety-critical tasks;
- safety and health issues on the agenda at all routine management meetings (possibly as the first item);
- monthly or weekly workgroup process meetings at which supervisors can discuss safety and health issues with their teams, remind them of critical risks and precautions, and supplement the organisation's training effort. These also provide opportunities for employees to make their own suggestions (perhaps by brainstorming) for improving safety and health arrangements;
- day-to-day communications from supervisory staff that reinforce the information communicated by other methods.

Information Flow from the Organisation

Organisations may need to pass safety and health information to others. This can include:

- accident or ill-health information or letters of compliance to the Health and Safety Authority;
- information about the safety of articles and substances supplied for use at work to others who will use them in their organisations;
- emergency planning information to the emergency services.

The format for such information is sometimes specified in, for instance, an accident report form, a data sheet, or a prescribed layout. It may be appropriate to seek professional advice on how to present less formal information so that it can be understood by the audience to whom it is addressed. Special arrangements may also be necessary for maintaining lines of communication whenever emergencies arise.

Document Control

Employees must have access to correct and up-to-date safety and health documents or data. Procedures for controlling all documents required by the safety and health management system, whether in written or electronic format, have to ensure that:

24 WORKPLACE SAFETY AND HEALTH MANAGEMENT

- safety and health documents are readily accessible, clearly written, and readily understood, particularly for workers whose first language is not English;
- they are readily identifiable, traceable, and their retention times are specified;
- safety and health documents are periodically reviewed, revised as necessary, and approved for adequacy by authorised personnel;
- current versions of relevant documents are available at all locations where operations essential to the effective functioning of the system are carried out;
- documents or records required to be retained by law (e.g. scaffolding register, pressure systems or lifting equipment certificates) are kept up to date and available for inspection;
- obsolete documents are promptly removed from all points of issue and points of use or other appropriate measures taken to avoid unintended use;
- obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.

Safety and Health Management System Records

Procedures for the identification, maintenance and arrangement of safety and health records should be established and maintained. Records should be appropriate to the organisation and its safety and health management system, and should include training records, safety-critical records, and the results of audits and reviews. Examples of safety and health records include the results of noise measurements, scaffold registers, air-quality monitoring results, certification of test and thorough examination of lifting appliances, etc. Safety and health records should be:

- in either electronic or written form, legible, and easily understood by those who have to use them;
- identifiable, dated, and traceable to the activity;
- stored and maintained so that they are protected against damage, deterioration or loss, and are readily retrievable. Their retention times should be established and recorded, and comply with legal requirements.

Operational Control

Workplace Precautions

The ultimate goal of any safety and health management system is to prevent injury and ill-health in the workplace. Adequate workplace precautions must be provided and maintained to prevent harm to people at the point of risk. Workplace precautions to match the hazards and risks are needed at each stage of business activity. They may include provisions such as machine guards, local exhaust ventilation, safety instructions and systems of work.

Risk control: Risk control is the basis for ensuring that adequate workplace precautions are provided and maintained. At the input stage, the aim is to minimise hazards and risks entering the organisation. At the process stage, the focus is on containing risks associated with the process. At the output stage, risk control should prevent the export of risks off-site, or in the products and services generated by the business. The nature and relative importance of risk control will vary according to the nature and hazard profile of the business and workplace precautions. For instance:

Organisations relying on significant numbers of contractors will need an effective risk-control procedure to select and control contractors;

Wherever the containment of hazardous materials is important (e.g. where flammable or toxic chemicals are used), maintenance and process change procedures are necessary to ensure plant integrity;

Organisations supplying materials or substances for others to use will focus on specific output issues such as storage, transport, packaging and labelling;

Organisations need risk controls appropriate to the hazards arising from their activities and sufficient to cover all hazards. The design, reliability and complexity of each risk-control method should be proportion to the hazards and risks involved.

Devising workplace precautions: The control of risks is necessary to comply with the requirements of the 2005 Act and the relevant statutory provisions. There are three basic stages in establishing workplace precautions:

- hazard identification – identifying hazards that could cause harm;
- risk assessment – assessing any risk that may arise from identified hazards;
- risk control – deciding on suitable measures to eliminate or control risk.

This approach applies to the control of health risks and safety risks. Health risks do, however, present distinctive features arising from their long latency period which require a particular approach. The approach underpins legislation aiming to improve the management of safety and health for many work activities, e.g. for construction, chemical or biological agents, workplace, use of work equipment, and manual handling in the General Application Regulations, noise etc.

In practice, many decisions at these three stages are simple and straightforward and are taken together. Wherever the identification stage reveals a well-known hazard with a known risk, the methods of control and consequent maintenance may be well tried and tested. For example, stairs present an established risk of slipping, tripping, and falling. They require traditional methods of control such as good construction, the use of handrails and the provision of non-slip surfaces, along with the need to keep stairs free of obstructions. In other more complex situations, decisions are necessary at each stage. These are outlined below.

Hazard Identification

This is required by section 19 of the 2005 Act and should form a major part of the safety and health management system. The identification of hazards is an essential first step in the control of safety and health risks. It should involve a critical appraisal of all activities to take account of hazards to employees, others affected by the organisation's activities (e.g. visitors, members of the public and contractors), and to those using its products and services. Consideration should be given to hazards arising from routine and non-routine operations. To ensure a systematic identification of hazards, the organisation may refer to relevant safety and health sources of information, such as:

- legislation and safety and health codes of practice, which give practical guidance and include basic minimum requirements;
- safety and health websites such as the Health and Safety Authority, *www.hsa.ie*;
- authoritative safety and health guidance;
- relevant European Union and other international safety and health guidance;
- information provided by manufacturers and suppliers of articles and substances for use at work;
- relevant national and international standards;
- relevant industry or trade association guidance;

- personal knowledge and experience of managers and employees;
- accident, ill-health and incident data from the organisation itself, from other organisations, or from central sources such as representative organisations;
- expert advice and opinion from competent safety and health professionals.

There should be a critical appraisal of all routine and non-routine business activities. People exposed may include not only employees, but others such as members of the public, contractors, and users of the organisation's products and services. Employees and Safety Representatives can make a useful contribution to identifying hazards.

In the simplest cases, hazards can be identified by observation and by comparing the circumstances with the relevant information (e.g. single-storey premises do not present any hazards associated with stairs). In more complex cases, measurements such as air sampling or examining the methods of machine operation may be necessary to identify the presence of hazards from chemicals or machinery. In the most complex or high-risk cases (e.g., the chemical or pharmaceutical industries), special techniques and systems may be needed, such as hazard and operability studies (HAZOPS) and hazard-analysis techniques such as event or fault-tree analysis. Specialist advice may be needed to choose and apply the most appropriate method.

Risk Assessment

There is a general requirement to carry out a written risk assessment under section 19 of the 2005 Act, and many of the relevant statutory provisions (e.g. the General Application Regulations or the Chemical Agents Regulations). Risk assessment is essentially concerned with estimating the severity and likelihood of harm arising from identified hazards. Where there is more than one employee or other persons exposed, there is increased risk. Assessing risks to help determine workplace precautions can be qualitative or quantitative. In the simplest cases, organisations can refer to specific legal limits, e.g. edge protection is required on all working platforms where people are liable to fall from a height.

In more complex situations, organisations may need to make qualitative judgements within a framework set by legal standards and guidance. To assess risks, risk assessors need knowledge of the activities and working practices being undertaken. Again, the knowledge of employees and Safety Representatives can prove valuable. Risk assessments should be carried out by competent people who are suitably trained. Professional safety and health advice may be needed in some cases, especially when choosing appropriate quantified risk assessment (QRA) techniques and interpreting results. QRA is used more extensively with high-risk activities and for major accident hazard sites. Here, the issue of acceptability of risk might be relevant.

In order to comply with the law, any improvements considered necessary in the risk assessments must be implemented as soon as possible. The risk assessments must be repeated as required, e.g. on the introduction of new technology, new work procedures, or processes. In addition, they may need to be reviewed after organisation mergers, takeovers, or after downsizing.

