Accident-Free Steel

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Committee on Human Resources Working
Group on Improving Steel Plant Safety

International
Iron and
Steel
Institute

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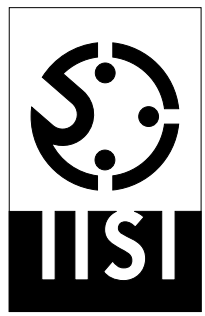

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Foreword

Accident-Free Steel

To aim for an accident-free working environment is everyone's responsibility. Many steel companies have found it is possible to reduce dramatically the number of accidents at work by giving safety the necessary priority. The progress achieved has shown that a safe way of working is a quality and efficient way of working.

Much can be done to improve the situation further. The safety performance of our industry still varies significantly between different businesses and between different departments in the same business. The best show what can be achieved.

This report is the result of an exchange of ideas and experience between safety specialists and line managers from IISI member companies around the world. It was commissioned by the IISI Board of Directors and undertaken by the IISI Committee on Human Resources. It is essential reading for all steel industry managers who wish to take up the challenge of making the steel industry an accident-free working environment.

A presentation of the report was made to the IISI Board of Directors at its meeting in Taipei in October 1998. The Board of Directors comprises the Chief Executive Officers of the leading sixty steel enterprises around the world. The Board approved the findings of the report and committed IISI to help its members achieve an accident-free working environment. First, the publication of this report should be given wide circulation amongst managers in the steel industry. Secondly, a series of regional seminars will be held to enable managers to share new ideas on improving safety. Thirdly, IISI will collect statistics from its member companies to record progress on reducing accident rates.

Thomas J. Usher, Chairman IISI
Chairman and Chief Executive Officer, USX Corporation

Francis Mer, Président, Directeur Général, Usinor
(1998 Chairman IISI)

Staffan Mejer, Chairman IISI Committee on Human Resources
Vice President, Human Resources, SSAB Tunnplåt

Preface

I was pleased to be invited by IISI to chair its special Working Group set up to share experience amongst steel industry managers on how to further safety. The commitment and enthusiasm from members of the Working Group made it a very rewarding experience. Their names are listed at the end of the report and I wish to thank them for all the hard work that went into its preparation.

I hope that readers of the report find it of real value in identifying ways in which they can change the culture and behaviour of everyone working in a modern steel plant.

Jean-Marie Paul-Dauphin
General Manager, Health, Safety & Environment
Usinor

Executive Summary

This report was prepared by a special Working Group set up by the IISI Committee on Human Resources at the request of the IISI Board of Directors. The report contains advice and recommendations on how to improve steel plant safety based on the experience of senior line managers and safety specialists from IISI member companies around the world. It is addressed to senior management, plant managers, safety managers and other specialist staff in steel companies. The report's general remarks are supported by individual cases and examples.

Three components are essential to progress in steel plant safety:

1. The condition of the work place environment.

2. The training and competence of employees.

3. The motivation and behaviour of employees.

The first two components have been discussed in previous reports on safety and, therefore, this report focuses on the potential of the third element.

The principal recommendations that appear in the report relate to the elements which are judged essential by all the members of the Working Group:

1. Substantial commitment and leadership of safety by management - with both hearts and minds.

2. A change in the attitude and behaviour of individuals and working groups with respect to safety in all aspects of our companies.

3. The elimination of a two-tier approach to safety.

For the first element, this requires:

- A strong and visible commitment from the very top of the company and communicated to and shared by all levels of management.
- The setting of examples and the raising of standards by managers who must do themselves what they tell others to do.

- A communication plan and a participatory way of working, which will obtain the commitment to safe working from the maximum number of persons and will confirm that this commitment is real.
- The recognition of best practice in safety and the exchange of these ideas, both within and between companies.
- An organisational structure appropriate to the problems to be solved, well defined by management and well understood by everyone in the company.
- The setting of ambitious goals for the improvement of safety and the measurement of progress by the collection of appropriate statistics.

The organisation should spell out every person's role, particularly that of the specialist and of the employee representative; but this in no way should be seen as a delegation by management of its prime responsibility for safety.

For the second element, attention should be focused on those factors which influence safety behaviour:

- The mechanisms having an influence on behaviour, the triggers that management should develop and the consequences that should be understood by all participants. Management's role is to assure the adoption of those factors that can become the base of further progress.
- The recognition that career development depends on an individual's safety performance.
- Putting into practice methods of management which demonstrate that attitude and behaviour to safety is an essential part of the professionalism of everyone: through training programmes, individual interviews, career development etc.
- The acceptance by everyone of his/her responsibility for their own safety and the safety of others. We do not work alone but belong to a team.

The third element requires that external contractors working on steel sites should attain the same level of safety as our own employees and use the same methods to achieve this.

An Introduction to the Issues

The difference between an incident which leads to a fatality and one which leads to a near miss, is a matter of luck. For every serious injury, there are many times the number of minor accidents and hundreds of potentially unsafe acts. To eliminate fatalities and serious injuries requires the elimination of all incidents and unsafe acts.

The three components of the management of safety are complementary and additive, but whilst the condition of the work place environment and the improvement of competence may be changed relatively fast, the change of individual behaviour is a much longer-term process.

Chapter 2

The Safety Challenge

Steel companies have significantly improved their safety performance over the last 10 years, but many have reached a plateau where further progress is more difficult to achieve. To proceed from the plateau, it is necessary to go beyond our traditional methods of approach and to challenge the implicit acceptance that we operate in a potentially dangerous industry where some accidents are inevitable. The new thinking states clearly that all accidents are avoidable and "Accident-Free" Steel is a practical goal for the future.

Chapter 3

Fundamental Principles and New Initiatives

Establishing and developing a safety culture within an organisation and managing safety from a behavioural perspective is the most powerful approach to the management of safety. The main elements in creating a safety culture are described including policy statements, the central role of management and the role of employees, trade unions and employee representation. Alternative types of safety organisations are discussed.

A behavioural model for safety is set out outlining the relationships between activators, including corporate expectations and personal needs, behaviour, and consequences. The report discusses the influencing of individual behaviour through negative enforcement and positive reinforcement. It outlines the key factors to manage change including training, communication and participation.

Chapter 4

Statistics

Statistics are used by the industry to measure many aspects of performance, and safety should be no exception. Measuring safety performance however is far from simple and made more complex because most measures are of negative occurrences - things you do not want to happen. The report outlines the results of a survey on the use of statistics by members of the Working Group. Differences in definitions make international comparisons difficult. The main benefit of statistics is to monitor progress over time in an individual works or department. However, the collection of statistics by IISI from members of fatalities and lost-time injury frequency rates based on common definitions is recommended.

Chapter 5

Special Topics

Whilst it is not possible to cover all aspects of safety in detail, the report discusses a number of important issues that need to be addressed. The topics include; training, audits, general procedures, contractors, new investment and health issues.

Safety training has always been an important part of safety in general, but the increasing emphasis on motivation and behavioural safety training to ensure competence in these areas, frequently requires further attention.

An audit is a structured evaluation of the application and efficiency of the safety policy, programmes, and systems of a company. It is also a control of compliance with either national law or company standards. Audits are widely used instruments and an important tool to improve safety.

The general procedures described include risk assessment, safe working procedures and incident investigation and reporting. The importance of establishing a culture where people can express their ideas without fear of recrimination and communicating the findings is stressed if the results of accident investigations are to have real value.

The widespread use of contractors in steel plants mandates a clear policy for handling contractor safety. The report recommends the integration of contractors into all safety programmes including the collection and monitoring of accident statistics.

Investment in a new plant is the best chance to incorporate safe working into the design. Retrofitting of safety is expensive.

Although the report focuses on accidents, a section discusses health issues including the growing problem in some countries of drug and alcohol abuse.

Annexes

A short readable annex outlines 17 pitfalls and remedies for managers seeking to implement cultural change. A second longer annex contains many ideas on practical tools and techniques, which members of the working group have used to improve safety. They cover systems and management procedures, ways to influence behaviour, training and rewards. A third annex gives a short introduction to other aspects of health safety management. The fourth annex details membership of the Working Group.

Concluding Remarks

There are still many senior managers in our industry who, while they have an honest wish to reduce the number of accidents and injuries, still believe that it is inevitable that there will always be accidents in steel - that it is a fact of life.

The members of the Working Group, made up of both line managers and senior safety managers do not share this view. There is no inherent reason why a steelworks should not have a zero accident performance. They believe it is essential for further progress that we all commit to the vision that all accidents in our industry can be avoided and that is why their report is entitled “Accident-Free Steel”.

Chapter 1

An Introduction to the Issues

The members of the Working Group, brought together to share experiences and ideas on improving steel plant safety, came from IISI member companies in North America, South America, Western Europe, Africa, Asia and Australia. The Group included both senior managers responsible for the safety specialists in their company and line managers responsible for whole businesses, steelworks or major production departments within steelworks. The companies included both the operators of integrated sites and the operators of electric arc-based facilities.

Despite this rich diversity of businesses and cultures, the group reached strong consensus on the important issues to drive improvements in safety performance. Their common experience shows that "safety performance" within a site or work group will respond to senior management leadership and commitment. Those with success in improving safety, place increasing emphasis upon the need to influence behaviour and the "culture" of the site in order to sustain the improvement process and, particularly, to release the energy of the workforce to identify safe and unsafe behaviours. The "culture" of a business, site or work group is a description of "the way things are done" in that place. Culture, in terms of the way we think (attitude) and in terms of the way we act (behaviour) are influenced by the organisation, education, social, family and humanitarian expectations, impacts and values.

'Culture' – the way things are done in the organisation

The Working Group has found that although we measure safety in very different ways around the world depending on differences in national cultures and social arrangements, the key determinants of the safety culture of a steel company are very similar. Therefore, the Working Group is confident that the ideas contained in this report will be of real value to steel plant managers all around the world as they seek ways to improve their own safety performance.

In reaching their consensus, the Working Group started from a shared experience on the nature of accidents and the state of development of safety management in steel. These are simply expressed by the concepts of (a) the iceberg of incidents (Fig. 1) and (b) the maturity curve (Fig 3.), and (c) the integration of safety into all aspects of management (Fig. 4).

The Iceberg of Incidents

The motivation to take a fresh look at safety performance in some companies has arisen from the shock of a fatality. In others, the benchmarking of performance with other industries or steelworks has revealed lags in their own performance. In a third set, the realisation that the downward trend in accidents had stagnated, has prompted fresh initiatives. Whatever the motives, the iceberg of incidents drives the initiatives towards the same goal - the elimination of all accidents through the elimination of all unsafe actions.

The outcome of an incident may be a fatal accident or a near miss - the difference is frequently a matter of luck. For every serious injury there are ten-times the number of minor accidents and hundreds of potentially unsafe actions as illustrated in Figure 1. 'The Iceberg of Incidents'. The approach to the target of zero incidents is illustrated in Figure 2.

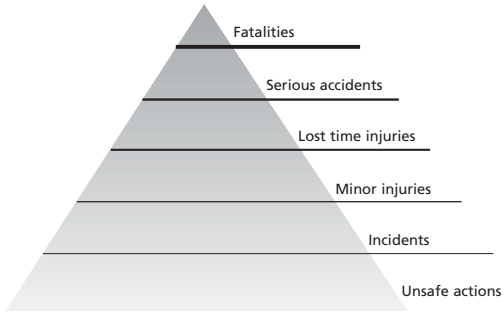


Figure 1 The iceberg of incidents

Figure 2 The target of 'zero' incidents

The Maturity Curve

The experience of members of the Working Group is that improvement in steel plant safety is a medium- to long-term aspiration and best seen as part of a development process, which has a number of identified components. The components, when added together, allow access to further improvement and a very real change in culture.

The three components are:

1. The state of the workplace environment e.g. means of access, physical plant safety, housekeeping, safe place of work.
2. The competence and training of those involved including the ability to understand, apply and respond to safe systems of work.
3. The development of motivational and behavioural influences including the use of more direct strategies to identify unsafe behaviour and attitudes and to motivate employees.

The process is continuous and long-term, requiring repeated evaluation of the status of safety on the site and judgement as to whether the site is ready to tackle initiatives and challenges that are intended to reinforce and make changes in culture.

Measures, which assist the evaluation of improving performance, are reactive (after the event) and proactive (before the event). Reactive measures include the number and frequency of accidents and incidents, the results of inspections and the number of enforcement actions etc. Proactive measures include numbers of employees trained, of safe behaviour observed, of near misses recollected and of risk assessments undertaken etc.

As the management of safety matures, the number of proactive measures will increase and, because of progress, allow less reliance upon reactive measures, which are essentially measures of the failure rate.

The development stages (the maturity curve) are illustrated in the graph (Figure 3.). The curve shows progress over time, resulting from the cumulative effect of the three elements. Whilst it is true that many steel managers address workplace environment issues before training and behaviour, the Working Group stresses that it is not necessary to do this. All three elements are complementary and additive and should be applied, measured and reviewed simultaneously. The difference is that while failings in the workplace environment may be corrected quickly, the change of individual behaviour is a much longer-term process.

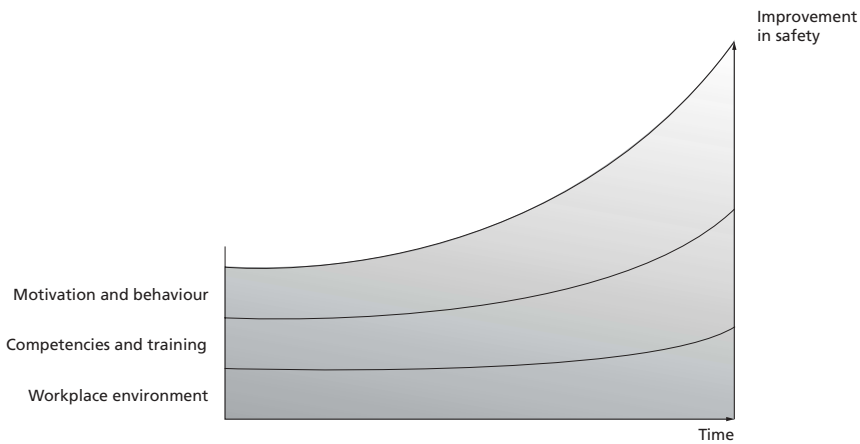


Figure 3 | The maturity curve

Chapter 2

The Safety Challenge

A Where we are Today

Anyone who has ever worked in the steel industry recognises the potential dangers inherent in the industry's working environment and to which its employees may be exposed, unless suitable and stringent precautions are observed.

As a result many companies have developed, over the years, occupational health and safety programmes that concentrated in particular on: a) the problems peculiar to the steel industry b) the steelmaking processes; and c) the nature of the materials being processed e.g.:

- Molten metal and slag and coke at high temperatures.
- Toxic and corrosive substances and gases.
- Flammable and explosive substances and gases.
- Heavy machinery.
- Work carried out at heights or in confined spaces.
- Extensive road and rail transport systems.
- Noise etc.