Risk Control

When risks have been analysed and assessed, risk assessors can make decisions about workplace precautions. All final decisions about risk-control methods must take the relevant legal requirements into account, as they establish minimum levels of risk prevention or control. Some of the duties imposed by the 2005 Act and the relevant statutory provisions are absolute. However, the general duties of care in section 8 of the 2005 Act are qualified by the words 'so far as is reasonably practicable'. This means that

in assessing risk, employers and those who control workplaces to any extent must put in place appropriate preventive or control measures to protect the safety and health of employees and others unless these measures are wholly disproportionate to the elimination of the actual risk involved. In short, if the risk is high, a lot must be done to eliminate or control it. To comply with this requirement, employers should adopt the following hierarchy of risk control measures:

- elimination or substitution which is a permanent solution that eliminates the hazard altogether or substitutes one that presents a lower risk. This could involve the elimination of a hazardous process or substance or the substitution of a toxic substance with a less toxic one;
- engineering controls or safety measures to reduce the risk. These can include using machine guards, isolation or enclosure of hazards, local exhaust ventilation, mechanical handling methods, or protective barriers;
- administrative controls which reduce or eliminate exposure to a hazard by adherence to procedures or instructions. These may include supervision, permit-to-work systems, and job rotation;
- personal protective equipment (PPE). Appropriate training in the use and selection of PPE is an essential element of risk control.

Further information on risk assessment and control is given in Appendix C.

Controlling Health Risks

Occupational safety and health legislation requires employers to ensure the health as well as the safety of their employees. The principles for controlling health through risk assessment are the same as those for safety. However, the nature of health risks can make the link between work activities and employee ill-health less apparent than in the case of injury from an accident. Unlike safety risks, which can lead to immediate injury, the results of daily exposure to health risks may not become apparent for months, years or, in some cases, decades. Health may be irreversibly damaged before the risk is apparent. It is therefore essential to develop a preventive strategy to identify and control risks before anyone is exposed to them. Failure to do so can lead to workers' disability and loss of livelihood. It can also mean financial losses for the organisation through absence, lost production, compensation, and increased insurance premiums.

Risks to health from work activities may include:

- skin contact with irritant substances, leading to dermatitis etc.;
- inhalation of respiratory sensitisers, triggering immune responses such as asthma;
- badly designed workstations requiring awkward body postures or repetitive movements, resulting in upper limb disorders, repetitive strain injury, or other musculoskeletal conditions;
- noise levels that are too high, causing deafness and conditions such as tinnitus;
- excessive vibration, e.g. from hand-held tools, leading to hand-arm vibration syndrome and circulatory problems;
- exposure to ionising and non-ionising radiation, including ultraviolet from the sun's rays, causing burns, sickness, or skin cancer;
- infections ranging from minor sickness to life-threatening conditions caused by inhaling or being contaminated by microbiological organisms;
- stress causing mental or physical illness.

Some illnesses or conditions such as asthma and back pain have both occupational and non-occupational causes, and it may be difficult to establish a definite link with a work activity or exposure to particular agents or substances. However, if there is information that shows the illness or condition is prevalent among the occupational group to which the sufferer belongs or among workers exposed to similar agents or substances, it is likely that work is at least a contributory factor.

Some aspects of managing risks to health may need input from specialist or professional advisers such as technical staff or occupational health hygienists, nurses and occupational physicians. Much can be done to prevent or control risks to health by taking straightforward measures such as:

- consulting the workforce on the design of workstations;
- talking to suppliers of substances, plant and equipment about minimising exposure;
- enclosing machinery to cut down noise or fumes;
- researching the use of less hazardous materials;
- ensuring that employees are trained in the safe handling of all the substances and materials with which they come into contact.

To assess health risks and ensure that control measures are working properly, employers may need, for example, to measure the concentration of substances in air to make sure that exposures remain within relevant maximum exposure limits or occupational exposure standards (see HSA website for latest Chemical Agents Regulations Code of Practice). Sometimes health surveillance of workers at risk of exposure will be needed, which will enable data to be collected for the evaluation of controls and for early detection of adverse changes to health. Section 22 of the 2005 Act requires employers to make health surveillance available to employees, which is based on the risk assessments carried out under section 19 of the Act. Health surveillance procedures include biological monitoring for bodily uptake of substances, examination for symptoms, and medical surveillance which may entail clinical examinations and physiological or psychological measurements. The procedure chosen should be suitable for the case concerned. Whenever surveillance is undertaken, a health record has to be kept for the person concerned.

A suitably trained occupational-health physician should supervise the design and implementation of a health surveillance system, although, where appropriate, it can be done by a suitably qualified person (e.g. an occupational nurse). In the case of inspections for easily detectable symptoms like chrome ulceration or early signs of dermatitis, a suitably trained responsible person should do health surveillance. Although, as described, specialist help may be needed to control risks to health, employers themselves remain responsible for managing work activities in a way that will prevent employees being made ill by their work.

Management and Control of Contractors

The organisation should establish and maintain procedures for controlling safety and health aspects of contractor work. These should include:

- pre-planning for medium- or long-term contracts. This will involve carrying out a full safety and health pre-qualification procedure. For short-term contracts, safety and health aspects should be suitably checked by questionnaire or review;
- ensuring they have prepared an up-to-date safety statement for the project to be undertaken;
- defining responsibility for, and setting up communication links between appropriate levels of the organisation and the contractor before work starts and throughout the contract;

- providing site safety rules;
- providing safety and health training and induction of contractor personnel where necessary before work begins;
- monitoring safety and health aspects of contractor activities on site;
- establishing procedures for communication of accidents and incidents involving the contractor's personnel.

Procurement

Procedures should be established and maintained to ensure the organisation complies with all relevant safety and health laws when purchasing new equipment, materials, using new services, or introducing new processes, particularly those which might require changes to existing safety and health procedures. Issues to be considered include whether new safety and health equipment or precautions need to be installed beforehand, retraining of employees, and effects the changes might have on customers or members of the public.

Emergency Preparedness and Response

The organisation should establish and maintain procedures to respond to accidents and emergency situations, and to prevent and minimise the safety and health impacts associated with them. Emergency planning should cover:

- the development of emergency plans;
- the testing and rehearsing of these plans and related equipment, including fire fighting equipment and fire alarms;
- training personnel on what to do in the event of an emergency, particularly those people who have to carry out duties (e.g. fire-fighting teams, first-aiders);
- advising people working or living near the installation about what they should do in the event of an emergency;
- familiarising the emergency services with the facilities at the organisation so that they know what to expect in the event of an emergency.

The emergency plan itself should include:

- details on the installation, availability, and testing of suitable warning and alarm systems;
- details of emergency scenarios that might occur, including the means for dealing with these scenarios;
- the emergency procedures in the organisation, including the responsibilities of key personnel, procedures for fire-fighting and evacuation of all personnel on site, and first-aid requirements;
- details of emergency services (e.g. fire brigade, ambulance services, spill clean-up services), and the contact arrangements for these services;
- internal and external communications plan;
- training plans and testing for effectiveness;
- details on the availability of emergency rescue equipment and its maintenance log.

The organisation should periodically test, review, and revise its emergency preparedness and response procedures where necessary, in particular after the occurrence of accidents or emergency situations. The plan should dovetail with the safety statement as required by section 20 of the 2005 Act.

KEY QUESTIONS FOR EMPLOYERS ON THE ADEQUACY OF THEIR SAFETY AND HEALTH ORGANISATION

- Does your executive board of directors or senior management team ensure all their decisions reflect the safety and health intentions in your Safety Statement?
- Does your executive board of directors or senior management team recognise the need to involve all staff in issues that affect their safety and health?
- Do your directors and senior managers provide daily safety and health leadership in the organisation?
- Do you have an agreed safety and health policy? Is it written into your Safety Statement?
- Have you allocated responsibilities for safety and health to specific people – are they clear on what they have to do, and are they held accountable?
- Is safety and health always considered before any new work is started or work equipment is bought?
- Did you consult and involve your staff and your Safety Representatives effectively?
- Have you identified the hazards and assessed the risks to your own staff, to others and to the public in the workplaces you control?
- Do you set standards for the premises, plant, substances, procedures, and people you control or the products you produce? Are these standards in place and the risks effectively controlled?
- Do you have an emergency plan to deal with serious or imminent danger, e.g. fires, process deviations, etc?
- Do your staff have sufficient information about the risks they are exposed to and the preventive measures they must take?
- Do you have the right levels of safety and health expertise? Are your employees properly trained and do they attend the training provided by you?
- Do you need specialist safety and health advice from outside, and if so, have you arranged to obtain it?
- Do all your staff accept their responsibilities under safety and health law?

3.4 MEASURING PERFORMANCE

Monitoring and Measurement

The organisation's executive board of directors or other senior management team needs to ensure that it is kept informed of, and alerted to, relevant safety and health risk management issues. It is recommended that boards and other controlling bodies appoint one of their number to be the 'safety and health director' who will ensure other directors are kept informed and that safety and health is actively managed on a daily basis. The board of directors or other senior management controlling body needs to ensure that its safety and health responsibilities are properly discharged by:

- reviewing its safety and health performance at least annually;
- ensuring the safety statement reflects current board priorities;
- ensuring its safety and health management system provide effective monitoring and reporting on safety and health performance or when circumstances change;

- appointing someone at senior management level who has executive responsibility for implementing its safety and health management system;
- ensuring managers at all level take their safety and health responsibilities on board;
- being kept informed about any significant safety and health failures and of the outcome of the investigations into their causes;
- ensuring that safety and health risk management systems are in place and remain effective.

Thus, procedures to monitor, measure and record safety and health performance on a regular basis should be developed, established, and periodically reviewed. The organisation should measure what it is doing to implement its safety and health policy to assess how effectively it is controlling risks, and how well it is developing a positive safety and health culture. A low accident rate, even over a period of years, is no guarantee that risks are being effectively controlled, and that injuries, ill-health, or loss will not arise in the future. This is particularly true in an organisation where there is a low probability of accidents, but where major hazards are present. Here the historical record can be an unreliable, even deceptive, indicator of safety and health performance.

Like planning, monitoring safety and health performance against predetermined plans and standards should be a line-management responsibility. Monitoring also reinforces management's commitment to safety and health objectives in general and helps to develop a positive safety and health culture by rewarding positive work done to control risk. Two types of monitoring are required:

- active systems that monitor the design, development, installation, and operation of management arrangements, safety systems, and workplace precautions;
- reactive systems that monitor accidents, ill-health, incidents and other evidence of deficient safety and health performance.

Active Monitoring

Every organisation should collect information to investigate the causes of substandard performance or conditions adequately. Documented procedures for carrying out these activities on a regular basis for key operations should be established and maintained. The monitoring system should include:

- identification of the appropriate data to be collected and accuracy of the results required;
- monitoring of the achievement of specific plans, setting performance criteria and objectives;
- installation of the requisite monitoring equipment and assessment of its accuracy and reliability;
- calibration and regular maintenance of this equipment together with documented records of both the procedures involved and the results obtained;
- analysis and records of the monitoring data collected, and documented actions to be taken when results breach performance criteria;
- evaluation of all the data as part of the safety and health management review;
- documented procedures for reviewing the monitoring and safety and health implications of forthcoming changes to work systems.

The following techniques, should be used for active measurement of the safety and health management system:

32 WORKPLACE SAFETY AND HEALTH MANAGEMENT

- systematic inspections of workplace processes or services to monitor specific objectives, e.g. weekly, monthly, or quarterly reports;
- systematic review of the organisation's risk assessments to determine whether they are functioning as intended, need to be updated and any necessary improvements are being implemented;
- plant or machinery inspections, e.g. statutory plant inspections and certification;
- environmental sampling for dusts, chemical fumes, noise, or biological agents;
- analysis of safety and health management system records.

These techniques are explained in more detail in Appendix D. Active monitoring should be proportional to the hazard profile of the organisation and should concentrate on areas likely to produce the greatest benefit and lead to the greatest control of risk. Key risk-control systems and related workplace precautions should therefore be monitored in more detail or more often (or both) than low-risk systems or management arrangements.

Reactive Monitoring

A system of internal reporting of all accidents (which includes ill-health cases) and incidents of non-compliance with the safety and health management system should be set up so that the experience gained may be used to improve the management system. The organisation should encourage an open and positive approach to reporting and follow-up and should also put in place a system of ensuring that reporting requirements are met.

The organisation should establish procedures for investigating accidents and incidents to identify their causes, including possible deficiencies in the safety and health management system. Those responsible for investigating accidents, and incidents should be identified and the investigation should include plans for corrective action, which incorporate measures for:

- restoring compliance as quickly as possible;
- preventing recurrence;
- evaluating and mitigating any adverse safety and health effects;
- reviewing the risk assessments to which the accident relates;
- assessing the effects of the proposed remedial measures.

The organisation should implement and record any changes in documented procedures resulting from corrective and preventive action. Further information on measuring safety and health performance is outlined in Appendix D.

3.5 AUDITING AND REVIEWING PERFORMANCE

Monitoring provides the information to let the organisation review activities and decide how to improve performance. Auditing and performance review are the final steps in the safety and health management control cycle. They constitute the 'feedback loop' that enables an organisation to reinforce, maintain, and develop its ability to reduce risks to the fullest extent and to ensure the continued effectiveness of its safety and health management system. Audits, by the organisation's own staff or outsiders, complement monitoring activities by looking to see if the safety and health management systems are actually achieving the right results. Results from measuring performance should be combined with information from audits to improve the organisation's overall approach to safety and health management.

Safety and Health Management System Audits

The organisation should establish and maintain a programme and procedures for periodic safety and health management system audits to be carried out to enable a critical appraisal of all the elements of the safety and health management system to be made. Auditing is the structured process of collecting independent information on the efficiency, effectiveness, and reliability of the total safety and health management system and drawing up plans for corrective action. These audits should be carried out in addition to routine monitoring, inspection, and surveillance of the safety and health management system. The purpose of these audits is to ensure the continued suitability, adequacy, and effectiveness of the safety and health management system. The audit process should ensure that the necessary information is collected to allow management to carry out this evaluation adequately.

Audit Protocols

Audit protocols and procedures should be established, documented, and maintained, and should include the following:

- allocation of resources to the process;
- personnel requirements, including that of the audit team; auditors should have the appropriate training and skills so that they can assess physical, human, and other factors and the use of procedures as well as documents or records wherever possible. Auditors should be independent of the activity being audited and include support from a wider range of specialists if necessary;
- methodologies for conducting and documenting the audits, which may include checklists, questionnaires, interviews, measurement, and direct observation;
- procedures for reporting audit findings to those responsible to facilitate timely corrective action and improvement;
- a system for auditing and tracking the implementation of audit recommendations to include addressing the possible need for changes to safety and health policy, objectives and other elements of the safety and health management system.

Audit Records

The organisation should establish and maintain audit records consistent with the safety and health management system records. Their retention times should be established and should comply with legal requirements.

Further information on setting up and operating a safety and health management system audit is given in Appendix E.

Reviewing Performance

Reviewing is the process of making judgements about the adequacy of performance and taking decisions about the nature and timing of the actions necessary to remedy deficiencies. Organisations need to have feedback to establish whether their safety and health management system is working effectively. The main sources of information come from measuring activities and from audits of risk-control systems and workplace precautions. Other internal and external influences include new legislation or changes in current good practice. Any of these can result in redesign or amendment of any parts of the safety and health management system or a change in overall direction or objectives. Suitable performance standards should be established to identify the responsibilities, timing, and systems involved. Feeding information on success and failure back into the system is an essential element in motivating employees to maintain and improve performance. Successful organisations emphasise positive reinforcement and concentrate on encouraging progress on the indicators that demonstrate improvements in risk control.

34 WORKPLACE SAFETY AND HEALTH MANAGEMENT

The aims of the review process reflect the objectives of the planning process. Reviews should examine:

- the operation, maintenance and effectiveness of the system as designed;
- the design, development and installation of the safety and health management system in changing circumstances.

Reviewing should be a continuous process undertaken at different levels in the organisation. It includes:

- remedying failures to implement workplace precautions during routine activities (first-line supervisors or other managers);
- correcting substandard performance identified by active and reactive monitoring;
- assessing plans at individual, departmental, site, group, or organisational level;
- assessing the effectiveness of the safety and health management system;
- responding to the results of audits.

The organisation should decide on the frequency of reviews at each level and devise reviewing activities to suit the measuring and auditing activities. In all reviewing activity, the result should be specific remedial actions that establish who is responsible for implementation, with deadlines set for completion. These actions form the basis of effective follow-up, which should be closely monitored. The speed and nature of response to any situation should be determined by the degree of risk involved and the availability of resources. Reviewing demands the exercise of good judgement, and people responsible for reviewing may need specific training to achieve competence in this type of task. Key performance indicators for reviewing overall performance should include:

- assessment of the degree of compliance with the safety and health system and legal requirements;
- identification of areas where the safety and health system is absent or inadequate (those areas where further action is necessary to develop the total safety and health management system);
- assessment of the achievement of specific objectives and plans;
- accident, ill-health and incident data accompanied by analysis of the immediate and underlying causes, trends and common features.