From these were developed safety programmes that dealt systematically with:

- Identification of potential hazards including potential new risks from new technology.
- Assessment of risk.
- Establishment of physical protection.
- Development of safe systems of work.
- Development of audit procedures.
- Provision of personal protective equipment.
- Investigation procedures.
- Standards for new plant and process modification.
- Fire fighting programmes.
- Provision of fire fighting equipment etc.
- Training of employees.

The safety performance of many individual companies and indeed the industry as a whole has improved dramatically over the past twenty years

In addition, health programmes were developed concerned with the health aspects of employment in the steel industry. This Group has not considered occupational health issues in detail as they were outside the Terms of Reference. Nevertheless many of the issues involved are closely interwoven with safety and the same sort of approach being proposed by this report may be used. For general details and guidance on occupational health and safety programmes as indicated above, reference should be made to the IISI document "Guidelines on the Management of Occupational

Health and Safety in the Steel Industry", by the Committee on Human Resources Working Group on Occupational Environment.

It is clear from the above brief summary that the industry is already and has for many years been taking a positive approach to improving safety performance in its plants. It is true to state that that during the past ten to twenty years there has been:

- A greater understanding by all employees of safety problems.
- An increasing effort by all to improve safety performance.
- A greater priority to safety than was the case in the past.

These facts reflect and take account of the higher expectation of society as a whole to the problem of safety at work.

It is now becoming apparent that for many progressive steel companies their safety performance has tended to reach a plateau

This approach should be seen against the background of the changes taking place in the industry during the period under discussion. The industry is far from static and the advances in technology and communication systems, the changes in processes, the development of new employment patterns and the increasingly stringent legal background have all had to be absorbed by the industry's approach to safety.

All the factors referred to above are reflected in the safety performance of many individual companies and indeed the industry as a whole, which has improved dramatically over the past twenty years. (See figures at end of chapter). It is now becoming apparent that for many progressive steel companies their safety performance has tended to reach a plateau.

The traditional approach outlined briefly above, whilst still an integral part of the industry's efforts, has not by itself proceeded beyond the plateau that has been achieved.

B | The Challenge for the Future

The challenge to go beyond this plateau has already been accepted by some companies that, as a result, are achieving standards once felt to be totally unrealistic for the industry even to strive for. This now requires a fundamental rethinking of the goals to be targeted when considering safety performance. Past thinking concentrated largely on improving performance with an implicit acceptance within the industry, by both management and employees, that we operated in a potentially dangerous industry where some accidents were inevitable. The new thinking challenges this attitude. It believes that accidents are not an inevitable part of employment in the steel industry and that "Accident-Free Steel" is a practicable goal for the future. However, in making this statement it is fully recognised that this must be considered as a long-term objective. It would be totally unrealistic to expect widespread achievement of this objective in the short- or medium-term, but some plants have already set this as their goal. Examples exist, within a

department or by an individual works, where this goal has already been achieved. The important initial issue is for companies and employees to adopt where necessary, a philosophical change in their thinking to accept this goal as a practicable long-term objective. In many cases but not all, this may require a fundamental change of culture in the organisation.

This report therefore represents a considered view arrived at as a result of discussions between steel industry representatives from both line and functional management. It brings together individual new initiatives being successfully developed and applied to achieve this overall objective. It recognises that different companies are at different stages, both in their approach to safety and in the development and refinement of their approach. Therefore, some parts of the report may be more relevant than others to individual companies.

Whilst not neglecting the problems specific to the steel industry, it suggests that all companies would benefit from increased consideration of a) cultural, b) organisational and c) behavioural and motivational aspects. It is all, however, based on measures put into practice within the industry to achieve standards of safety performance that the industry is seeking to attain and levels of achievement once considered unattainable.

Drawing from this experience it is clear that progress towards it will be achieved only if the programme to achieve it is set within an organisation which recognises:

- The essential role of senior management. There is a need for the total and unequivocal commitment to safety as an overriding objective by the Board of Management strongly demonstrated by the personal involvement of the Chief Executive and other senior members of the management team. Experience indicates that unless this is forthcoming then any other initiatives undertaken will have only limited success. Senior management must be seen to provide leadership, to be involved, to be interested, and not to allow other objectives to be achieved at the expense of safety.

- The importance of line managers and superiors. There is a unique contribution to be made by line managers and supervisors. They are directly involved in operations and the practicable application and enforcement of company policies and attitude is a particular responsibility for them.

- The need for the active support of all employees. In spite of the stated key role of senior management, safety goals cannot be achieved merely by imposition from above. All employees have a positive contribution to make to enable progress to be made to achieve the improvements in safety performance that are sought. Indeed many of the ideas presented in this report are aimed at ensuring maximum contribution by all to these objectives. In this respect, it is vitally important that all employees believe that theirs' is a key role appreciated by management and not reluctantly conceded by them.

Accidents are not an inevitable part of employment – Accident-Free Steel is a practicable goal

- The role of professional safety management. Any remaining ideas that safety is principally the responsibility of professional safety management should be dispelled. They are however a key source of professional advice and, as such, have a vital role to play as part of the integrated approach to safety. Organisational arrangements should reflect this.

The importance of integrating safety into all aspects of the business as part of the 'Total Quality' approach

- The importance of integrating safety into all aspects of the business as part of the 'Total Quality' approach. Safety standards and safety objectives are an essential part of ensuring business efficiency in the same way as other technical standards and business objectives. In addition, the efforts by companies to follow the new initiatives suggested by this report frequently have an influence on company efficiency far wider than improved safety in isolation. The changing perception of safety in steel over the last twenty years is illustrated in Figure 4. The report also addresses a number of specific issues that are particularly relevant to the industry now.

C| Goals for the Future

Members of the Working Group believe that the ultimate goal of any safety programme should be to eliminate all accidents. No unplanned or uncontrolled activity with the potential to cause injury should happen. An accident-free working environment may be an idealistic goal, but is certainly achievable. The following ten principles are a valuable guide:

1| All injuries and occupational diseases can be prevented.

2| Management is directly responsible for preventing injuries and illness, with each level accountable to the one above and responsible for the level below. The Chairman undertakes the role of Chief Safety Officer.

3| Each employee should assume responsibility for working safely. Professionalism in safety is as important as professionalism in production, quality and cost control.

4| Training is an essential element for safe workplaces. Total safety awareness does not come naturally - management should teach, motivate and sustain employee safety knowledge to eliminate injuries.

5| Safety audits should be conducted. Management should audit performance in the workplace.

6| All deficiencies should be corrected promptly through modifying facilities, changing procedures, and better employee training or disciplining constructively and consistently. Follow-up audits should be used to verify effectiveness.

7| It is essential to investigate all unsafe practices and incidents with injury potential, as well as injuries.

8 Safety off the job can be an important influence on job safety.

9 It is good business to prevent illnesses and injuries. They involve significant costs - direct and indirect. The highest cost is human suffering.

10 People are the most critical element in the success of a safety programme. Management responsibility should be complemented by employees' suggestions and their active involvement.

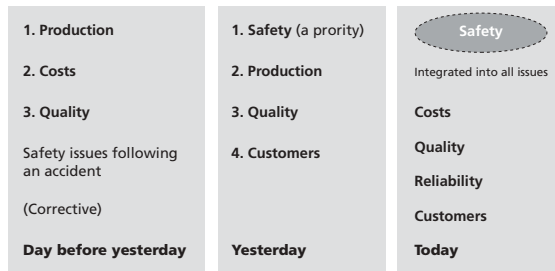


Figure 4 Changing perceptions of safety

Figure 5 Lost-time accident frequency rate
Change recorded over the past 20 years by an IISI member company

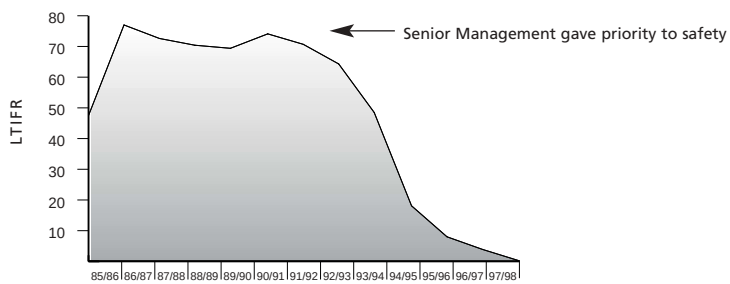


Figure 6 Lost-time accident frequency rate
Change recorded over the past 12 years at an integrated steelmaker

Chapter 3

Fundamental Principles and New Initiatives

A Cultural Change

1 General

An organisational culture develops over many years and is normally well ingrained amongst the top managers in the organisation. It is therefore extremely difficult to change. The organisational culture in general, and the existence or non-existence of a safety culture within the organisation in particular has, not surprisingly, a profound effect on the behaviour of people within the organisation. The statement "this is the way we do things around here" should reflect an uncompromising commitment from the organisation to work safely.

The statement "this is the way we do things around here" should reflect an uncompromising commitment from the organisation to work safely

Establishing and developing a safety culture within an organisation and managing safety from a behavioural perspective, is the most powerful approach to the management of safety.

In almost all organisations with a very good safety record, two important principles involved in the establishment of a safety culture have been identified. Firstly, the organisation should clearly define the role, responsibility and accountability of directors, senior managers, middle managers, and employees generally, for safety, and secondly, there should be a conviction that high standards are achievable through proper management.

In creating and maintaining a safety culture in an organisation, the following are important:

- A genuine and visible commitment from the top.
- An acceptance that improving safety performance is a long-term goal which requires sustained effort and interest.
- A policy statement of high expectation which conveys a sense of optimism.
- Employee ownership, involvement, training and communication.
- Good codes of practice and safety standards.
- The provision of adequate resources for safety.
- Safety is seen as a line management responsibility.
- Setting of challenging targets and measurement of performance against those targets.
- The thorough investigation, documentation and dissemination of information relating to all incidents or deviations, irrespective of whether injury or damage occurred.

- Compliance with standards should be ensured through auditing.
- Good safety behaviour should be accepted as a condition of employment.
- All deficiencies should be remedied promptly.
- Managers at all levels should regularly assess performance.
- Factors that influence the behaviour of managers, supervisors and employees should be properly managed.

Some of the 'Pitfalls and Remedies' associated with cultural change programmes are outlined in Annex A. page 68 of this report.

2| Policy Statements

Policy statements will reflect the culture of the company. They should be relatively short, concise documents strategically developed by the highest corporate or company authority. Statements should be clearly written to ensure full understanding by all concerned, from the boardroom to the shop floor, and supported by clearly defined organisational arrangements by which the policy is implemented. They should be reviewed regularly to ensure they are up to date concerning legal requirements and organisational changes.

Every policy statement together with supporting documents should cover all or most of the following elements or principles:

- Management's Commitment to provide a safe and healthy work environment that encompasses techniques, methods, organisation, and facilitates improvement. Management is responsible for ensuring that employees are provided with a working environment that is free of recognised hazards. The responsibility includes the obligation to seek out and eliminate hazards: develop and enforce safe work practices and educate employees in safe work methods. While all employees have a responsibility to participate in the accident prevention effort, managers have a duty to assure that no task is permitted to be undertaken unless it can be completed safely. A manager's duty in this regard cannot be delegated.
- Continuous Improvement by working together with long-term views of safety and health, environment, economy, and social integration. Benchmarking activities, utilisation of sound science, risk assessment and cost/benefit analysis to establish priorities and standards for continuous and fundamental improvement of safety and health are recommended. These principles should be included in all levels.
- Management Systems should incorporate innovative and progressive systems that lead to minimal safety and health impacts. Examples include responsible safety programmes, emergency preparedness, audit programmes, company and site steering committees and safety and health stewardship.
- Education, Training and Communication help develop and promote mutual understanding of safety and health issues for all stakeholders. Examples of these are employee involvement, empowerment, safe job procedures, managerial development training, and other forms of committees and training that relate performance characteristics and promote and elevate safety knowledge and accountability.

• Research and Workplace technologies are fundamental to facilitate improvements. Innovation and technical co-operation are vital, requiring sound engineering, design, operation and maintenance of equipment to minimise safety and health impacts. Breakthroughs in these areas can facilitate improvement in safety and health policies and procedures.
• Government Regulations must be recognised where applicable. Co-operation with government in a responsible manner fosters safety benefit and cost effective legislation that is based on sound technical evidence and true safety and health priorities meeting total community need.

Examples of Occupational Health and Safety Policies

Example 1
Company X is committed to achieving the highest performance in occupational health and safety with the aim of creating and maintaining a safe and healthy working environment throughout its businesses.Consistent with this the company will:

• Seek continuous improvement in its occupational health and safety performance taking into account evolving community expectations, management practices, scientific knowledge and technology.
• Comply with all applicable laws, regulations and standards and where adequate laws do not exist, adopt and apply standards that reflect the company's commitment to health and safety.
• Involve employees and contractors in the improvement of occupational health and safety performance.
• Train and hold individual employees accountable for their area of responsibility.
• Manage risk by implementing management systems to identify, assess, monitor and control hazards and by reviewing performance.
• Ensure that employees, contractors and visitors are informed of and understand their obligations in respect of this policy.
• Communicate openly with employees, government and the community on occupational health and safety issues; and contribute to the development of relevant occupational health and safety policy, legislation and regulations.
• Support relevant occupational health and safety research.

Signed: Managing Director and Chief Executive Officer

Example 2
It is most important in the profitable business of Company Y that we have highly motivated, skilled and capable personnel as well as good relations among the personnel. The safety of the personnel, good mental and physical health is an advantage both to the Group and the whole working community. To achieve and maintain this goal we must continuously develop our work, working methods, working environment, working climate, and measures to maintain our ability to work. Occupational safety and health are a part of the total considered in all phases of planning and implementing operations. Each unit will create a programme that encourages actions to improve safety and health. This programme should cover the needs to develop the working conditions at the work place as well as the effects of factors related to the working environment. Drawing up the programme and annual safety and health plan in co-operating with the personnel helps the personnel to commit themselves to safety

activities and creates a positive attitude towards joint goals. Occupational safety and health are always an essential part of all operations. According to the law, the employer and his representatives are responsible for operations involving occupational safety and health. Division Management is responsible for endorsing and implementing safe working practices in the divisions and their units. In central administration and other units each manager has responsibility within his own area of responsibility.

The main rule is that each person is responsible for occupational safety and health within his own area of authority. Thus every member of the personnel is responsible for their own safety as well as for the safety of other people in the working community. The safety personnel's duty is to help line organisations in carrying out tasks related to occupational safety and health.

Approved: This policy has been accepted by the Board of Directors

Example 3
At Company Z there is nothing more important than the health and safety of our employees.