Performance indicators should be consistent with the development of a positive safety and health culture. They should emphasise achievement and success rather than measuring failure by looking only at accident data. Organisations may also 'benchmark' their performance against other organisations by comparing:

- accident rates with organisations in the same industry using similar business processes and experiencing similar risks;
- management practices and techniques with other organisations in other industries to provide a different perspective and new insights on safety and health management systems.

As part of a demonstration of corporate responsibility, more organisations are mentioning safety and health performance in their published Annual Reports. Companies should review how they have achieved the objectives and targets set in their safety and health policies and their Safety Statements and report to their Board of Directors on their implementation.

In addition employers have greater responsibilities under section 80 of the 2005 Act on 'Liability of Directors and officers of undertakings' which requires them to be in a position to prove they have proactively managed the safety and health of their workers. Data from this 'Auditing and reviewing performance' process should be used for these purposes.

KEY QUESTIONS FOR EMPLOYERS ON MEASURING, REVIEWING AND AUDITING THEIR SAFETY AND HEALTH PERFORMANCE

- Do you know how well you perform in safety and health?
- Are your executive board, your directors and senior management team kept informed of your safety and health performance, and do you report on this performance in your annual report?
- How do you know if you are meeting your own objectives and standards for safety and health? Are your controls for risks good enough?
- How do you know you are complying with the safety and health laws that affect your business?
- Do your accident or incident investigations get to all the underlying causes, or do they stop when you find the first person who has made a mistake?
- Do you have accurate records of injuries, ill health, bullying complaints, and accidental loss?
- Do you report on safety and health failures to your board and your directors?
- How do you learn from your mistakes and your successes?
- Do you carry out safety and health audits at least annually? If you do, what action do you take on audit findings?
- Do the audits involve staff at all levels? Do you involve your Safety Representative and safety committee, where it exists, in the audits?
- When did you last review your Safety Statement and your safety and health performance?
- Does your executive board of directors or senior management team review your safety and health performance and ensure safety and health risk management systems are in place and remain effective?
- Has your executive board and your directors or senior management team appointed someone at director level to ensure safety and health risk management issues are properly addressed and is this person competent to do so?

Action for Improvement

Arrangements should be put in place to ensure that the lessons learned from the Auditing and Reviewing process are put in place. This will mean the identification of the root causes of non-conformity and checking the effectiveness of, and documenting corrective actions including changes to the management system. Arrangements should be made to ensure the continuous improvement of the safety and health management system and achieving buy-in for the improvements from the workers, members of the safety committee (where it exists), and the safety representatives. The safety and health processes and performance should be compared by the organisation with others in order to improve safety and health performance.

APPENDICES A - E

APPENDIX A

TERMINOLOGY

In this guidance:

Accident means an accident arising out of, or in the course of employment which, in the case of a person carrying out work, results in personal injury.

Continuous improvement means the process of enhancing the safety and health management system to achieve improvements in safety and health performance in line with the organisation's safety and health policy.

Contractor means any individual, employer or organisation whose employees undertake work for a fixed or other sum and who supplies the materials and labour (whether their own labour or that of another) to carry out such work, or supplies the labour only.

Employee means any person who works for an employer under a contract of employment. This contract may be expressed or implied, and be oral or in writing. An employee may be employed full-time or part-time, or in a temporary capacity.

Employer means any person or organisation by which an employee is employed under a contract of employment and includes a person under whose direction and control an employee works.

Hazard means a source or a situation with the potential for harm in terms of human injury or ill-health, damage to property, damage to the environment, or a combination of these.

Hazard identification means the process of recognising that a hazard exists and defining its characteristics.

Safety and health means occupational health, safety, and welfare in the context of preventing accidents and ill-health to employees while at work.

Safety and health management system means the part of the overall management system that includes the organisational structure, planning activities, responsibilities, practices, procedures and resources for developing, implementing, achieving, reviewing and maintaining the occupational safety and health policy.

Safety and health management system audit means the systematic and documented verification process to obtain and evaluate evidence objectively to determine whether an organisation's safety and health management system conforms to the safety and health management system audit criteria set by the organisation, and communication of the results of this process to management.

Safety and health objective means the overall safety and health goal, arising from the safety and health policy, that an organisation sets itself to achieve, and which is quantified where practicable.

Safety and health performance means the measurable results of the management system related to an organisation's control of its safety and health aspects, based on its safety and health policy, objectives, and targets.

Safety and health policy means a statement by an organisation of its intentions and approach in relation to its overall safety and health performance that provides a framework for action, and for the setting of its safety and health objectives and targets.

Safety and health review means the formal evaluation of the safety and health management system.

Safety and health target means the detailed performance requirement, quantified where practicable, applicable to an entire organisation or its parts, that arises from the safety and health objectives and that needs to be set and met in order to achieve these objectives.

Ill-health includes acute and chronic ill-health caused by physical, chemical, or biological agents as well as adverse effects on mental health.

Incident means an unplanned event, with the potential to lead to an accident.

Organisation means a company, corporation, firm, enterprise, or institution, or part or combination of any of these, whether incorporated or not, public or private, that has its own functions and administration. For organisations with more than one operating unit, a single operating unit may be defined as an organisation.

Risk means the likelihood that a specified undesired event will occur due to the realisation of a hazard by, or during work activities, or by the products and services created by work activities. A risk always has two elements: the likelihood that a hazard may occur and the consequences of the hazardous event. Risk is also determined by the number of people exposed as well as how often.

Risk assessment means the process of evaluating and ranking the risks to safety and health at work arising from the identification of hazards at the workplace. It involves estimating the magnitude of risk and deciding whether the risk is acceptable or whether more precautions need to be taken to prevent harm.

APPENDIX B

SAFETY AND HEALTH TRAINING AND COMPETENCE

Training for Safety and Health

Effective safety and health training underpins the preventive approach in the 2005 Act and other safety and health legislation. Employers must provide their employees with the instruction and training necessary to ensure their safety and health. There are specific training obligations for employees involved in the safety consultation and safety representation processes. Safety and health training must form part of the training of all people who work at the workplace.

Training helps people acquire the skills, knowledge and attitudes to make them competent in the safety and health aspects of their work. It includes formal off-the-job training, instruction to individuals and groups, and on-the-job coaching and counselling. But training is only one way of ensuring satisfactory safety and health performance. It is also helpful to integrate safety and health requirements into job specifications.

Training should not be a substitute for proper risk control, for example to compensate for poorly designed plant or inadequate workstations. The key to effective training is to

understand job requirements and individual abilities. Effective training places greater emphasis on methods of learning rather than teaching methods.

Identify Training Needs

Training needs should be identified by looking explicitly at the safety and health elements in individual jobs or tasks. For existing jobs, the checklist below should be helpful:

- Consult job-specific accident, ill-health, and incident records to see what caused losses of control and how they can be prevented.
- Gather information from employees about how the work is done.
- Observe and question employees when they are working, to understand what they are doing and why. This may be particularly relevant in complex process plant where any analysis has to take account of all the possible consequences of human error, some of which may be remote from the particular task in hand. It could include formal task or error analysis.
- Consult risk assessments for the work.
- Consider the financial and economic benefits of good safety and health performance.

There are three main types of training needs – organisational, job-related, and individual.

Organisational Needs

Everyone in the organisation should know about the organisation's safety and health policy and the philosophy underlying it and the structure and systems for delivering the policy.

Employees should also know which parts of the systems are relevant to them, to understand the major risks in the organisation's activities and how they are controlled.

Job-related Needs

These fall into two main types: management needs and non-management needs. Management needs include:

- leadership skills;
- communication skills;
- techniques of safety and health management;
- training, instruction, coaching and problem-solving skills relevant to safety and health;
- understanding of the risks in a manager's area of responsibility;
- knowledge of relevant legislation and appropriate methods of control, including risk assessment;
- knowledge of the organisation's planning, measuring, reviewing, and auditing arrangements;
- awareness of the financial and economic benefits of good safety performance.

Some managers in key positions may have particular needs. This would apply to those who devise and develop the safety and health management system, investigate accidents or incidents, take part in review and audit activity, or who implement emergency procedures.

Non-management needs include:

- an overview of safety and health principles;
- detailed knowledge of the safety and health arrangements relevant to an individual's job;
- communication and problem-solving skills to encourage effective participation in safety and health activities.

Individual Needs

Individual needs are generally identified through performance appraisal. They may also arise because an individual has not absorbed formal job training or information provided as part of their induction. Training needs vary over time, and assessments should cover:

- induction of new starters, including part-time and temporary workers;
- maintaining or updating the performance of established employees, especially if they may be involved in critical emergency procedures;
- job changes, promotion, or when someone has to deputise;
- introduction of new equipment or technology;
- follow-up action after an incident investigation.

Under the 2005 Act, account must be taken of the employee's capabilities for the specific tasks for which safety and health training is being provided.

Identify Training Objectives and Methods

Based on job analysis and risk assessment, organisations should set training objectives and priorities. These can be used as the basis for measuring the effectiveness of training. Training methods should be devised to suit the objectives. Some training needs may have to be met through closely supervised on-the-job experience. For some high-risk jobs and tasks, the training may include simulation exercises. Distance-learning or computer-based interactive material may also be available.

Deliver Training

Training can take place internally or externally, in either case using internal resources or consultants. Under the 2005 Act, safety and health training must be provided in a form, manner, and language that can be understood by employees. It is important that employees are provided with the opportunity to apply their training, and that supervisors ensure they apply their training as intended.

Evaluation and Feedback

Employers should formally evaluate training to establish whether it has led to the desired improvement in work performance and to help in targeting future training.

Specialist Advice and Services

Access to Specialist Advice and Services

Organisations should have access to sufficient safety and health knowledge, skills, or experience to identify and manage safety and health risks effectively, and to set appropriate objectives. This should be achieved by one or more of the following:

- training managers to a sufficient level of competence to be able to manage their activities safely and keep up to date with developments in safety and health;
- employing appropriate safety and health professionals as part of the management team to advise the organisation on relevant safety and health matters;
- acquiring the necessary skills and advice from external providers as required.

Whichever method or combination of these methods is chosen by an organisation, it does not relieve the employer and the management of the organisation from their legal responsibilities to ensure a safe workplace.

Role and Functions of Safety and Health Advisers

Safety and health advisers should have the status and competence to advise management and employees with authority and independence. By virtue of the definition of 'competent person' under the 2005 Act, they must possess sufficient training, experience, and knowledge appropriate to the work to be done. They should be capable of advising on:

- formulating and developing safety and health policies, not just for existing activities but also with respect to new acquisitions or processes;
- promoting a positive safety and health culture in the organisation and securing the effective implementation of safety and health policy;
- planning for safety and health, including the setting of realistic short- and long-term objectives, deciding priorities, and establishing adequate systems and performance standards;
- day-to-day implementation and monitoring of policy and plans, including accident and incident investigation, reporting, and analysis;
- reviewing performance and auditing the whole safety and health management system.

To do this properly, safety and health advisers should:

- be properly trained by reputable organisations or be individuals who are suitably qualified. They should also be undergoing a continuous professional development programme. Membership of recognised professional safety and health bodies or qualification to at least Diploma level in a recognised third-level safety and health course may offer routes for demonstrating competence;
- maintain adequate information systems on topics including safety and health law, safety and health management, and technical advances;
- demonstrate the ability to interpret the law in the context of the organisation;
- be involved in establishing organisational arrangements, systems, and risk- control standards relating to hardware and human performance, by advising line management on matters such as legal and technical standards;
- establish and maintain procedures for reporting, investigating, recording, and analysing accidents and incidents;
- establish and maintain procedures, including monitoring and other means such as review and auditing, to ensure that senior managers get a true picture of how well safety and health is being managed (where a benchmarking role may be especially valuable);
- present their advice independently and effectively.

Relationships Within the Organisation

Safety and health advisers should:

- support the provision of authoritative and independent advice;
- have a direct reporting line to directors on matters of policy, and have the authority to stop work if it contravenes agreed standards and puts people at risk of serious injury;
- have responsibility for professional standards and systems; on large sites or in a

group of companies, they may also have line-management responsibility for other safety and health professionals.

Relationships Outside the Organisation

Safety and health advisers will need to liaise with a wide range of bodies and individuals as necessary, including:

- the Health and Safety Authority;
- local-authority Environmental Health Officers and licensing officials;
- the Fire Service;
- the Garda Síochána;
- the Coroner or the courts;
- employers' and workers' representatives;
- contractors, architects, and design consultants;
- equipment suppliers;
- insurance companies;
- clients, customers, and the public;
- general medical practitioners and occupational health physicians;
- occupational health specialists and services;
- the media.

They should be trained to communicate effectively with these groups.

External Specialist Safety and Health Support

From time to time, an organisation may require further specialist safety and health support. Areas where specialist support may be needed, where in-house expertise and/or resources may be insufficient to meet the organisation's needs or where they may wish to have an independent view, include:

- initial safety and health management system review;
- guidance in following and interpreting statutory requirements;
- hazard identification and risk assessment;
- design of new facilities, equipment and processes;
- safety and health investigations;
- personal monitoring of exposure to hazardous agents;
- health surveillance;
- control strategies for eliminating or reducing risk, i.e. engineering controls or PPE;
- accident or incident investigation and specifying remedial actions;
- specialist safety and health training;
- carrying out safety and health management system measurements, reviews and audits.

The 2005 Act requires that preference should be given to appointing internal expertise to carry out this work, where the expertise is available. It should also be noted that the definition of 'director' in the 2005 Act does not include a person who gives advice in a professional capacity.

APPENDIX C

RISK ASSESSMENT AND CONTROL

The Legal Basis for Risk Assessment

Section 19 of the 2005 Act requires employers and those who provide workplaces for use by others (under section 15 to the extent they have control) to identify the hazards posed by their workplaces and work activities. These duty-holders must also assess the risks posed by these hazards to their own employees, to other employees, and others (e.g. visitors, customers or passers by), and prepare written risk assessments. Any improvements considered necessary in these assessments must be implemented.

Under section 20 of the 2005 Act, the employer and workplace controllers (under section 15) must also prepare a safety statement which specifies the manner in which the safety, health and welfare at work of his or her employees and others should be secured and managed. The safety statement must include the hazards identified and the risks assessed under section 19, the protective and preventive measures to be taken, and the resources to be provided for protecting safety, health and welfare. These risk assessments and the safety statement must be updated as necessary, particularly when situations change that affect safety and health.

Several other statutory provisions contain provisions for risk assessment, e.g. the General Application Regulations on use of work equipment, PPE, manual handling, pregnant employees, etc, on noise, chemical and biological agents, major accident hazards, and on the classification, packaging, and labelling of chemicals.

All these Regulations require risk assessments to be carried out on the subjects covered by the Regulations. Risk assessment is the process of examining what can cause harm to people in the workplace so that a judgement can be made as to whether sufficient arrangements and precautions are in place or additional measures are required. Risk is also dependent on the number of employees exposed to the risk. The aim is to identify potential sources of harm and put in place adequate control or preventive measures before they result in an accident or ill-health.

Key Stages of Risk Assessment and Control

The key stages in the risk assessment and control processes are as set out in the flowchart following.

Use Trained Risk Assessors

Ensure that the people responsible for carrying out risk assessments have the necessary skills and training to carry out these assessments. The training must include a specific focus on the methodology to be used. Risk assessors must be familiar with any relevant safety and health legislation, standards, codes of practice, or guidance covering the activity being assessed.

Prepare an Inventory

An inventory of all work activities, processes, equipment, or machines used must be prepared for each work area or location being assessed. It is vital to include infrequent maintenance tasks as well as more routine day-to-day work. Possible ways of classifying work activities include:

- geographical areas within/outside the organisation's premises;
- stages in the production process, or in the provision of a service;

- planned and reactive work;
- defined tasks (e.g. driving).