We are committed to:

- Integrating health and safety practices into all aspects of our work and continuing to incorporate these practices into product and process design, manufacturing and business planning.
- Providing innovative and preventive health and safety programmes. We will continually optimise the effectiveness and integrity of our programmes through open communications, comprehensive training and education, audits and workplace assessments.
- Developing understanding among those in leadership of their responsibilities and their accountability to provide a safe and healthful workplace.
- Developing understanding among all employees of their responsibility to work safely, their accountability for individual performance and the assignment of appropriate authority to implement these responsibilities.
- Meeting or exceeding the requirements of applicable legislation and regulations for performance in health and safety matters and demonstrate leadership within our industry.

Signed: President and Chief Executive Officer

B | Organisational Arrangements

Organisational arrangements to reflect the culture of the company are vital if safety performance is to be improved. These will include

1 | The Role of Management

Why should a Manager care about safety?

It has already been stated that management collectively and individually has the primary responsibility for providing an effective management system that will ensure a safe and healthy workplace. Traditionally this was generally accepted, but the motivation for it both by companies and by individual managers has varied.

A number of negative and positive motivating factors or approaches can be identified in determining the overall approach. All may have a part to play and in practice, a combination of these factors is normally present rather than one factor in isolation.

The Moral Imperative
Employees should not suffer ill health or have accidents because of their work. Whilst there is no doubt that it can be a complete motivating factor for certain individual managers, for an organisation as a whole, other factors have an important influence on the amount of attention given to safety.

The Legal Requirement
Essentially this approach has its focus on what the law requires and no more. Managers who subscribe to this philosophy will fundamentally do only what is necessary to comply with the law. Every initiative is judged on the basis of "do we have to do this?". It implies an attitude of mind of keeping the organisation out of trouble by the enforcement of strict rules and procedures.

While compliance with the law is proper and, mostly, a necessary prerequisite for a safe working environment, much more has to be done to improve the safety performance of an organisation. The legal approach in and of itself will not achieve the desired results and, at best, will tend to lead to maintenance of the status quo. People at all levels have different perceptions of and respect for the law. Moreover, an approach which is enforced from above (under penalty of legal sanction) has little chance of succeeding in the modern world, at least to the extent required for world-class performance.

The Financial or Cost-benefit Approach
Organisations that subscribe to this approach try to find a balance between, on the one hand, the value of the resources necessary to obtain and maintain high standards of safety and, on the other hand, the value of the benefits derived therefrom. While this may sound eminently reasonable and economically sound, the problem with this approach is that it is ultimately confronted with the unanswerable question of "What is the price of a human life?"

The so-called total loss control system (TLC) is an example of a cost-benefit approach. According to TLC, all accidents and incidents represent loss to the organisation. All loss-producing events, including damage without personal injury, are budgeted in monetary terms according to a standard set of criteria. This cost is then written against a particular manager's budget as a means of motivating him to manage safety better in the future. The system has merit in that it continuously focuses the manager's attention on the management of safety, but it does little to induce shop-floor employees to improve.

The maintenance of high safety standards requires adequate financial resources, but accidents and damage to equipment also cost money. It is easy to calculate the costs of, for example, training or machine guarding, but is not so easy to calculate the costs of an accident.

Also, the costs of an accident to the organisation are generally absorbed into operating costs, and rarely take into account the costs to the victims and their families, especially those costs that cannot readily be quantified in monetary terms.

Companies making real progress in this field have turned their attention to and concentrated increasingly on behavioural aspects

The Human Factors Approach

Organisations that subscribe to the human factors approach focus on the various factors in the workplace that influence compliance with safety procedures and practices. They take account of human resource considerations and regard people as an important asset to the business that must be protected against harm. Factors taken into account include influences created by the organisation, the actual work that people do and the personal circumstances of individuals.

The problem with this approach is that it does not go far enough in actually addressing the issue of what motivates people, what effect this has on their attitudes and, ultimately, how this influences their behaviour. In addition, it is essentially still a management-driven approach, with little regard for the contributions that individual employees can make in a participative scheme. Despite its benevolent intent, it still regards employees as business assets to be used by management in order to get "compliance".

The Behavioural or Cultural Approach

All the above approaches whether used together or in isolation have failed to produce the results in safety performance that were sought. Companies making real progress in this field have turned their attention to and concentrated increasingly on behavioural aspects. This is described in some detail in the section of the report headed "Motivation and Behaviour".

Whatever approach or combination of approaches is used, sound health and safety management is the foundation upon which the company's approach to managing the business should be based. It requires knowledgeable directors, managers, engineers and employees operating within a management system that not only strives to eliminate accidents and control the risks, but also is responsive to the needs of a business.

The Difference between Management and Leadership

If management is to be successful in improving performance, there must be a balance between leadership and management activities. There is a need to define the two roles. Both play an important and necessary function in a complete management system.

To initiate and sustain improvement in any organisation it is important to think about leadership and management as different but co-existing interrelated activities. The primary differences between the two are illustrated in the following table:

Management	Leadership
Systems, processes and technology	People - context and culture
Goals, standards and measurement	Vision
Control	Commitment
Strategic planning	Strategic opportunism
Directing	Serving
Responding	Initiating and originating
Continuous improvement of what is	Innovative breakthroughs to what could be
A way of doing	A way of being

The traditional approach to improving health and safety performance has focused on the management side as opposed to the leadership side. If we are to make fundamental and sustainable improvement in this area of our business we must consider health and safety as a core activity and one that is visibly integrated into everything we do from a management and leadership perspective.

If the leaders do not visibly change – nothing will

Organisational change must begin with the leaders who are responsible for first transforming themselves. If the leaders do not visibly change, nothing will.

What are Managers required to do?

- Establish health and safety as a priority and core value of the company. Senior management must be, and seen to be, active in living this priority and value.
- Establish a world class health and safety programme. The programme must have a strong and clear internal accountability system, in which every employee has and understands his/her responsibilities and his/her relative relationship to other corporate skill needs (technical, operational and administrative).
- Set health and safety workplace standards.
- Visibly demonstrate leadership in the implementation of management's programme responsibilities.
- Integrate employee wellbeing into all activities (e.g. fitness and lifestyle issues).
- Provide the necessary resources to support the development and implementation of the programme and the business improvement plans.
- Ensure that competent people are identified to perform the required work.
- Reinforce that the proper management of health and safety contributes to improved cost, an enhanced image and will lead to improved performance of the company, particularly in reliability, quality and team development.
- Develop a consequence management system that uses negative and positive reinforcement. Negative reinforcement is the more traditional method employed in obtaining compliance, but alone will not result in sustainable nor significant improvement. Positive reinforcement applies the principle of determining what you want people to do and reinforcing them for doing that in a way that is meaningful to the employee. Applying this technique properly in combination with negative reinforcement will result in not only improvement in health and safety but will lead to a culture change. The consequences for all employees of non-compliance with safety and occupational health policy must be tangible up to and including loss of employment. Recognition of good performance is clearly desirable.
- Set improvement targets.
- Integrate health and safety into every business decision.

How should Management fulfil its Responsibilities?

- Ensure that the management system requires that all employees be held accountable for meeting their responsibilities
- The incorporation of health and safety criteria in a management bonus and promotion system is a very effective way of focusing attention on what is important.
- Behave in a manner that is, and is seen to be, consistent with the company's values and the health and safety programme. This applies to both work and home. This is a leadership issue and one of the most powerful tools that can be used to change the way people work.
- Directly participate in the shop-floor evaluation of how people perform work. Reinforce people for working safely and correct unsafe work.

Ensure that the management system requires that all employees be held accountable for meeting their responsibilities

- Communicate health and safety issues as an integrated part of the business.
- Foster participation and involvement of all employees in improving health and safety performance.
- Include health and safety performance as a key business indicator.
- Ensure the right people are in the right jobs.

2| The Role of Employees

Earlier in the report, attention was drawn to the importance of the role of all employees if progress is to be made in improving safety performance. This is particularly true as companies increasingly recognise the importance of the behavioural aspects of safety. A good employee is a safe employee.

All employees should:

- Work safely and follow rules and procedures.
- Adopt a proactive rather than a reactive role to safety issues.
- Accept responsibilities for safety - their own and their colleagues'.
- Report all unsafe situations.
- Participate fully in the development of safe working practices in their widest sense.
- Undertake the necessary training to ensure their competence.
- Apply the training fully to all their activities.
- Take part in the investigation of accidents, incidents and near misses.
- Set an example in particular for the young and for new employees.
- Support management in their efforts to improve safety performance generally.
- Contribute to the work of safety committees where appointed.

3| The Role of the Safety Organisation

It was stated in the earlier part of the report that any lingering ideas that safety within the company is primarily the responsibility of safety management should be dispelled. The report continued, however, that professional safety management has a vital and integral role to play in the company's overall approach to safety. This section of the report amplifies that thinking.

- A safety organisation is necessary for every company/plant. Every employee should be aware of that organisation and have access to it if necessary.
- The safety organisation should include experts from different disciplines within its ranks or have access to them.
- The methods by which the safety organisation operates and its relationship to the rest of the business operations should be clear.

These principles apply irrespective of the size of the plant, although the way the principles are applied will vary.

Professional safety management has a vital and integral role to play

The Safety Organisation

Safety is no different from any other activity carried out by the company. Specialisms occur in many fields - maintenance, technology, research, human resources, commercial etc., each of which has its own organisational structure within the company.

Indeed because safety enters almost every facet of company activity, the case for such an organisation is at its strongest. Whilst its major impact is traditionally felt to be during the production process, its needs also have to be taken into account in most other activities e.g. planning for new plants, maintenance of existing plants, research into new materials and processes, purchasing of new materials, sale of finished goods, disposal of waste material, in addition to contact with external bodies and regulatory authorities. Virtually no part of the business activity is outside its scope.

The Need for Experts within the Safety Organisation

Whilst the overall responsibility for safety within the industry has been clearly stated earlier in this report to be that of management generally, it would be unreasonable to expect all managers to have the depth of knowledge of safety and related subjects for them to carry that responsibility without assistance.

This is the role of the safety expert. These may be of varying specialisations including engineering, occupational hygiene, medicine, ergonomics etc. They should also know in detail the legal requirements, which will vary from country to country. Clearly the in-house expertise in all these fields will vary depending on the degree of sophistication required to address particular problems, as well as the size of the company and the company structure e.g. centralised control, profit centre approach.

It is recognised that in particular circumstances it may be necessary to use external consultants for some of this work.

The Methods of Working of the Safety Organisation

The safety organisation method of working is primarily through three routes:

- Advice - both to management and where appropriate to all employees.
- Development of policies (both general and specific) of systems and of procedures.
- Tracking of performance - specifically by organised auditing, but also by more general discussion and observation.

The safety organisation in determining its method of auditing, needs to take account also of a number of other issues e.g.:

- The legal requirements, which apply within the country concerned.
- The way in which the company is operated generally.

The links between the safety organisation and management. These should be strong and work best when based upon a genuine respect between the manager and the specialist concerned and a readiness to consult and/or advise whenever this is appropriate.

The links between the safety organisations and the shop floor employees. In many companies, Safety Committees exist which can bring together the highest levels of management with employee representatives and the safety specialists have a key role to play in such committees.

In addition, a formal structure should be drawn up relating to the organisational arrangements by which the company's safety policy is to be implemented. This should establish clearly defined responsibilities between all employees.

Types of Safety Organisations

There is a variety of safety organisation to be found in the steel industry. For example there are wide differences between companies that are single plant sites and those that are multi-site companies. Similarly, there are wide variations between integrated and other large plants that have thousands of employees and a wide variety of operations, and those plants that are restricted to one basic operation e.g. a rolling mill, and may only employ say 100 people.

Examples of Safety Organisation

Even within large integrated works, two distinct types of safety organisation predominate.

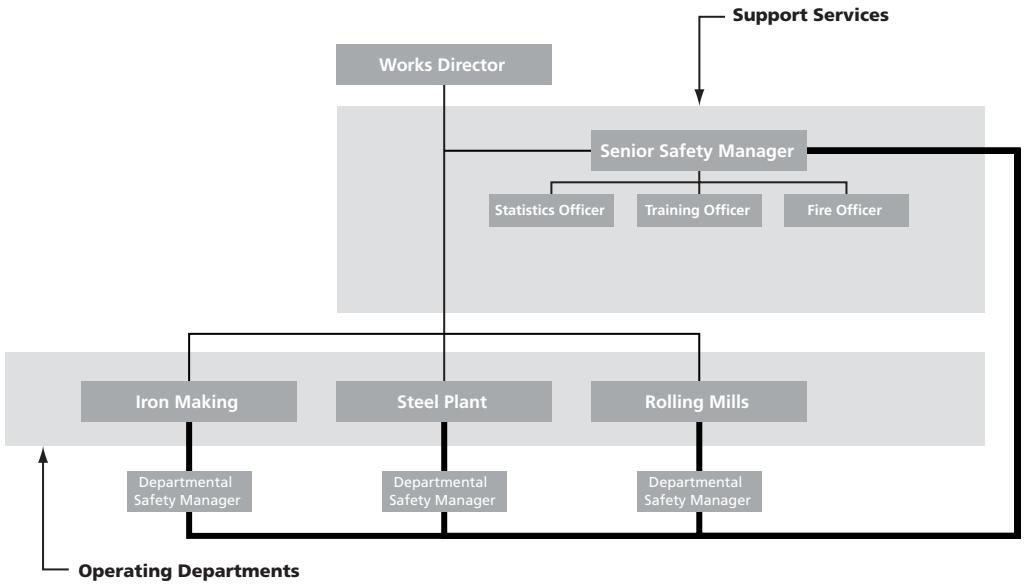
Example 1 (see opposite)
The General Manager of the plant appoints a safety manager reporting directly to him or through some other manager e.g. human resources. Depending on the size of the plant the safety manager may have a team operating in different departments but reporting to him.

Advantages:
There should be good co-ordination of safety matters throughout the plant.
Disadvantages:
Departmental managers may feel that safety is the responsibility of the General Manager and that he is not personally responsible. This can be largely overcome by the members of the safety team being located within particular departments where they are at the service of the departmental manager although developing the policy of the plant as a whole.

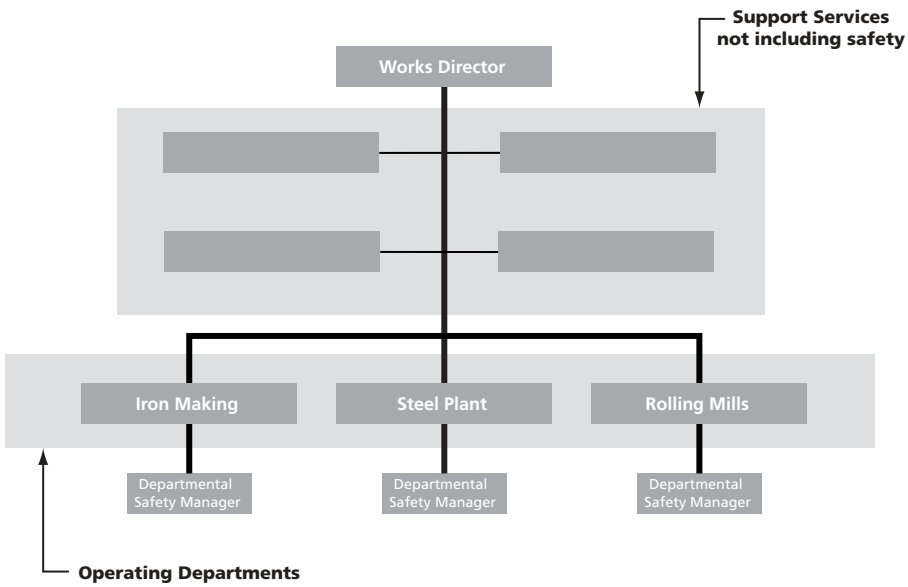
Example 2 (see opposite)
Safety managers are appointed for each department responsible directly to the departmental manager.

Advantages:
The departmental manager feels more involved because he is directly responsible for the organisation of safety and for the solutions. It should be noted that this kind of organisation does not shelter the general manager from his overriding legal responsibilities.

Disadvantages:
It is more difficult to ensure comprehensive plant-wide experience of the company policy as each departmental safety manager is responding to his own departmental manager's approach.



Example 1 | Centralised organisations at factory level



Example 2 | De-centralised organisations at factory level

Conclusion

It can be appreciated from the above that there is no single ideal safety organisation that would be suitable for all companies. Indeed a number of companies have an organisation that is a combined version of Examples 1. and 2. and which works successfully. The organisation adopted depends very much on the nature of the company and on the company/plant organisational structure.

Consideration of the factors referred to above should however help to develop an organisation suitable for an individual company.

4| The Role of Trade Union & Employee Representatives

Where unions are present in the work force, it is important to ensure that they are given a positive role in the safety programme.

In general, the primary responsibility for safety rests with the management of the company. However, in most jurisdictions the prevailing situation, legislated or otherwise, is for development of a direct relationship and a shared involvement of the company management and its employees in safety responsibilities. Where they are active, unions can play a significant role in maintaining and improving safety standards.

There are as many variations in the role of unions in safety as there are individual companies and unions. In some jurisdictions the role of unions is specified within applicable legislation, in others it is expressed through the union taking on the role of the representative of employees in safety matters, in others unions are not involved in safety at all and some combination of the above may apply in other areas.

Positive Contributions

Where there are shared objectives at the local level and a clear and effective safety programme in place, the role of unions in safety can be expected to be a supportive one.

Unions can provide effective positive reinforcement of company safety programmes: they can provide effective training programmes, have on-the-floor practitioners as safety representatives, be "ambassadors for safety", participate in audits, accident investigations, risk analysis and participate as members of safety committees. Positive pressure from unions can offset employees' perception of managers' conflicts with non-safety priorities and generally, they have effective channels to communicate with employees.

On a broader level, unions can be effective lobbyists with governments where there are companies who are not living up to legislated health and safety obligations or where such roles and regulations are not effective in the work place. In addition, unions may assist to keep health and safety issues at the forefront of management attention both on an ongoing basis and periodically in the process of contract negotiation.

As with all effective working relationships, there needs to be a high degree of trust between the union, employees and management for the involvement of unions in safety issues to have a positive impact. This requires that the interests of management and the union be aligned and that common objectives are agreed to. Safety can provide a valuable common cause for employer and employee representatives.

Potential Conflicts

It is not unusual or unexpected that there will be differences in opinion from time to time between management and unions about safety issues. However, it should be possible to work through such differences where there are agreed common goals to be achieved in safety matters.

If present, some union philosophies (such as refusal to believe that anyone other than management has responsibility for workplace safety) can lead to such conflicts and if taken to an extreme can result in a loss of credibility and a dysfunctional relationship. Similarly, in plants where Trade Unions have traditionally been seen as the driving force in safety, the full assumption of management's responsibility in this field can, unless handled with care, lead to potential conflict.

On a political level, safety issues can be an area of conflict between management and unions. Typically this situation arises where the interests of a union organisation address broader issues e.g. working hours, use of contract labour in a given workplace and a union is being opportunistic, using linkage with safety to achieve gains in non-safety areas. That this can have a negative impact on real safety issues is inevitable. Before a meaningful role for unions in the management of safety can be developed in this environment it is necessary for the management and the union to come to a common and open understanding of common objectives and a programme to address workplace safety on common ground. This can often be achieved at a local plant level before it can be realised in a broader union context.

Conclusion

Good safety programmes and safety results are not dependent on union representation in a company. However, unions where present can provide a positive impact on the development and implementation of effective safety programmes where common objectives related to safety in the workplace can be developed.

C| Motivation and Behaviour

1| Introduction

The various traditional approaches or motivating factors in managing safety were set out in the section of the report dealing with the Role of Management. This concluded that companies, which had achieved a major step forward in recent years, had placed increasing emphasis on behavioural aspects and how to motivate all employees both as individuals and as groups.

Traditionally, approaches to the management of safety in the steel industry have concentrated on a) the provision and maintenance of a safe place of work and, b) the establishment of management systems where the emphasis is on the enforcement of rules, procedures and standards, all designed to create a safe working environment.

Research indicates that more than 85% of injuries at work involve some unsafe behaviour of people

Research indicates that more than 85% of injuries at work involve some unsafe behaviour of people. Unsafe conditions in isolation account for less than 15% of those injuries. It is therefore somewhat surprising that, generally, very little attention was paid in the past to the role played by the behaviour of people at work in the accident causation process. Their motivation, needs, attitudes to safety, individual capabilities, and many other factors, all combine to direct the behaviour of managers and employees. Behaviour, in the ordinary course of events of working in a steel plant, clearly plays a primary role in determining whether people will be injured at work or not.

2| A Behavioural Model for Safety

The issue of a behavioural model for safety is not different or distinct from behaviour in general. Behaviour is a function of activators and consequences. An activator is something that precedes the behaviour and influences the behaviour beforehand. A consequence is something that follows the behaviour and discourages or reinforces repetition of the behaviour. The model shown in figure 7 on the next page is divided into the categories of activators and consequences.

By designing and controlling effective workplace activators and consequences we can increase key safety behaviour and reduce unsafe behaviour. Effectively managing behaviour by a combination of well planned activators and consequences will result in fewer accidents and injuries. Activators, behaviour and consequences and their interrelationship are explained in the following sections and graphically in Fig 7.

i) Activators

General *

Activators are the inputs that influence our decisions and enable resulting behaviour. This means that before we begin implementing interventions designed to address behavioural issues, we must first scrutinise management systems and practices that affect the environment, processes and systems and employee knowledge and skills which direct behaviour. It cannot be over-emphasised that the effective implementation of the management systems described in the preceding sections is a prerequisite to the implementation of behavioural interventions. It is also important to point out the most powerful activator - input that influences the resulting behaviour in most workplace situations is the expectation and behaviour of management.

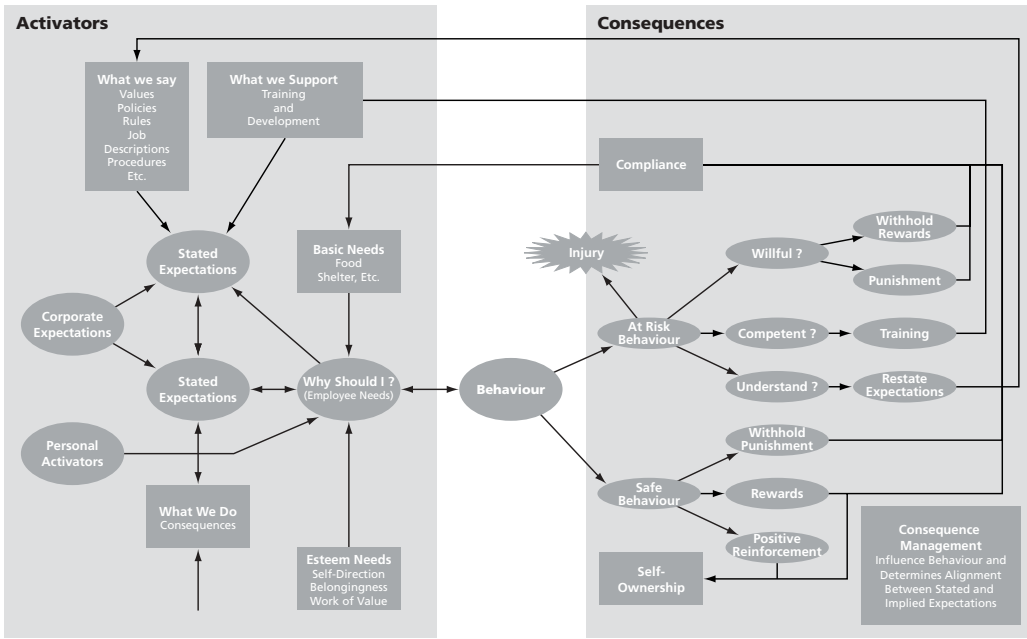


Figure 7 Activators and consequences

Corporate Expectations *

The first step is setting expectations from the company's point of view. This is essentially a statement of the company's needs. This can take the form of both "stated expectations" and "implied expectations". See 3A2- Policy

Stated expectations are related to "what we say" and "what we support". What we say can take a variety of forms and includes such things as values, policies, rules, job descriptions, procedures, etc. Many of our safety programme tools such as manuals, procedures and job safe practices would fall into this category. What we support is reflected in the training and development programmes we put in place to develop the competencies to execute the desired behaviour. In reviewing "what we say", it is important to examine our motives. Does our concern come from an internal moral obligation founded in our values, or are our actions more influenced by regulatory pressures and other external factors? If we are responding primarily to outside forces then it is more likely that we will be working with a compliance view. If health and safety is a fundamental belief or value then we have a better chance of migrating to a self-ownership model. This will be discussed in more detail later.

We should say what we do and do what we say

Implied expectations arise from what we do and are the result of how we manage the consequences of both desired and undesired behaviour. In theory, there should be no difference between stated and implied expectations, i.e. we should say what we do and do what we say. In practice however, this is not always the case. If the vast majority of accidents involve unsafe

behaviours, why do unsafe behaviours go unchecked and why do people engage in them in the first place? This will be dealt with in detail later but it will be dealt with briefly here. Most unsafe behaviours do not always result in injury. The Dupont * model suggests that for every injury there are hundreds of unsafe behaviours. Therefore the negative consequence of a possible fatal injury is uncertain and is not immediate. For example, not wearing the required personal protective equipment will often not result in an injury. On the other hand, if the reason I do not wear the equipment is because it is hot and heavy then every time I do not wear it I will be more comfortable. This is a positive consequence that is certain and immediate versus the previous negative consequence (injury) that was uncertain and in the future. It is argued that positive, immediate, certain consequences influence behaviour significantly more than negative, future, uncertain consequences. This will be elaborated later under 'Consequence Management'.

*Dupont model refers to the approach to the management of safety championed by the US chemical company Dupont, which is a recognised world leader in accident prevention and is used by many steel companies.

Personal Activators and Employees' Needs

In addition to the activators referred to arising from corporate expectations there are also the personal activators which will influence a person's behaviour that go beyond those used by the company and refer to the employees' needs. Each person brings his personal beliefs and values to the job. These can be influenced by a person's family life but can also be influenced by broader environmental factors such as local area politics, economy, values and culture. While these are beyond the scope of this study, they need to be considered particularly for companies that are operating globally. They are also important for each member company in IISI when evaluating the various tools and methods described by other member companies in this report. There may be some ideas that are more readily usable than others, given the particular values and cultures of specific companies.

In viewing the company's needs, the employee will ask the internal question "Why should I?". He is really asking, "How are my needs addressed by satisfying the company's needs?". The employee has two types of needs: basic needs and esteem needs.

Basic Needs

Basic needs relate to food, shelter etc. and reflect the need to remain employed. An employee will respond to a consequence that threatens his/her employment and behave compliantly; i.e. he/she is prepared to follow someone else's rules with the minimum requirement to protect his/her basic needs.

Esteem Needs

Esteem needs relate more to a person's sense of self-worth. This could be described in terms of the three fundamental needs of self-direction, belonging and work of value.

- Self-direction relates to the opportunity to have input into how the work is done. This view has also been stated by many others i.e. "If you want to know the best way to do a job, ask the person doing the job". From the perspective of safety, this could involve

such things as employees contributing to the development of work procedures. In this situation, there needs to be clarity on what are the boundary conditions that are not the prerogative of the employee and what is in the realm of the employee to determine. As an employee-team demonstrates a growing sense of self-accountability, the boundary conditions may be negotiable.

- Belonging relates to a feeling of being part of a team. This involves feeling that you are an important part of the team and there is some respect and appreciation for what you bring to the team. In general, people do not like to be isolated.
- Work of value relates to a feeling that the work being performed is important to the overall result. "Make work projects" create a demotivated environment and quickly push people into a compliance approach to the work, which is detached and uninvolved. Having work of value is necessary to restore a sense of craftsmanship and ownership.

Satisfying the esteem needs of employees is essential to move from compliance behaviour to self-ownership. With respect to safety, there are too many opportunities for unsafe behaviour to deal with them through compliance alone. To achieve discretionary effort, there has to be a sense of self-ownership and self-accountability at the shop-floor level.

ii) Behaviour

Behaviour then is a result of an individual satisfying his own needs. To the extent that this aligns with company needs, then company needs will be addressed as well. To the extent that company needs are not met and this threatens the individual's needs (i.e., do this or you are fired), then the behaviour will be changed to comply with the company's needs. The employee's view of the company's expectations is primarily driven by implied expectations, i.e. by what we do rather than by what we say. For example, if we say that eye protection must be worn, but nothing significant happens when it is not worn, then the implied expectation is that we are not serious about eye protection. Consequently, the employee does not see any threat to his own needs being satisfied if he does not wear the eye protection. Although he is aware of the stated expectation, he will respond to the implied expectation. This again underlines the importance of consequence management in aligning stated and implied expectations.

iii) Consequences

General *
Consequences are what happen because of behaviour. Consequences ultimately motivate our behaviours and either reinforce or discourage repetitive behaviour. Consequences usually compete with one another. When consequences compete, the stronger consequences - those that have the most power at the time - are the ones that will motivate our behaviour. This is a very important principle when it comes to safety because there are natural rewards for our behaviour.

A natural reward is what happens immediately and automatically, just because you have done the behaviour. When you change a burnt-out light bulb, you get an immediate natural reward - more light. The problem in safety is that there are also natural rewards for unsafe behaviours. We may

take shortcuts or not use proper protective equipment because it makes a job faster, easier or more convenient to perform.

The problem is made worse because natural negative consequences for unsafe behaviour – personal injury and property damage are not certain. If we were injured every time we committed an unsafe behaviour, i.e. running up a flight of stairs, we would surely stop that unsafe behaviour. However, we have learned through our own experiences that we can run up the stairs hundreds of times without tripping or getting injured. Compared to the natural reward of getting up the stairs faster, the possibility of injury is a very weak motivator.