Identify the Hazards

For each activity, the hazards must be identified. These may include:

- slips, trips, or falls on the level;
- falls of persons from heights;
- falls of tools or materials from heights;
- inadequate headroom;
- hazards associated with manual lifting/handling of tools, materials, people, or animals;
- hazards from plant and machinery associated with assembly, commissioning, operation, maintenance, modification, repair and dismantling;
- vehicle hazards, covering both site transport (e.g. at loading bays or in the warehouse) and travel by road;
- fire and explosion;
- substances that may be inhaled, absorbed, or ingested;
- substances or agents that may damage the eye;
- harmful energies (e.g. electricity, radiation, noise, vibration);
- work-related upper limb disorders resulting from frequently repeated tasks;
- inadequate thermal environment, e.g. too hot or too cold;
- lighting level for tasks;
- slippery, uneven ground/surfaces;
- inadequate or no guard rails/hand rails on stairs/steps;
- contractors' activities on site;
- confined space entry;
- human factor hazards (e.g. human error, stress, violence to staff, bullying, passive smoking, sexual harassment, shift-work, piece-work);
- temporary work;
- working alone or in remote locations;
- home workers, including teleworking.

The above list is not exhaustive. Organisations should draw up their own hazard checklists, taking into account the nature of their work activities and locations where work is carried out. Relevant safety and health legislation, codes of practice, standards and guidelines should be used for drawing up hazard checklists.

Assess the Risks

The risks associated with each hazard must then be assessed by determining who might be harmed and how. The assessment should evaluate the potential for harm and its consequences. Consideration should be given to the number of persons exposed to the hazard, the frequency and duration of exposure to the hazard, potential failure modes, and routes of exposure. The consequence of harm could range from slight injury or ill-health to lacerations, fractures, amputations, chronic pain, poisonings, cancer, or fatal injuries.

44 WORKPLACE SAFETY AND HEALTH MANAGEMENT

The most practical ways for carrying out risk assessment include comparing the situation found with that set out in the relevant safety and health legislation, code of practice, or authoritative standards/guidance appropriate to the hazard. Linking safety control measures with hazard identification and risk assessment processes is an effective method of creating an understanding and adoption of the control measures by employees.

Safety and health legislation requires that employees, including the Safety Representative, be consulted and involved in the risk assessment process, to ensure they understand the reasons for it and take ownership of the remedial measures or precautions that are put in place. A system for involving employees in the risk assessment process must be developed in the organisation.

Identify Appropriate Action

If the arrangements in place for the activity being assessed are not in accordance with the relevant safety and health legislation, codes of practice, authoritative standards or guidance, the deficiencies should be noted and appropriate action identified. Items in need of attention can be prioritised as:

- immediate;
- short-term;
- medium-term;
- long-term.

Prioritisation should take account of the analysis of the likelihood of injury and the consequences carried out under the risk assessment section above. A simple form of risk estimation is described below to illustrate these general principles.

Risk Assessment Records and Control

A written record of the risk assessments must be retained, and all relevant safety and health procedures documented. These should be integrated into the organisation's Safety Statement and brought to the attention of all affected persons. Adequate documentation can also contribute to consistent application. In some cases, the law requires suitable records to be maintained (e.g. the record of risk assessments to be included in the Safety Statement, statutory examination reports on certain plant and equipment, etc.).

The organisation should document its risk assessment and risk control procedures so that they are proportional to its business needs, hazards, and risks. The control of relatively minor hazards affecting all employees (such as ensuring passages and gangways remain free from obstruction) can be dealt with by a number of simply stated general rules. The control of more hazardous activities may need more detailed workplace precautions. Control of high-hazard activities may demand detailed workplace precautions, which need to be strictly followed, such as permit-to-work systems.

All the components of the safety and health management system need to be adequately inspected, maintained, and monitored to ensure continued effective operation. Risk assessments and workplace precautions should be reviewed in the light of changes and technological developments. The type, frequency and depth of maintenance should reflect the extent and nature of the hazards and risks revealed by risk assessment. The balance of resources devoted to the various control systems will also reflect the hazard profile of the business.

A Simple Risk Estimation Example

Hazards

The potential of something at work to cause harm will vary in severity. Hazard is the intrinsic property of the material or activity before controls are put in place. The likely effect of a hazard may, for example, be rated as:

- **major:** death or major irreversible injury (e.g. amputation, fracture or serious hand injury that could affect its future use) or illness causing long-term disability
- **serious:** injuries or illness causing short-term disability;
- **slight:** all other injuries or illness.

Harm may not arise from exposure to a hazard in every case. In practice, the likelihood and severity of harm will be affected by how the work is organised, how effectively the hazard is controlled, and the extent and nature of exposure to it. In the case of health risks, latent effects and individual susceptibility will also be relevant. Judgements about likelihood will also be affected by experience of working with a hazard; for example, the analysis of accident, ill-health and incident data may provide a clue. The likelihood of harm may be rated as:

- **high:** where it is certain or near certain that harm will occur;
- **medium:** where harm will often occur;
- **low:** where harm will seldom occur.

Only one or several employees maybe exposed, either continually or for a short period. In this case, risk can be defined as the combination of the severity of harm with the likelihood of its occurrence and number exposed, or:

$$\text{Risk} = \text{Severity of harm} \times \text{Likelihood of occurrence} \times \text{Number of workers exposed to hazard}$$

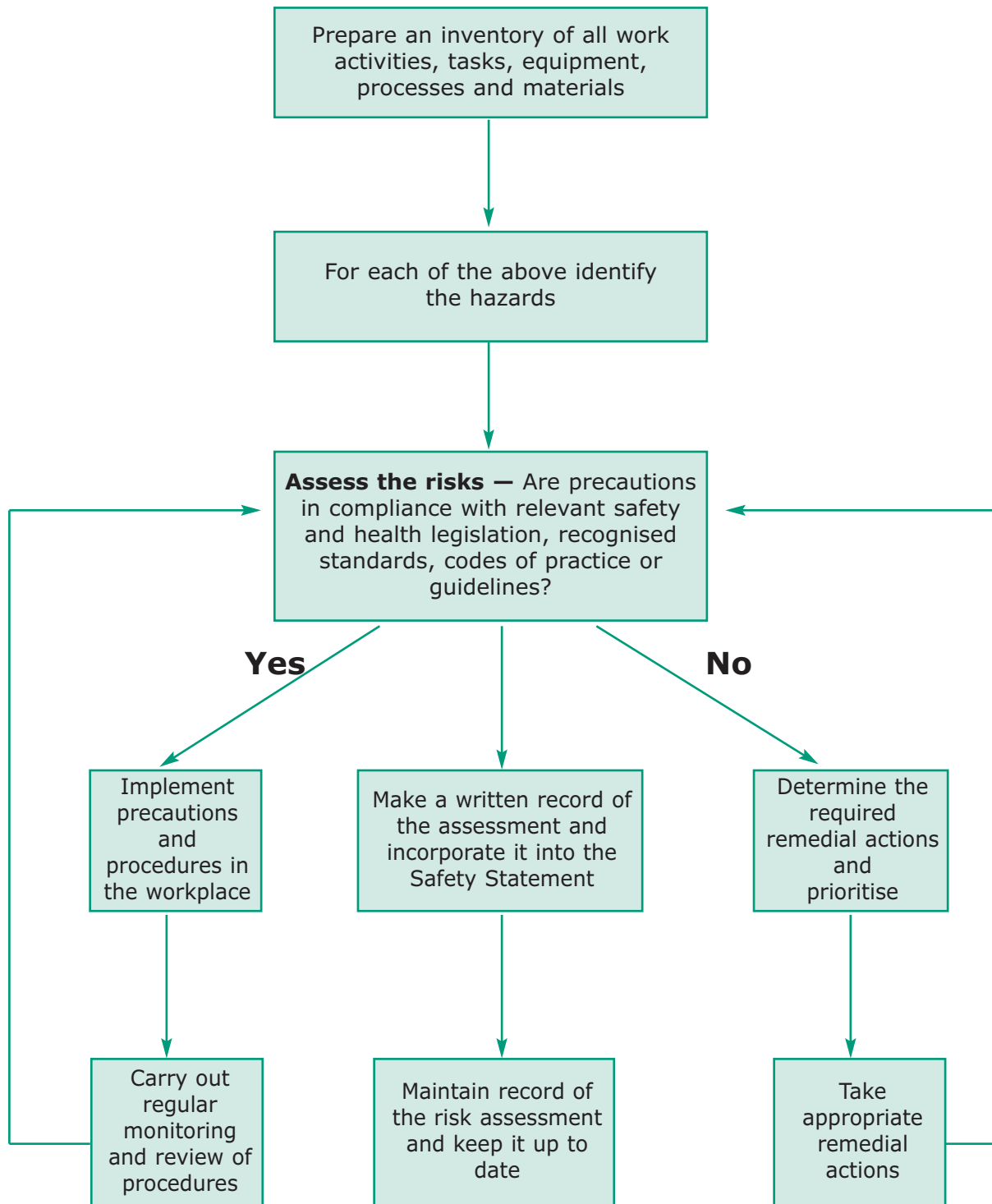
This simple computation enables a rough and ready comparison of risks. If hazards could affect more than one person, risk assessors can assign a relative weighting to reflect this. In practice, organisations use risk assessment systems which best suit their needs, e.g. the major accident prevention policies and safety reports required for major accident hazards sites might use a combination of quantified risk assessment (QRA), hazard and operability studies (HAZOP) studies, and fault tree analysis.