Consequence Intervention

Positive, immediate, certain consequences influence behaviour significantly more than negative, future, uncertain consequences. The natural positive consequences for at-risk behaviour are soon and certain. The natural negative consequences for at-risk behaviour are usually delayed and uncertain. To shift this imbalance we need to make consequences of safe behaviours more powerful. We can do this by adding extra consequences to the situation. There are two ways to add extra consequences to motivate behaviour. We can increase the negative consequences of at-risk behaviour by imposing penalties or we can increase the positive consequence of safe behaviour by adding rewards.

...we need to make consequences of safe behaviours more powerful

- **Negative Consequences**

Safety programmes based on negative consequences rely on enforcement. Rules and policies are established and disciplinary procedures, including termination of employment are the negative consequences. These added penalties make negative consequences of at-risk behaviour more powerful than the natural rewards of comfort, convenience and expediency.

There is a problem with using enforcement actions to motivate safe behaviour. Enforcement is a failure-oriented approach. People receive consequences for their behaviour only when they fail to do something. Their whole attitude toward safety becomes at best compliant and at worst negative. That is the opposite of what we need. We need people with positive attitudes who go beyond the call of duty for safety, who will do the right thing even when no one is around to monitor them and who are actively involved in the safety process.

Rules, policies and enforcement actions set norms and expectations, so it would be unwise to take them away. However, adding positive consequences to the situation can offset their potential negative effects.

Negative consequences build compliance whereas positive consequences foster achievement. People work better to achieve success rather than to avoid failure. In fact, using positive consequences is the only way to get continuous improvement.

- **Positive Consequences**

The most convenient, inexpensive, readily available and often the most powerful positive consequence is positive reinforcement or recognition. Positive reinforcement of safe behaviours

works best if it is part of the normal work environment and is part of the values and principles of the company. Introducing positive reinforcement in safety while other aspects of performance management are operated in a compliance mode is likely to fail because it will be perceived as insincere and disingenuous. However, if you have to start somewhere, safety surely is a good management system with which to begin.

Praising people for safe behaviour is probably the best thing that can be done on a daily basis to prevent injuries. Positive reinforcement helps to build self-esteem. We need people feeling good about themselves, when they do what is right for safety. They are then more likely to repeat the safe behaviours.

Behavioural research has revealed strategies to maximise the impact of recognition. Guidelines for quality recognition are listed below:

- Make it timely - as soon as the behaviour or condition is observed.
- Give it on an individual basis.
- Be sincere, genuine.
- Describe the behaviour or condition that was observed and why it should be recognised and supported.
- Explain the importance of the behaviour.
- Connect specific behaviour with general higher level praise by adding a universal quality-like leadership, integrity, or actively caring to the recognition statement.
- Give personal praise and thanks.
- Pay attention to the person's comments, suggestions or reactions.
- Reaffirm approval and offer encouragement, acknowledge recognition of a job well done and reinforcement to keep up the good work.
- Use material rewards for symbolic value only.

Some additional points to remember:

- One positive reinforcement does not result in the behaviour being at habit strength.
- Group recognition should be followed by individual recognition.
- Teach people to receive recognition well.
- A good response to praise will encourage others to give praise.
- Provide opportunities to increase the application of positive reinforcement to motivate safe behaviours by implementing a systematic observation process, which provides for involvement by shop-floor employees.

iv) Concluding Comments

Most steel companies are committed to continually improving workplace safety performance. Understanding the principles of behavioural safety and implementing well-planned interventions is an excellent way to accomplish this. To start such a process, however, companies must have a sound safety management system and management teams that understand the importance of their role in making the process work. Behaviour-based safety requires vigorous, ongoing analysis and adjustment of activators, behaviours and consequences of everyone.

3| Key Factors to Manage the Change

If the changes implicit in this report are to be made it is necessary to develop a strategy as a means of getting from where an organisation is to where it wants to be. This section sets out some of the key factors in making that change.

Before implementing any of the following however, there needs to exist within the organisation:

- Compliance with legislation.
- Effective and efficient systems, procedures and standards for the day to day management of safety.

i) Strategy

In the realisation that safety is good business, the management of safety should be a strategic issue in every member organisation.

The strategy should spell out the beliefs of the organisation, stating the values and principles to which it subscribes. An example of such a set of principles and values is as follows:

- All injuries and damage can be prevented.
- Preventing injuries and damage makes good business sense.
- Everybody occupying a managerial or supervisory position is personally responsible for the safety of those working under him or her.
- Everybody in the organisation carries personal responsibility for his or her own and his or her fellow-workers' safety.
- Training is an essential element in ensuring the safety of employees
- Safety audits are carried out regularly and meaningfully, with the emphasis on the modification of attitudes.
- Every shortcoming in the field of safety is rectified immediately and permanently.
- All injuries and damage are investigated thoroughly and participatively, not only to determine the direct causes but also to uncover underlying causes.
- People are the most important elements in the safety programme.
- Following best practices elsewhere in the world, supervisors spend a significant part of their time on matters directly related to the protection of their subordinates' safety.
- Deviations from these principles and values and from required conduct by whomever are unacceptable.

Everybody occupying a managerial or supervisory position is personally responsible for the safety of those working under him or her

These should be translated into a vision of where the organisation wants to go with its safety programme and state its policy in this regard. This in turn will lead to a mission statement with specific short- and long-term objectives.

ii) Communication

The strategy needs to be driven by a comprehensive communication plan that focuses on the medium- to longer-term and can be illustrated graphically as shown in figure 8.

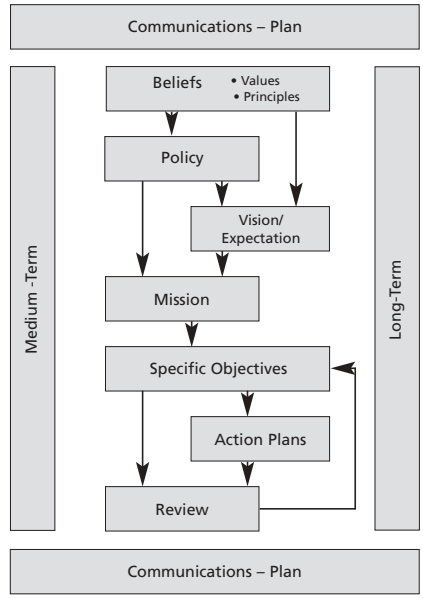


Figure 8 A communications plan

This plan must clearly identify primary, secondary and tertiary audiences and must include all stakeholders such as employees, trade unions, all levels of management, shareholders, communities, families of employees, institutes etc.

A formal communications plan, which addresses every issue of the strategy, is essential. This plan should be well designed, properly thought through, creative and innovative. It should contain at least the following:

- Background to the plan.
- Goals and objectives of the plan.
- The communication approach.
- A central theme.
- Target audiences, including primary, secondary and tertiary audiences.
- The elements of the plan.
- An operational level media plan.
- Development and dissemination of the programme.
- A detailed action plan, i.e. who should do what by when.

The deliverables of the plan and its milestones should be carefully monitored and managed. Setbacks will occur, but re-planning must be done and the new plan then again driven diligently.

iii) Participation

Real and significant participation in the management and practice of safety by employees at all levels needs to be established; direction, leadership and the setting of goals by managers must be reinforced, while all employees at all levels of the hierarchy of the organisation must participate fully in carrying out the process of change. Real responsibility must be devolved. Health and safety representatives and joint health and safety committees contribute to a large extent to ensure meaningful participation by shop-floor employees, but much more is needed to ensure commitment to the cause: by being part of the problem-solving machinery within the organisation, grappling with the issues, debating, thinking, finding solutions and implementing them, creates a sense of ownership with all who participate.

iv) Competence

Similarly, competence gives people self-confidence, pride and a sense of worth. It involves far more than the mere attendance of one training course after another. It should be a structured, planned programme of development throughout the organisation.

Where training programmes inevitably form part of such a development plan, the focus of such training should be shifted from the purely iterative to programmes that also cover the reasons for certain practices; modules on safety must be included and the development and empowerment of employees, especially at the lowest level, must receive attention.

v) Ownership (Co-Responsibility)

The acceptance by all employees of responsibility for their own and their colleagues' safety at work. In many companies, this is made a condition of employment, with gross violations of safety procedures subject to disciplinary action.

Again, as with the previous performance drivers, this is an issue that has to be carefully planned and launched through the organisation; specific objectives must be identified and removed.

4| Practical Tools and Techniques

Various tools and techniques have been established to complement a behavioural approach to safety. A large number of such methods are available and are being used by the member companies of IISI to give practical effect to the initiatives described in this report.

Not all are appropriate to every operation; many may need to be modified to suit local or company circumstances but they represent a useful list of ideas.

The various tools and methods are explained in more detail in Annex B. The explanations include a short description of each method, its purpose and the criteria used.

Chapter 4

Statistics

A Introduction

Statistics are used by the industry to measure almost all aspects of performance - whether it be 'output', 'delivery', 'plant reliability', 'sales' etc. It is not surprising therefore, that companies should seek to measure safety performance in a similar way. It is the view of members that it should be able to do so. Measuring safety performance is however far from simple, particularly when comparisons are attempted and made even more complex because measurement is normally of negative occurrences i.e. things you do not want to happen.

B Accident/Injury Statistics – Major Performance Indicators

All companies that contributed to this report collect statistics on accidents, injuries and incidents. Although concepts on which these varying statistics are collected are based on the following basic definitions, there are variations within these definitions as indicated later.

Definitions

Industrial Accident
An unintended event due to an unsafe act or unsafe condition or a combination of both, which may or may not result in property damage, personal injury, work interruption, product damage or a combination of these.

Industrial Injury
An injury arising from an industrial accident that occurs whilst a person is working for the Company or is on the Company's premises for purposes in connection with or arising out of and in the course of his work, but which may not necessarily result in absence from work.

Lost-Time Injury
An industrial injury causing loss of time from the job on which the injured person is normally employed beyond the day or shift on which the injury occurred. In addition, cases where loss of time does not immediately follow the injury, but where there is a direct relation between absence and injury, are generally regarded as lost-time injuries.

Fatal Injury
Industrial accident resulting in a fatal injury to either the Company's employees, contractors undertaking work for the Company or other persons where these result from an industrial accident arising from Company's activities.

Severity Rate
1000 x [Total number of days lost]÷[Total number of hours worked].

Frequency Rate
Data on injuries (lost-time and/or the total number) is often presented in terms of frequencies by relating the absolute numbers to the total number of hours worked. A base of 1.000.000 hours is most common:

Lost-time injury frequency = 1.000.000 x [lost time injury number]÷[total number of hours worked].

(Note: Values for severity rates are correlated to frequency on lost-time injury frequency (LTIF). E.g. if the average number of lost days for all lost-time injuries remains constant for a certain period then the severity rate is directly proportional to the LTIF. So, in evaluating severity rates one should always consider the change in LTIF before conclusions are drawn.)

C| Working Group Survey

Initial discussions within the group however identified differences in the basic definitions and in their application, which were not necessarily appreciated by all concerned. It was agreed therefore to carry out a survey of statistical data collected by member companies. An overview of data items and a summary of submissions including miscellaneous items are presented in the following table.

Summary of Survey Data		
Fatal Accidents	1|	Everyone collects
	2|	Approximately 50% includes business travel
	3|	Minority includes home to office travel
	4|	Contractor inclusion varies - very often separate
	5|	Small minority has historically only included blue collar workers
Major Injuries	6|	Concept used by majority
	7|	Substantial minority - do not use or unclear
	8|	Where used definitions vary widely e.g. Length of absence • 45/90 days • hospitalisation • medical definition e.g., by own medical staff, by legislation
Lost-Time Injuries	1|	Almost everyone collects
	2|	Some split into categories of severity - minor, moderate, severe
	3|	Definitions vary widely • from and including day of injury • > 1 shift or 8 hours absence • lost-time after shift on which accident occurs • > 1 day absence • > 3 days absence

Frequency Rates	1l	Almost everyone uses
	2l	Varying definitions • base 1.000.000, 200.000, 100.000 hours worked; number of employees employed) • LTI or LTI + all other injuries (note: LTI definition itself varies - see previous item)
	3l	Inclusion of fatalities varies: • some case fatalities excluded altogether • in other cases fatalities included
Severity Rate	1l	Majority uses concept; significant minority does not
	2l	Ratio between days lost (sometimes hours lost) and hours worked multiplied by various factors (e.g. 1.000, 200.000 or 1.000.000)
	3l	Some exclude fatal accidents altogether
	4l	Some include fatal accidents but on a differing basis (e.g. 7500 days, 220 days)
Near Misses	1l	No readily identified definitions of 'near miss' quoted
	2l	Near miss investigation and reporting procedures exist in some companies
Accident Costs	1l	Some regard this as relatively unimportant and express reluctance to get involved
	2l	Others regard this as an extremely important aspect and very valuable in influencing management
Contractor Accidents	1l	Most companies are aware of contractor fatalities
	2l	Some investigate all fatal and some major incidents
	3l	Most recording of contractor accidents are kept separate in statistics
	4l	Some companies do not keep any records at present
	5l	Many companies are developing a more comprehensive control system for contractor activities including improved recording of statistics
Zero Accident Targets	1l	Not yet widespread but examples do exist
	2l	Establishment of specific objectives and targets is increasingly being adopted with zero seen as the ultimate target
	3l	Examples of planning towards these objectives exist with benchmarks established and specific activity areas identified
Miscellaneous Issues	1l	Other performance indicators exist that are normally unique to the company or the individual works or department e.g. all industrial injuries.
	2l	Importance of audits as performance indicators
	3l	Reliable data particularly on fatal accidents exist in many companies over a lengthy period
	4l	Use of Dupont systems spreading
	5l	Widespread dissemination of information across the whole field of safety performance indicators exist from senior management to shop-floor

Some of the differences are of minor importance to the value of the reported numbers, but others have a strong effect. The background for these differences are found amongst others in:

The collection of company statistics on a traditional basis should not be disturbed

- Constraints from local legislation
- Cultural factors, social systems etc.

The latter in particular may greatly affect the actual value of the data since these determine whether an incident will end up in the statistics at all.

Some Examples of the Effects of Differences in Definitions

To understand the difficulties in benchmarking between companies it is useful to consider in more detail examples of the effects of differences in definitions, because without knowledge and understanding companies might be led to incorrect conclusions.

- **Location of the incident:** In all companies, individual accidents contribute to the statistics if the incident happens at the company's premises. However, in some companies/countries incidents during home to office travel and vice versa are included. Similarly, in some companies/countries incidents during business travel generally are also included. The effect of these variations may be relatively minor as far as lost-time injuries are concerned, but can be quite significant for fatal accident statistics.