Remedial Measures

Remedial measures to control the risk should be chosen, taking into account the following hierarchy of control:

- the elimination of hazards altogether where possible or combating risks at source, e.g. totally enclosed chemical processes;
- if elimination is not possible, the reduction of risk, e.g. by using a safe substance instead of a dangerous one, or by using a low voltage electrical appliance;
- measures that protect everyone, e.g. local exhaust ventilation, noise reduction measures, machine guarding, restricting access to trained and authorised personnel, safe work procedures and systems;
- the need to introduce planned maintenance of, for example, machinery safeguards;
- the use of personal protective equipment, but only as a last resort after all other control options have been considered;
- the need for emergency arrangements;
- any improved control measures that may arise from technical progress.

KEY STAGES OF RISK ASSESSMENT AND CONTROL



APPENDIX D

MEASURING SAFETY AND HEALTH PERFORMANCE

Performance measurement is an essential part of the safety and health management system. Key purposes of performance measurement are to:

- determine whether safety and health policies and plans have been implemented and achieved;
- check that risk-control measures have been implemented and are effective;
- learn from safety and health management system failures, including hazardous events (accidents, near misses and ill-health cases);
- promote better implementation of plans and risk controls by providing feedback to all parties;
- provide information that can be used to review and, where necessary, improve aspects of a safety and health management system.

Active and Reactive Monitoring

It is often necessary to use both active and reactive and monitoring data to determine whether objectives are achieved. An organisation's performance management system should incorporate both active and reactive monitoring. Active monitoring should be used to check compliance with the organisation's safety and health activities, for example to confirm that recently appointed staff have attended an induction course. Reactive monitoring should be used to investigate, analyse, and record safety and health management system failures, including accidents, near misses, and ill-health cases.

Measurement Techniques

The following are examples of methods that can be used to measure safety and health performance:

- systematic workplace inspections or safety tours using checklists;
- inspections of specific machinery and plant to check that safety-related parts are fitted and in good condition;
- safety sampling – examining specific aspects of safety and health;
- environmental sampling – measuring exposure to chemical, biological or physical agents (e.g. noise, chemical fumes, dusts, X-rays) and comparing with recognised standards;
- behaviour sampling – assessing employees' behaviour to identify unsafe work practices that might require correction;
- analysis of documentation and records;
- benchmarking against good safety and health practices in other organisations.

Inspection

A system for inspecting workplace precautions is important in any active monitoring programme. It can form part of the arrangements for the preventive maintenance of plant and equipment, which may also be covered by legal requirements. Equipment in this category includes pressure vessels, lifts, cranes, chains, ropes, lifting tackle, scaffolds, trench supports, and local exhaust ventilation. But inspections should include

other workplace precautions, such as those covering the use of premises, other places of work, and systems of work.

A suitable programme should take all risks into account but should be properly targeted. For example, low risks might be dealt with by general inspections every month or two, covering a wide range of workplace precautions such as the condition of premises, floors, passages, stairs, lighting, welfare facilities, and first aid. Higher risks need more frequent and detailed inspections, perhaps weekly or even, in extreme cases, daily, or before use. An example of a pre-use check would be the operation of mobile plant. The inspection programme should satisfy any specific legal requirements and reflect risk priorities. Suitable schedules and performance standards for the frequency and content of inspection can help. The schedules can be supplemented with inspection forms or checklists, both to ensure consistency in approach and to provide records for follow-up action.

Inspections should be carried out by people who have the necessary skills and training to identify the relevant hazards and risks and who can assess the conditions found. A properly thought-out approach to inspection will include:

- well-designed inspection forms to help plan and initiate remedial action by requiring those doing the inspection to rank any deficiencies in order of importance;
- summary lists of remedial action with names and deadlines to track progress on implementing improvements;
- periodic analysis of inspection forms to identify common features or trends that might reveal underlying weaknesses in the system;
- information to aid judgements about any changes required in the frequency or nature of the inspection programme.

Accident, Ill-health and Incident Investigations

Organisations should have effective procedures in place for reporting and investigating accidents, ill-health cases, near misses, or any other incidents. The prime purpose of the investigation procedure is to prevent further accidents or ill-health. The occurrence of accidents and ill-health is usually evidence of safety and health management failures. In order to find out why an accident, case of ill-health, or near miss happened, shortcomings in the safety and health management system should be investigated. The investigation procedure should include:

- the types of events to be investigated (e.g. only investigate near misses that could have led to serious harm);
- co-ordination with emergency plans and procedures where appropriate;
- the purpose of investigations;
- the scale of investigative effort in relation to the potential or actual harm;
- who is to investigate the accident or ill-health case;
- the authority of the investigators, their required competencies, and associated training needs (including line management);
- arrangements and location for witness interviews;
- practical issues such as availability of cameras and storage of evidence;
- the role of the Safety Representative in the investigation;
- investigation reporting arrangements, including statutory reporting requirements.

Investigation personnel should begin their preliminary analysis of the facts while further

information is collected. Data collection and analysis should continue until an adequate and sufficiently comprehensive explanation is obtained.

Key Data to be Covered in Accident, Ill-health and Incident Reports

The Event

Details of any injured person, including age, sex, experience, training, etc.;

- A description of the circumstances, including the place, time of day, and conditions;
- Details of the event, including:
 - any actions which led directly to the event;
 - the direct causes of any injuries, ill-health or other loss;
 - the immediate causes of the event;
 - the underlying causes, for example failures in workplace precautions, risk-control systems, or management arrangements.
- Details of the outcomes, including in particular:
 - the nature of the outcome, for example, injuries or ill-health to employees or members of the public, damage to property, process disruptions, emissions to the environment, creation of hazards;
 - the severity of the harm caused, including injuries, ill-health and losses;
 - the immediate management response to the situation and its adequacy;
 - ▼ Was it dealt with promptly?
 - ▼ Were continuing risks dealt with promptly and adequately?
 - ▼ Was the first-aid response adequate?
 - ▼ Were emergency procedures followed?
 - whether the event was preventable and if so how.

The Potential Consequences

- What was the worst that could have happened?
- What prevented the worst from happening?
- How often could such an event occur (the '*recurrence potential*')?
- What was the worst injury or damage, which could have resulted (the '*severity potential*')?
- How many people could the event have affected (the '*population potential*')?

Recommendations

- Prioritised actions with responsibilities and targets for completion
- Whether the risk assessments need to be reviewed and the safety statement updated.

Learning From and Communicating Results from Investigations

The organisation, having learnt from its investigations, should -

- identify root causes in the safety and health and general management of the organisation;
- communicate findings and recommendations to all relevant parties;
- include relevant findings and recommendations from investigations in the continuing safety and health review process.

Implementation of remedial controls should be monitored to ensure timely and effective change.

Cautions in Using Accident and Ill-health Data

Accident and ill-health data are important, as they are a direct indicator of safety and health performance. However, some cautions relating to their use are listed below:

- Most organisations have too few injury accidents or cases of work-related ill-health to distinguish real trends from random effects;
- If more work is done by the same number of people in the same time, increased workload alone may account for an increase in accident rates;
- The length of absence from work attributed to injury or work-related ill health may be influenced by factors other than the severity of injury or occupational ill health. Such factors can include poor morale, monotonous work, stressful working conditions, poor management/employee relations, and local advice or traditions;
- Accidents are often under-reported, and occasionally over-reported. Levels of reporting can change. They can improve as a result of increased workforce awareness and better reporting and recording systems;
- A time delay can occur between safety and health management system failures and harmful effects. Moreover, many occupational diseases have long latent periods. Management should not wait for harm to occur before judging whether safety and health management systems are working.