- **Threshold values:** In all companies, a threshold value for the amount of lost time involved is used. In this respect, companies differ considerably. Common values are:

  - One day or shift or a corresponding number of hours.
  - Three days.

There may also be a distinction between calendar days or workdays. The illustration of the effect of this distinction is shown below.

Two steel companies (A and B) reported an almost identical lost-time frequency value for lost-time injuries (LTIF). Company A uses a three-day threshold value and company B a one-day threshold. Analysis based on the injury-registers of both companies revealed that introducing a one-day threshold for company A would double the company's LTIF. Otherwise, if company B would adopt the three-day threshold it would decrease the LTIF for B by only a little bit more than 5%.

Furthermore, it was found that departmental management in company A did not worry too much about injuries with lost time equal or below three days, since these cases did not end up in the crucial statistics, as was the case in company B. So the threshold value proved to be an important item which affected priority-setting by management.

- **Cultural factors:** These will hardly affect fatalities and major injuries. However, in the statistics of lost-time injuries they will become important. Amongst these factors one finds:

    - Elements of social security systems; e.g. will the employee be paid or receive an allowance during absence due to an accident?
    - General opinions within medical profession in the treatment of certain injuries.
    - effects of target-setting on, for example, lost-time injuries by the company might focus management's attention on threshold values for lost-time injuries.
    - The existence of restricted work programmes in which, after an injury, a person is temporarily disabled for his regular task, but not for other tasks.

Whilst these factors may have little effect on statistics of fatalities and major injures in the statistics of lost-time injuries in general, they can become quite important.

It is clear from the above that benchmarking is complicated and that in the exchange of statistics between companies and sometimes between plants, the following items should be considered before any valid conclusions are drawn from the data.

- Definitions used - formulation and underlying concepts.
- Practical application and interpretation of definitions: e.g. how do these definitions work out in day-to-day practice?
- Local circumstances and effects, such as legislation, national and/or corporate culture, etc.

D | Other Performance Indicators for Safety

In the situation where the safety performance of an organisation is poor, measuring safety is a rather straightforward exercise by counting injuries. Once an organisation has made considerable progress in improving safety, counting injuries will not provide enough information to satisfy the demand of the organisation.

This phenomenon will become manifest quite early on a departmental scale within an organisation. As soon as injury numbers have decreased i.e., counting ones and zeroes on a monthly basis, a department will start searching actively for other ways to assess its safety level and develop methods in identifying precursors of potential hazardous situations.

A very brief outline in the development of safety measurement within organisations is presented in the table overleaf.

Categories A1 to A3 will be quite general in organisations that have made the first steps in improving their performance and will remain very important for a very long time for the total organisation (large scale). In fact, these categories indicate what it is all about. Categories A6 and A7 are just different ways to present the information. At a small scale within an organisation categories like A4, A5, and quite often at the same time B and C, will be more prominent after a certain period in which improvements have been made.

	Categories	Remarks
A1	**Fatalities**	Defined in previous section.
A2	**Major Injuries**	No common definition available. Generally, company specific definition based on seriousness of injury (e.g. hospitalisation, number of workdays lost, (partial or remaining disability)
A3	**Lost-Time Injuries**	Lost Workday Cases. See remarks on definitions used in previous section.
A4	**Medical Treatment Cases**	Injury types in which qualified medical treatment is necessary e.g. medical practitioner or qualified nurse.
A5	**Other Injuries**	All injury types not mentioned above. Generally, these minor injuries need simple treatment by a medical professional or with the help of a first aid kit. One should be aware of the fact that in an organisation with increasing safety awareness the number of these injury types might grow considerably. Workers become aware of the importance of reporting these small injuries to start further actions for improving the safety level. Therefore the increasing number of these types of injuries does not necessarily indicate a backslide in safety performance, but reflects a decreasing lower level of injury types that end up in the formal registration. Target setting on injuries that include this type is generally not a sensible thing to do since it might have opposite effects.
A6	**Frequencies**	All countable events (injuries) may be transformed in frequencies, generally based on the number of hours worked.
A7	**Severity Rate**	See definition and remarks in previous section.
B	**Near Misses**	Near Misses are described in more detail in the chapter on General Procedures. Although not very common some organisations use the number (and types) of near misses recorded within a certain period of time as a basis for indicators for safety performance. An advanced near miss management system for reporting, evaluation, classification and follow-up in terms of corrective actions is a prerequisite. The translation from numbers and types of near misses into performance indicators is highly dependent on the way safety issues are handled within an organisation and might even differ for departments within an organisation.
C	**Audits and Inspections**	Number and types of deviations in audits and inspection can be used in defining performance indicators for safety. As with near misses, well-developed systems for audits and inspections are a prerequisite and determine the actual definitions used within the organisation.

E| IISI Initiatives

In spite of the problems identified above, the collection and use of statistics of safety performance are an essential tool in the development of an improved safety performance. Indeed, where the definitions have remained constant, the problems identified have little relevance to assessing the safety performance of an individual plant. It is therefore the Working Group's view that the collection of company statistics on a traditional basis should not be disturbed now.

...member companies should undertake, through IISI, a very limited exchange of safety statistics having first agreed common definitions

However, inter-plant/company comparisons are desirable on safety statistics as on any other steel performance data as a means of identifying problems and developing improvements. It is proposed therefore that member companies should undertake, through IISI, a very limited exchange of safety statistics having first agreed common definitions. The categories of safety statistics for which this is proposed are fatal accidents and lost-time injures. One of the first tasks of the recently established Working Group on Safety and Occupational Health should be to organise this exchange, having agreed the definitions to be used and taking account of international developments currently being considered for industry generally by, for example, the International Labour Organization.

It is the Working Group's view that this could provide valuable material for the industry's efforts to improve safety performance.

Chapter 5

Special Topics

This Chapter deals with a number of specific topics, which are either of special significance in the steel industry at the present time or are of particular relevance to the main part of the report. However, while none are dealt with superficially, it has not been possible, in the time available, for them to be researched exhaustively. It is hoped that members will, however, find these of value and perhaps stimulate further discussion within IISI.

A | Safety Training and Competence

Introduction

Generally, training has always been an important activity for the industry. If the behavioural and motivational issues raised in this report are to be followed up and implemented, they will require levels of competence amongst employees to be further enhanced. Training will be a key issue and one of the ways in which competence and personal motivation can be taken forward

Training will be a key issue and one of the ways in which competence and personal motivation can be taken forward

In the report, reference is made to the need for some companies to change their culture. If this is to take place it will need to spread through all activities - and training has a unique role to develop in this area also. The use of safety issues for example in training areas other than pure safety is an opportunity to indicate to managers and other employees the central role of safety to the company's culture.

Training Demands

Training gives employees the knowledge of how to work in a safe and healthy way. To keep up standards, training programmes have to be checked and reviewed on a periodical basis.

The demand for safety training is generally determined principally by the following events:

- New employees joining the company/department.
- Employees moving to new workplaces.
- New systems or technologies being introduced.
- Legislation requirements.
- Refresher-training.
- Evaluation of audits and of the causes of accidents (unsafe acts).
- Assessment of risk for individual jobs.

Responsibilities

The responsibility of determining and reviewing the training should be in the hands of line management, in co-operation with the safety experts. The most common period for a review is yearly. Managers and supervisors should be responsible in ensuring the necessary training is given. They should be supported by safety experts and human resources.

A very useful tool seems to be a 'training matrix' or a 'competence profile', which shows a list of jobs related to skills required for that position. The training programme should be set up to match the matrix or the profile.

Key questions, which should be responded to on a training programme are:

- What is required?
- Why is it done?
- Who is responsible?
- How often?
- How is it to be done?

Training procedures have to be formulated in guidelines or in a handbook and should be included in safety system audits.

As there are individual demands for training, it has to be emphasised that a company should give some discretion to managers to decide which training is necessary to fulfil the aims.

Modules of Training

The area of safety training is frequently structured in a modular system where the different modules are as follows:

Work or Business Guidelines
These guidelines should contain the basic principles of safety and may consist of chapters such as gas safety, works traffic code, working at heights, fluxing agents, confined spaces, heat stress, fire and rescue, first aid and hazardous materials as appropriate. All employees should receive this basic training which should be repeated as necessary.

Department/Local Site Training
In this module of training, attention is paid to the dangers and hazards in a specific area (e.g. dangers of liquid steel at continuous casting plants). This training should consist of job safe practice and procedures, department health and safety regulations, responsibilities of employer and employee, hazardous substances at workplace, protective clothing etc.

Specific Job Training
Module 3 is similar to module 2, but focuses on the workplace area. In this matter, it is important to train: identifying high-risk potential, detailed working procedures for specific devices, specialised training on operations. Special courses such as crane driver's license, forklift operation, first aid for electricians and lasers and radiation operation are also elements in a specific job training.

Management Training
Engineers and managers should receive training that allows them to fulfil their responsibilities for safety. Apart from special technical training, they should attend courses such as risk analysis, health and safety audits, safety management and safety legislation.

Whilst all companies use predominantly in-house experts for training, external experts are utilised from time to time depending on the required competence, legislative requirement, size of training requirement and availability of training resource. There may also be a role for some external training in some companies on specific topics e.g. confined spaces, the use of breathing apparatus and manual handling. Several courses such as first aid and crane driver license have to be accredited externally.

Training for Different Occupational Groups
For different occupational groups, different kinds of training are required. A basic principle for all companies is that every employee has to undergo training on 'General Health and Safety Issues' or 'Critical Safety Training'. The duration of this training is about one to three days.

For new employees, electrical craft, mechanical craft and process operators, a specific training is performed at the workplace by the department/local site health and safety training. It is also quite common to pair up new employees with experienced employees who have high safety competence, at their workplace, for several days. Legislation in some countries makes safety and health education a part of the education for electrical or mechanical craft.

Additional training courses in the company are e.g. first aid for electricians and specialised education for equipment. Engineers and managers focus more on strategic and managerial courses such as:

- Health and safety management.
- Training e.g. 'Role of the Manager in Health and Safety Aspects'.
- Safety audit courses.
- Risk analysis and assessment.
- Courses on occupational health and safety legislation.

Issues that are more technical like specific courses for first aid or fire and rescue are also elements of the training programme for engineers and managers. As contractors become increasingly involved in the steel industry, the amount of health and safety training for them is also increasing significantly. Some companies invite the contractors' managers and employees to participate at their relevant level of training. (See Chapter 5. Section E.).

Tools for Training
For successful training, a broad variety of tools is used. Apart from classic methods such as seminars and classroom, additional tools are being utilised increasingly. These include:

- Health and safety videos
- Compact disc training modules for use in all business areas
- Computer interactive training with feedback system
- Practical participation (use of breathing apparatus, fire fighting, first aid techniques).

Competence Assessment
The kinds of competence assessment vary quite a lot between companies, but competence assessment is considered particularly important. The following methods of competence assessment are in use:

- Feedback systems after training.
- Questionnaires on matters included in training.
- Open or closed book assessment with the use of true/false sheets.
- Interviews by managers, supervisors and trade union officials.
- Simulated rescues to prove competence.

In addition, the training programme itself should be assessed from time to time.

B| Audits

Introduction

An audit is a structured evaluation of the application and efficiency of the company's safety policy, safety programmes and safety systems. It is also a control of the compliance with the national law rules and regulations, against a clear standard (according to a common and reproducible format), which may have a national standard or company standard as a guideline.

An audit is a widely used instrument and an important tool to improve safety

Audit Subjects

There are different kinds of audits and some of the principal groups of audits are referred to below:

Audits of Management Systems
These can include the following topics:

- Organisation, responsibilities, authorities.
- Training, competence evaluation, instructions.
- Action plans for improving health and safety performance.
- Risk assessments carried out.
- Accidents, near-misses, work-related medical and ergonomic problems, rehabilitation results.
- Goals and results.

Audits of management systems should check that:

- The system exists.
- The system is fully understood.
- The system is fully applied.

The Appendix to this chapter contains an example of a company safety audit checklist.

Audits of Safe Working Procedures and Employee Behaviour: "Safety is Quality"
There are audits that focus on observing the worker at his working place and on interfering immediately. Violations of safety instructions, unsafe actions and unsafe conditions can then be reduced.

The objectives of the audits are:

- Avoiding injuries, damages to health and material.
- Promoting a positive safety behaviour.
- Increasing the awareness for safety.
- Establishing of safety regulations.
- Checking if safety instructions are understood and complied with.
- Finding out weaknesses in the safety management.
- Finding out and correcting unsafe actions and conditions.
- Motivating workers.

Safe working procedures are established in different ways, see section "General Procedures". When auditing the working procedures the following categories are important:

- Personal protective clothing.
- Posture, position of workers.
- Tools, materials.

- Ergonomic considerations.
- Safety instructions.
- Order and cleanliness.

Audits of Contractor Activity
Auditing of contractors is a tool that is being increasingly used in the Steel Industry. It is being used to monitor the systems for safety within a company by examining items such as the safety policy, safety meeting arrangements and safety training. Auditing is also used to monitor on site work in terms of adherence to the safety method statements, site regulations and safety legislation.

The results of these audits can either be responded to immediately or used to develop improvement plans, which can be monitored on a regular basis. An example of a questionnaire for a Safety Audit is shown on page 53. See Chapter 5, Section D, for more general comments on contractor safety.

Other Types of Audits Include:
Audits focusing on specific topics e.g.

- Fire protection, means of escape.
- Hazardous substances, handling, protection, waste.
- Electrical installations.
- Temperature conditions.
- Noise, lighting.
- Working at heights.
- Housekeeping.

Preparation and Organisation of Audits

Because of the wide variety of audits, and the various objectives that are being pursued, the preparation and organisation of audits should be developed to suit the particular audit in mind. Audits are normally prepared by health and safety experts. Some companies have special Preparation Teams comprising safety personnel, line managers and sometimes safety representatives. They can decide on what the audit is to focus. In many companies, the Central Safety Committee makes audits combined with plant visits. The Central Safety Committee often consists of CEO or plant manager, line managers, safety professional and safety representatives.

One objective is to look at the working place with a “new eye”. People from other departments with another background and competence observe other things than those who are familiar with the environment. There are companies where the quality department is involved and the audits are combined: Quality, Safety, and Environment audits. Standardised documents for different topics are used. Detailed checklists with many questions are available in many companies.
A questionnaire is often sent out in advance to the department where the audit will take place.

Audits can be formally scheduled to a timetable. There is a variety of frequencies. Some companies have defined targets/programmes for the number of audits that has to be carried out. Other audits may be carried out without any warning as a spot check.

Reporting, Implementation and Follow-up of Audits

The report of an audit should always be documented in some kind of audit protocol. Databases are often used to record, analyse and manage the auditing programme, the results and the "outstanding issues".

Action plans with a time scale should be agreed after each audit to ensure that the lessons from the audits are learnt and actions will be implemented. It is important that the action plan is "owned" by a certain person.

Follow-up should normally be done by the line management. In regular safety meetings, morning meetings etc., the outcome is discussed and followed up. Corrective actions should always be assessed in subsequent audits or other Management reviews.