APPENDIX E

AUDITING SYSTEMS

Safety and Health Management System Auditing

Auditing is an essential element of a safety and health management system. Safety and health management system auditing is a process whereby the organisation can review and continuously evaluate its safety and health effectiveness. The organisation should evaluate its safety and health performance in order to:

- maximise knowledge on its effectiveness;
- ensure that appropriate action is taken to improve the control of specific risks;
- improve overall safety and health performance;
- further develop safety and health policies and procedures.

In general, safety and health audits need to consider overall safety and health policy, procedures, and the conditions or practices in the workplace. Senior managers should evaluate the overall strategy of the safety and health management system to determine whether it meets the needs of the organisation, its shareholders, and the regulatory authorities. This should allow them to provide directional feedback to the organisation, help them determine future priorities for meaningful planning and continual improvement.

Board and Senior Management Commitment to Auditing

For safety and health auditing to be of value, the board of directors of the organisation and its senior management should be fully committed to the concept of auditing and its effective implementation within the organisation. This includes a commitment to consider audit findings and recommendations and to take appropriate action as necessary, within an appropriate time. Senior and line management should recognise that, once they have agreed that an audit should be carried out, it should be completed in an impartial way.

Co-operation with the Auditors

All relevant personnel should be informed of the purposes of auditing and the benefits. Staff should be encouraged to co-operate fully with the auditors and to respond to their questions honestly.

Essential Elements of a Safety and Health Management System Audit

Safety and health auditing should include the following essential elements.

Formal Auditing

Formal auditing provides a comprehensive and formal assessment of the organisation's compliance with safety and health procedures and practices. The end result of a formal audit should include a detailed written assessment of safety and health procedures, the level of compliance with procedures and practices, and where necessary, identify corrective actions.

Regular and Ad hoc Inspections

Regular and ad hoc inspections provide a means of checking compliance with individual safety and health requirements.

The results of these audits and inspections should be fed back to the relevant parties as soon as possible to allow corrective action to be taken. As many employees as practicable, including the Safety Representative, should be involved when auditing activities in their work areas.

Planning and Managing Safety and Health Management System Audits

Audit Programme

A programme of auditing should be prepared and included in the Safety Statement. Some of the factors that may need to be taken into account when deciding the frequency of audits include the nature of the hazards; an adverse audit or incident record; and any legislative requirements.

Auditor Selection, Competence, and Training

One or more persons may undertake audits. A team approach may widen involvement and improve co-operation. External or internal auditors may be used but preference should be given to internal auditors if the expertise is available. In either case, they should be independent of the part of the organisation or the activity that is to be audited.

Auditors need to understand their task and be competent to carry it out. They need to have the experience and knowledge of the relevant safety and health standards and systems they are auditing to enable them to evaluate performance and identify deficiencies. Auditors should be familiar with the requirements set out in any relevant safety and health legislation so that they can identify unsafe behaviour that would not be reflected in the organisation's documents and records. In addition, auditors should be aware of, and have access to standards and authoritative guidance relevant to the work they are engaged in.

Data Collection and Interpretation

The techniques and aids used in the collection of the information will depend on the nature of the audit being undertaken. The audit should ensure that a representative sample of key activities is included in the audit and key personnel should be interviewed. Relevant documentation should be examined. This may include:

- safety and health management system documentation;
- risk assessments and Safety Statement;
- safety and health and emergency procedures;
- permit-to-work systems and confined space entry procedures;
- minutes of safety and health meetings;
- accident/incident reports and records;
- any reports or communication from the Health and Safety Authority (e.g. verbal reports and advice, letters, notices);
- statutory registers and certificates;
- training records.

The value of an audit depends on the experience and knowledge of the auditors and their ability to interpret observations and elaborate on the findings. It is also dependent on the integrity of all parties involved. Wherever possible, checks should be built into the system to help to avoid misinterpretation or misapplication of audit records.

Audit Reporting

At the end of the audit, the auditor or audit team should summarise and feed back their initial findings to the manager responsible and, in particular, draw attention to any issues that are so significant that they need immediate action. The audit report should

assess overall performance, identify any inadequacies, and make recommendations on action for improvement.

Acting on Audit Results

An action plan of agreed remedial measures should be drawn up together with identification of responsible persons, completion dates, and reporting requirements. Follow-up monitoring arrangements have to be established to ensure satisfactory implementation of the recommendations.

Effective Safety and Health Audit Systems

Effective auditing systems are carried out by a competent individual or team specifically trained to do the work (this may involve a team of managers, specialists, other employees or their representatives, or external consultants). The auditor(s) is/are independent of the area or section being audited.

Audits are designed to assess the key elements of safety and health management listed below.

Safety and Health Policy

Intent, scope and adequacy of the safety and health policy

Organisation

- the acceptance of safety and health responsibilities by line managers and the adequacy of arrangements to secure control;
- the existence and thoroughness of safety and health documentation;
- the adequacy of arrangements to consult and involve all employees in safety and health;
- the adequacy of arrangements to communicate policy and relevant information;
- the adequacy of arrangements to secure the competence of all employees and the provision of safety and health assistance;
- the level of emergency prevention, preparedness, and response;
- contracting and procurement procedures;
- worker participation and the effectiveness in promoting full worker participation;

Planning and Implementation

- the overall control and direction of the safety and health effort;
- the adequacy of the management arrangements, risk-control systems, and workplace precautions;
- the extent of compliance with relevant safety and health laws;
- the adequacy of resources and their proportional allocation to reflect the hazard profile of the business;
- the extent of compliance with management arrangements, performance standards, and the effectiveness of workplace precautions in achieving control of risk;
- long-term improvement in the accident and incident performance;
- the effectiveness of promoting full worker participation.

Measuring Systems

The adequacy, relevance and design of measuring systems.

Reviewing Systems

The ability of the organisation to learn from experience, improve performance, develop the safety and health management system, and respond to change.

REFERENCES

International

1. Guidelines on occupational safety and health management systems, International Labour Office, Geneva, ILO - OSH 2001
2. Successful health and safety management (2nd edition), HSG 65, HSE Books, London 1997, ISBN 0 7176 1276 7.
3. Strategies to promote safe behaviour as part of a health and safety management system, Health and Safety Executive, UK, Contract Research Report 430/2002
4. BS 8800: 2004 Guide to occupational health and safety management systems, British Standards Institution, London.
5. Occupational health and safety management systems – Specification, OHSAS 18001:1999 and Guidelines for the implementation of OHSAS 18001, OHSAS 18002:2000, National Standards Authority of Ireland (NSAI)
6. Systems in Focus – guidance on occupational safety and health management systems, Institution of Occupational Safety and Health, UK, 2003

Health and Safety Authority guidance

The Health and Safety Authority has produced many publications that can be consulted for further information when preparing and implementing the Safety Statement or developing a safety and health management system. They cover:

- specific workplace hazards, e.g. on manual handling, noise, stress, violence, bullying, chemicals, carcinogens, asbestos, petroleum, and confined spaces;
- certain work sectors, e.g. for construction, quarries, agriculture, forestry, chemical processing, LPG filling, offices, shops, transport of dangerous goods, security industry, hotels, catering and restaurants, retail and distribution;
- sector specific safety statements, e.g. for agriculture, shops, fishing vessels, small businesses, and;
- other work-related issues, e.g. on safety representatives and consultation, obligatory safety signs, pregnancy and work, child safety on farms, safety and workplace vehicles, rider operated lift trucks, occupational asthma, safety consultation and representation, scaffolding, cranes and roofwork.

All of these publications are available on the Authority website at www.safework.ie. Most are free of charge. Priced publications are also available from Health and Safety Authority Publications at telephone 1890 289 389.

Workplace Safety and
Health Management

*Achieving a
Healthy
and Safe
Working Life
-Together*

HEALTH AND SAFETY
AUTHORITY HEADQUARTERS

10 Hogan Place, Dublin 2

Tel. 1890 289 389

Callers outside
Republic of Ireland

00353-1-6147000

Fax. (01) 614 7020

website: www.hsa.ie



HEALTH AND SAFETY
AUTHORITY

ISBN 1-84496-033-1