To measure improvements, scoring systems are used in many companies. The score can be based on e.g.:

- Cleanliness and housekeeping.
- Compliance with company standards, rules and regulations.
- Quality and implementation of instructions.

Auditors

Persons carrying out the audit will vary depending on the nature of the audit. The audit team may vary in size but should be kept as small as possible. It may include the plant manager or unit supervisor, one or more operatives and should normally include a safety professional. It may also include people from another department or even another works and may also need the participation of other specialist personnel. Training in auditing techniques should normally take place.

An Example of a Questionnaire for a Safety Audit

Definition:" Internal control is a systematic method for planning, executing and supervising the business activities in such a way that the demands upon the working environment will be fulfilled."

Questions:

1. Goals
   - Presentation of the goals.
   - Are the goals obvious?
   - Can they measure the goals?
   - Are the goals well known in the department?

2. Delegation
   - Is there a written delegation of working environment tasks?
   - Are the documents signed?
   - Is the delegation combined with competence?

3. Surveys of risks
   - What risk surveys are carried through?
   - How are they done?
   - Plans for risk surveys.
   - Identification of serious risks.

4. Training/Competence
   - Requirements.
   - Competence level in the group; is it identified?
   - Are there plans for training?

5. Routines for investigation and collation of working injuries, accidents, incidents
   - How do you do the investigation?
   - How do you follow up the measures that are taken?
   - What do you conclude from the analyses and statistics?

6. Inspection/internal control of equipment that should be regularly inspected or controlled
   - How is that organised?
   - Follow up procedures; bottles, lifting appliance, mobile platforms, etc.

7. Plans of action
   - Timetable for the actions, a person who is responsible for each action.
   - Follow up procedure.
   - Who does the plan of action?

8. Collaboration/communication with the employees
   - Are the employees active in the work in the working environment ?
   - How do you inform and give feed-back?
   - How is the communication organised?
   - Safety groups, activities, representation.
   - Safety days, etc.

9. Introduction, information for new employees in the department
   - Who is responsible for the information, introduction?
   - Do you use the checklist?
   - Follow up procedures.

10. Working instruction for dangerous works
    - Is there a list of the dangerous works in the department?
    - Do you have instructions for those works?

C| General Procedures

Introduction

There is an abundance of procedures in health and safety. In recent years, steel companies have developed many procedures and the experiences with these techniques not only differ from company to company, but within companies. The general approach in applying them might be characterised by the trial and error process. The choice of which procedures are to be adopted depends strongly on the culture of the company or the department and the feelings about the approach among the management and workforce.

However, all companies consider at least three elements that should be present in the safety system of all (steel producing) organisations.

- finding out what hazards are present in your operations, risk assessments and where possible eliminating them by technical or other means;
- establishing the proper way that things have to be done to avoid these hazards: safe-working procedures.
- learning from your mistakes, accident and incident investigation and reporting.

Risk assessments

Companies contributing to this report not only use risk assessment on a reactive basis (after accidents or incidents), but they also see risk assessment as the obligatory first step in establishing safe working procedures.

The choice of which procedures are to be adopted depends strongly on the culture of the company or the department and the feelings about the approach among the management and workforce.

One should discriminate between risk assessments involved in the prevention of major hazards (which is a quite different topic), and the methods used to identify and quantify the hazards on a more common workshop level (although these also might be serious), which are addressed in this Chapter. The approach may vary from job safety analysis with strong involvement from the workforce to more structured techniques (sometimes stipulated by law) in which a leading expert role is usual.

Generally, risk assessments are carried out by teams including representatives from the workforce, management, supervisors and experts. Competence of team members is assured by training and experience. In some countries, specific requirements for the expert participants apply. The form risk assessments may take vary widely; from generic - covering all types of risks in a more global approach, to rather specific risks, tasks or process assessments. Sometimes specific groups inside the workforce may be addressed in risk assessments (young persons or trainees, pregnant women etc.).

Results are recorded and reported in written form. Reports include the description and rating of risks as well as suggestions for control measures, which may lead to new or revised instructions or procedures, (additional training, investments and/or rearrangement or redesign of the workplace. Results are communicated in a natural way (e.g. verbally, management presentation, written report) among participants and addressed parties (including contractors).

Risk assessment should have a periodic review scheme. Additional reviews are indicated in situation of change (modification of equipment, tools or tasks) and increased occurrences of incidents and/or injuries.

Safe Working Procedures

For new or existing plants, processes, operations or tasks, safe working procedures should be established by management with assistance from employees and experts in safety, ergonomics, hygiene, etc. Employee involvement is crucial; employees know the key risk elements in their activities. They are also the best persons to test and ensure that procedures are clear.

A common structure might be difficult to reach due to the elements of a 'bottom-up' approach in establishing procedures, but which might be preferable for communication aspects. Standardisation in management systems will enforce the structuring of procedures.

Safe working procedures are communicated in written form, should be accessible at shop-floor level and should be explained by management and supervisors or during training and meetings. Cascade training by nominated trainers might be effective in training large numbers of employees in site-wide procedures.

Competence assessment can be done by periodic testing through simple written work (multiple choice) and more advanced methods using interactive testing by means of computers. It is felt that observation rounds, inspections and audits by management, supervisors and safety staff are also very important in assessing and monitoring compliance with safe working procedures.

Review of safe working procedures should be done periodically. Typically, a review period of about one year is usual, but might depend on the likelihood of change in the procedures or the relevant activities. Modification of equipment tools or tasks and incidents or injuries should always trigger a review of procedures.

In routine operations involving contractors, company procedures should apply and be properly communicated to the contractor. In case the contractors have their own procedures they need approval of the company (generally the department that is commissioning the work). In non-routine operations (e.g. construction and investment works) a safety plan containing safe working procedures might be developed in close co-operation with the (main) contractor.

Accident/Incident Investigation and Reporting

The major goal of an accident and incident investigation should be the prevention of a reoccurrence of the same or a similar event and not to identify someone to blame! It can also be used to motivate those participating in the investigation, including shop-floor employees.

An accident rarely results from one single cause, but is the result of the coincidence of several causes or factors. Accident investigations try to reveal and identify these factors.

The investigation process should involve two phases:

- Gathering of information on the site of the accident, establishing circumstances and the course of events, interviewing the victim(s)and eyewitnesses. The first phase already might lead to control actions, generally aimed at direct prevention of injuries (e.g. wearing helmets to prevent injuries from falling objects).

- In the second phase, the accident factors are studied in a broader perspective to reveal so-called 'root factors'. These root factors give clues to why 'things go wrong' and are therefore of fundamental importance. Inclusion of root factors leads not only to prevention of injuries (head injuries) but also avoids the cause of the injury (falling objects).

The investigation might be completed by statistical analysis of groups of accidents to reveal common factors. These analyses are very important in guiding the departmental management in the selection and prioritising of corrective action. The increasing awareness of the importance of root-cause analysis has led to a growing attention to near misses (events that might have led to injury or damage/loss) investigation and reporting. The advantages are obvious:

- Although in near misses the injury did not occur, root factors have manifested themselves and are 'available for investigation.
- The occurrence of near misses is much higher than that of accidents involving injury, which will lead to much more information on a shorter timescale (so management action does not have to 'wait' for more accidents to get a representative picture of root factors).
- A near miss did not lead to an injury, which means that some element in the safety system worked well; investigation of these elements will provide information that can be used to reinforce these parts of the system.

In setting up a near miss reporting system, one has to consider a number of fundamental conditions:

- No-blame arrangements; most people see a near miss as a personal mistake and are not eager to report their (as they see it) personal failures.
- Formalised investigation procedures and action planning on results of investigation (near misses as serious as injuries).
- Feedback to the person that raised the issue (quite often the reporter is a member of the investigation team).

Indeed, the no-blame arrangement is of high importance and, quite often, it can take some time to get confidence among the workforce that the approach has changed. In addition, one should be aware of the pitfall in setting targets on all injuries. One might do so for lost-time injuries, but a well-working near miss reporting system will also reveal lots of small injury near miss incidents and accidents (first aid box cases) that would not have been reported if a near miss reporting system was absent (conflicting goals).

There is a real need to distribute accident investigation reports widely not only to those directly involved, but also to other parts of the organisation which may face similar situations.

D| Contractors

The use of contractors in the steel industry varies between producers. Some companies have relatively little contractor involvement while others utilise significant numbers.

They are used by some companies predominantly on construction-type projects and on work that requires specific expertise. In other organisations, they are working on a daily basis alongside the parent company's own employees. There is an ever-increasing trend of partnership relationships with contractors where their personnel's safety is an issue for all parties to address.

Whatever the local conditions, the approach to the management of safety with contractors should be consistent. The thought that health and safety responsibilities can be contracted out along with other aspects of a job requirement has been found in practice to be unworkable.

The thought that health and safety responsibilities can be contracted out along with other aspects of a job requirement has been found in practice to be unworkable.

Legislation will often dictate the relative responsibilities of the steelmaker and his contractors. However, more companies are now recognising that from a practicable point of view, as well as from a moral one, it is more efficient to apply the same best practices in health and safety to contractors as are applied to their own employees. Additionally this is reinforced by cultural change and the impact on their own employees' culture and motivation.

Example
Contractor Employee Health and Safety Programme.

Eight key principles for the management of Contractor Employee Health and Safety endorsed by the Chairman and Chief Executive in September 1995 and including a Toolkit of initiatives and ideas to support the key principles. Offered to all Managing Directors in order that they should produce local plans for progressive year-on-year improvement.

Key principle

1. Set objectives (Targets) for improvement.
2. Understand the relationship between company and contractor.
3. Establish ownership.
4. Check competence.
5. Provide resources.
6. Communicate.
7. Equal weighting.
8. Same treatment.

Toolkit: (Examples from)

Before the Contract

- Reduce number of approved companies.
- Increase annual contracts.
- Appoint owners.
- Single site contracts for high risk activities.
- Establish data base for contractor personnel.
- Training and competence records etc.

During the Contract

- Method statements mandatory and always commented upon.
- Audit proforma.
- Cross audits.
- Pre-set questions.
- Safety monitoring log books etc.

After the contract

- Review.
- Interview with contractor management.
- Annual company briefing.
- Review method statements use and update.

Contractor Safety Policy Document

Companies need to develop a clear policy that establishes their approach to managing the health and safety of contractors. Normally this is best set out formally in a document so that company and contractor employees understand what is expected of them.

Contractor Selection

Contractor selection is a vital area in achieving the best results. Some of the key issues are:

- Only those contractors who can demonstrate good performance and organisation in health and safety should be considered for use.
- The safety systems and record of a contractor should carry similar weight to other performance factors when considering the choice of contractors.
- The number of contractors that are approved should be minimised and the same contractors should be used for repetitive work and also for high-risk activities e.g. scaffolding and roofing.

Communication

Contractor Committees should be established where key issues pertinent to all contractors can be addressed. This forum can also allow contractors to raise issues that can have site-wide implications. It is worth considering identifying a specific parent company employee for individual core contractors who meets them on a regular basis to discuss their performance, accident statistics, systems of safety and future safety initiatives.

Before commencing work, on-site pre-work briefings need to be completed that cover the scope of work, work method, risk assessment and identification of key hazards. A comprehensive 'authorisation to work' permit needs to be completed before job initiation.

A critical aspect of communication is the management of interface between contractors on the same site. In some situations, it is essential that a co-ordinator is appointed to ensure a complete awareness of how the actions of one group affect the next.

Auditing

Auditing of contractors is a tool that is increasingly utilised in the steel industry. It is used to monitor the systems for safety within a company by examining items such as the safety policy, safety meeting arrangements and safety training. Auditing is also used to monitor on-site work in terms of adherence to the safety method statements, site regulations and safety legislation. The results of these audits can either be responded to immediately or used to develop improvement plans, which can then be monitored on a regular basis and result in improved contractor performance. An example of an engineering safety audit and explanatory notes for auditors is shown in the Appendix. (Also, see Chapter 5. Section B., which refers to auditing in general).

Training

The training programmes required by contractors will vary, depending on contractor activity. Core contractors who are regularly on site should receive a 'Works Induction Course', which introduces the general hazards that occur site-wide. This should be followed by a 'Departmental Induction Course', which should deal with specific safety issues relating to the place of work.

It may be worthwhile raising the contractor supervisors' understanding of broader health and safety issues by an appropriate external training course. It is essential that the same contractor personnel are used for the duration of the activity. Alterations to personnel can result in non-inducted individuals carrying out work in unfamiliar areas, thus raising the risk levels.

Safety Statistics

Contractors' employees should be encouraged to utilise the medical facilities of the steel works where possible or the same system as steel companies' employees when medical facilities are not available. It will also become clear which contractors have the higher levels of accidents and this can be addressed by specific action plans.

E| New Investment

The safe operation of steel industry facilities results from a complex mix of factors, including physical plant, management systems and individual behavioural aspects. It is important therefore to incorporate safety considerations into plant expenditure decisions. When building new or modifying existing facilities it is appropriate to ask the question "What level of health and safety performance is being built into these facilities?"

The cost of retro fitting is normally considerably more expensive than incorporation in original design

In many instances in the past safety considerations have not been adequately considered in the facilities design and frequently the view was that to consider specific design modifications would add cost to the facility.

If this view arises, additional questions should be asked:

- How does this decision relate to the stated safety policy of the company?
- If safety aspects are ignored during design and construction, what level of retrofitting and at what cost can be anticipated in the future?
- Does the proposed design allow the efficient ongoing operation of the facility in a safe manner?

The requirements for safety in the design of new or modified facilities involve the expertise of safety specialists and on-the-floor equipment operators as well as the more traditional plant designers. Considerations could include ergonomic factors, lockout locations, escape routes, line of sight aspects and relationship to other equipment to be installed.

Where facilities are being installed on a turnkey basis by an outside supplier who will not be involved in the on-going operation of the facility concerned (from either a safety or cost efficiency perspective), the need for such a pre-emptive safety review is heightened to ensure that operational safety is not traded off for initial cost savings.

Some companies have found it useful to incorporate a standard section in the forms used for a formal request for funds which must be completed to verify that safety aspects of the planned expenditures have been consciously addressed.

The opportunity to "get it right the first time" is at its peak at the time of original design and installation of buildings and equipment, whether constructing entirely new facilities or modifying existing operations.

F | Health-Related Issues

As stated earlier in this document, this report does not address occupational health-related issues and programmes in general. However, reference to some of the issues was felt to be appropriate in this document. Reports on some of these issues have been prepared by IISI including "Noise" and "Hazardous Substances".

Need of a Policy for Substances Hazardous to Health

Many companies have defined a policy for the control of substances hazardous to health, which is often based on legislation. Its aim is to minimise risk to health due to hazardous substances exposure in workplaces. Key elements are: identification of the hazard and evaluation of the risks, elimination, substitution and control of the substance.

Materials Safety Data Sheets

Suppliers of materials should provide and keep upgraded material safety data sheets, describing hazardous aspects of materials and remedial actions when problems occur. This information is generally transcribed into a standard format and inputted to a mainframe computer system. Databases can be consulted by health and safety departments and in operational units. Paper-based information can also be available in workplaces. The health and safety departments should approve products before purchasing. For certain substances, some compulsory health controls are added before allowing their use. The health department generally updates the database.

Key elements are: identification of the hazard and evaluation of the risks, elimination, substitution and control of the substance.

Risk Assessment for Substances Hazardous to Health

Different companies carry out risk assessment for hazardous substances. In general, they are included in the audit process.

Treatment of Particular Substances

The following are a few examples of how exposure to potentially hazardous substances is treated. The list is not exhaustive.

- Asbestos: In more and more countries, the use of asbestos is now forbidden. The major problem with asbestos in steel plants now arises during the demolition or modification of existing plants. Competent licensed contractors are normally used to strip asbestos in these structures and stringent precautions apply.
- Lead: Exposure to lead dust or fume is a potential problem requiring control and health surveillance in accordance with legislation, including exhaust ventilation, personal protection and medical screening.
- Carbon Monoxide: Personal or static monitoring devices for measuring CO exposure are used in production units where CO might occur. The most exposed areas are coke ovens, blast furnaces and stack emissions. The use of breathing apparatus and alarm devices is widespread. Some companies are carrying out health surveillance through regular medical examinations for exposed workers.
- Policyclic Aromatic Hydrocarbons: The potential risk areas include blast furnaces, coke ovens and by-product plants. Some companies carry out environmental monitoring in all production units where PAHs might occur. Health surveillance is carried out in accordance with legislation.

Arrangements for Monitoring Employees' Exposure to Hazardous Substances

Companies are carrying out exposure monitoring depending on substances and law requirements or upon request. This monitoring is done either by the environment department of by the health and safety department. The frequency will depend on risk and exposure potential. Typical monitoring is by air sampling and by blood or urine sampling.

Arrangements for Health Surveillance in Case of Exposure

If risk assessment indicates an exposure to a hazardous substance or upon request by management, the occupational health department may carry out special health surveillance. The medical check is related to the degree of exposure and its nature. Typical examinations are: blood sampling, x-rays, physical examination, urine analysis and biological monitoring questionnaires. The outcome of these surveillances is used for medical treatment and to recommend preventive measures in workplaces, including the use of personal protective equipment.

Some Other Health-Related Issues

- The need for risk assessment is emphasised.
- Noise: The health effects of noise are a very important issue. Extensive hearing conservation programmes, policy and procedure documents and best practice keynotes are the more elaborate solutions. An 'individual approach' seems an effective way to increase the motivation for the regular use of ear protection.
- Manual handling is another major issue. Elimination is the main solution for heavy work: by robots, mechanically assisted equipment, lighter substitution material or other technologies. Training by experts is often used to manage the remaining risks.
- Repetitive work and vibrations are considered a serious source of work-related health problems. Ergonomic or organisational improvements are researched. Rotation may be useful to limit the duration of exposure and to make the work more interesting.
- The influence of psychological and social factors on health is often underestimated.
- Ergonomic problems are receiving increasing interest.

Health Monitoring

Risk-oriented testing for secondary prevention and for evaluation of the exposure is made by many companies: audiometry for deafness, muconic acid for benzene, hydroxypyrene for PAH (policyclic aromatic hydrocarbons), etc. The frequency of these tests varies in function of unknown criteria.

Otherwise, a large variety of health monitoring is observed. These differences are mainly due to the country regulations. An annual medical examination may be compulsory for every employee, with an aptitude evaluation objective. Or such an examination is made for the persons who (a) drive engines, (b) are exposed to a risk of professional illness, (c) are less than 21 years old, (d) are handicapped and (e) handle food.

Health promotion is an objective taken into account in some companies, with concerns for smoking, alcohol or ischemic heart disease. Elsewhere, no medical examination is, or no longer is, performed. In many cases, the effectiveness of these health promotion activities seems to remain unknown or difficult to measure.

Rehabilitation Programmes

Most of the companies have rehabilitation programmes. In some cases, rehabilitation is implemented by professionals based in the central safety department, regardless if the injury/illness is work-related or not. In other cases, rehabilitation is mainly offered by the social security system.

Problem-oriented programmes concern injured workers, long-term disability, drugs and alcohol addiction, low-back pain etc. Most of these programmes are generally implemented by a physiotherapist and overseen by the medical department. Some countries passed new laws that place more emphasis on the rehabilitation responsibility of the employer and of the employee.

Drug and Alcohol Abuse

Introduction

Many companies feel the need to have a clear policy document which outlines the approach to drug and alcohol abuse for the following reasons:

- To ensure a safe working environment for all employees, visitors and contractors.
- Because drug and alcohol problems are more common than is believed.
- Company needs a clear model how to deal with the people who have drug and alcohol problems and how to help people who have a problem to solve it.
- To make sure that all the people working on steel plants are dealt with in the same way.
- To train and inform all managers, superiors, safety representatives and safety experts.
- To notice and handle abuse problems.
- To enable that drug and alcohol problems be managed in a proactive manner.
- Employers have also a moral responsibility for the outside world in reducing drug and alcohol abuse.

Legislation

Differences in local legislation have to be taken account when writing the policy. The main areas to consider carefully are as follows:

- What kind of tests are allowed to be carried out?
  - blood, urine, breath, etc.
- When are the tests carried out?
  - when employing new people, on suspicion, after accidents, after work absence etc.
- Who is allowed to carried out the tests?
  - company's health centre, outside health centre.
- How confidential are the treatment and rehabilitation programmes for individuals?
- Is the treatments programme voluntary or not?
- What is the role of the company's own medical and nursing staff?
- What are the roles of company's safety committee and safety representatives?
- What is the role of the trade union and authorities?

Additional Remarks

It is important that the rules made for the company's own personnel should be the same for all subcontractors.

It may be important also to have some statistical information on drug and alcohol problems (number of different tests, treatments, rehabilitation, dismissed people etc.).
(See Appendix for examples of policies).

Alcohol and Other Drugs in the Workplace

Policy Intent

This policy is to ensure that : whilst at work, all employees, visitors and contractors are provided with a safe working environment free from risk of injury due to the consumption, possession or use of alcohol and/or drugs in the workplace. The aim of the policy is to enable drug and alcohol issues to be treated in a pro-active manner, in an effort to eliminate injury or illness related to drugs and alcohol.

Where it is identified that an employee has attended the workplace in a condition that renders them unfit for their normal duties due to the consumption of alcohol and/or other drugs they will be managed in accordance with laid down procedures.

Policy

The company will:

- Reduce alcohol and drug problems in the workplace through good personnel management, employment practices, arrangement of work and consultation.
- Prohibit the availability of alcohol or illegal drugs and control the use of legal drugs in the workplace.
- Reduce alcohol and drug problems in the workplace through information, education and training programmes, relating both to safety concerns and health promotion.
- Identity and assess workers who have alcohol or drug problems.
- Provide confidential counselling, treatment and rehabilitation for individuals with alcohol or drug problems.
- Take appropriate disciplinary action where rules related to alcohol and other drugs are breached.

Signed: Group General Manager

Policy for Alcohol, Drugs and Anabolic Steroids

Action Programme

The manager's responsibility

As a manager, you are formally responsible for problems at work being solved. If you suspect that any of your fellow workers have problems related to alcohol, drugs or anabolic steroids, you are the one who must do something. The first step is to talk to your fellow worker. The starting point for the talk are the facts which you have documented, e.g. short-time absence, changed performance at work, etc.

Your role is not to make a diagnosis, but to start from the behaviour you have seen. Show respect for your fellow worker but also firmness and insist on a change of behaviour.

The fellow worker's responsibility

It is most often amongst the fellow workers that someone is discovered to have problems with alcohol, drugs or anabolic steroids. Show that you see, dare to care. Your responsibility as a fellow human being is to dare to take actions. (Thereby you could prevent the addiction from developing further.)

The addict's responsibility

The addict should be responsible for his/her own recovery and must follow the agreements made.

How to proceed/What do you do?

Alcohol addiction

If a fellow worker is under the influence of alcohol at work, it is you as a manager or the person in charge who is responsible for transport home. This applies irrespective of whether the activities in production and administration have to be stopped. Inform a trade union representative.

If the fellow worker denies being under the influence of alcohol, the sobriety could be proved by an alcohol test done by e.g. the Security Service Dept. (the guard). If the fellow worker does not agree to an alcohol test being carried out, the evaluation of the manager applies and the person concerned is sent home.

The manager schedules the talk for as soon as possible. The aim of the talk: to inform the person concerned of the gravity of the situation (regulations), point out the consequences of a repetition and provide information on aid available for the person concerned.

When the addiction has been confirmed, an action programme is set up. The purpose of the action programme is to help the employee to stop his/her addiction and keep his/her employment. The action programme is prepared by the manager, the person concerned, the personnel manager's assistant and the trade union representative. A personnel advisor and the company health service will take part in the rehabilitation.

Should the addict not agree to this programme or interrupts it, it could mean that notice of termination of employment is served.

Dealing and smuggling alcohol at work is reported to the Security Service, which will be responsible for notifying police authorities.

Drug and Anabolic Steroid Addiction

The manager will contact the Company Health Service for an analysis of a urine specimen if he suspects a non-medical use of drugs and anabolic steroids.

The manager or the person in charge of the personnel will be responsible for ensuring that a drug test is carried out when an accident/near accident occurs. The test will be taken as soon as possible after the incident.

The manager will make sure that the person concerned is accompanied by someone when a specimen is taken. During office hours specimens will be taken at the Company Health Services, at other times specimens are taken at the Main Gate.

The Company Health Services will inform the manager of the analysis results. The fellow worker will be suspended from work until the analysis is finished. The manager will inform a trade union representative.

In case of a positive specimen, the fellow worker will be suspended from work until three negative specimens have been obtained. When addiction is confirmed, an action programme is set up. The purpose of the action programme is to help the employee stop his/her addiction and keep his/her employment. The action programme is prepared by the manager, the person concerned, the personnel manager's assistant and a trade union representative. A personnel advisor and the Company Health Services take part in the rehabilitation.

Should the addict not agree to this programme or interrupts it, it could mean that notice of termination of employment is served.

Dealing or smuggling drugs and anabolic steroids at work will be reported to the Security Services, which are responsible for notifying the police authorities.

Annex A: Pitfalls and Remedies

Pitfalls and Remedies with Culture Change Programmes:

Culture change programmes are notoriously difficult to implement. The following list of pitfalls and suggested remedies is a synopsis from the excellent book on the subject by David Drennan*. It should go a long way towards anticipating and managing some of those potential problems:

1| **Pitfall** Looking for quick fixes.
Remedy Realise that there is no magic wand. A campaign may solve a particular problem, or a training programme may create an awareness, but neither will change the culture of the organisation. Do not expect overnight success; have patience – changing the culture of an organisation is directly proportional to its size. In most steel companies, this will take anything from three to ten years, so design and plan the programme accordingly.

2| **Pitfall** Setting too many goals.
Remedy Realise that you cannot put everything right at once. You cannot cover all the bases; the purpose of the programme is not to look good on paper but to change behaviour. Focus on one key goal with no more than three or four specific objectives and formulate these very carefully.

3| **Pitfall** Setting objectives that are not actionable by employees.
Remedy Ensure that the objectives of the programme are verbalised in such a way that employees can understand and contribute towards their achievement. Find ways to ensure that all employees understand and support the objectives. This will enable them to do something active towards achievement of the objectives every day that they are at work. The definition of a team is a group of people with a common objective; without that shared objective employees cannot contribute as a team.

4| **Pitfall** Inconsistency

Remedy Do not keep moving the goal posts! Beware of losing patience and changing the game plan. Beware of flavour-of-the-month fads. Employees will not commit themselves to an initiative if they have the expectation that it will be replaced or not be important anymore in a few months time. When planning the programme and you cannot see yourself staying with a particular issue for a least three years hence, do not include it in the programme. Employees will become supporters only when management demonstrates constancy of purpose.

5| **Pitfall** Lack of top management commitment.

Remedy Find ways in which all managers in the organisation can demonstrate their enthusiasm for the programme. Use every opportunity to let managers at all levels talk about the programme. Managers must demonstrate that they are not discouraged by the inevitable problems, lack of progress, or setbacks; they must stick with it through thick and thin.

6| **Pitfall** No follow-up.

Remedy Follow up religiously. What convinces employees that something is really important to the company is that managers at all levels are seen to be devoting time, money and effort on something.

7| **Pitfall** Expecting instant results.

Remedy Managers are notoriously impatient, especially those from an engineering background. Their training and education have taught them that problems are solved by good design and practical implementation. This may be true of solving an engineering problem, but it does not hold true for a culture change programme. Write long-term goals that are specific and measurable. Agree on milestone targets along the way and plan to accommodate more urgent short-term needs in the organisation. Above all be patient.

8| **Pitfall** Conflicting management priorities.

Remedy Realise that priorities change from day to day and that no single thing in the life of an organisation is the most important thing all the time. Plan accordingly. It will be hard to generate enthusiasm for the programme; do not kill it once you have it. If the company declares something to be the highest priority, it must be seen to be treating it that way, especially in the beginning.

9| **Pitfall** Inconsistent management action.
Remedy Be careful that other changes within the organisation do not contradict your objectives or alienate the very people you need to have on your side. For example: a culture change programme and a downsizing/cost-cutting programme simply cannot be run in any organisation at the same time. Finalise the latter before embarking on the former.

10| **Pitfall** Delegating too far.
Remedy Often with the best of intentions senior management will establish a new full-time position to raise the profile of the new initiative, thereby demonstrating their degree of seriousness. There is nothing wrong with this. However, in many cases this becomes a way for top management to get rid of the problem and to be relieved of feelings of guilt on the subject so that they can get back to doing what they have always done, that is, the really important things. If things do not go particularly well, they can always blame the programme manager for the lack of progress. To avoid this disastrous scenario, the commitment has to start and remain at the top of the organisation. Find ways and means of obtaining and sustaining this.

11| **Pitfall** Lack of top-level power.
Remedy Ensure that the top management team is the champion of the change programme and that progress (or the lack thereof) is reported to them honestly and objectively.

12| **Pitfall** Middle management resistance.
Remedy Middle managers can frustrate or dilute even the most powerful initiatives. Show them what is in it for them and how they can succeed in the new scheme of things. Demonstrate their role clearly and how they can contribute. Establish a sense of ownership by getting them to draw up specific actions, which they can take to advance the programme. Involve them in project groups where they can get the opportunity to propose policies and actions.

13| **Pitfall** Employee resistance
Remedy Identify and remove employee fears. Start simple, with those who are willing; early success is vital to remove doubts about the efficacy of the programme. Use colleagues to persuade others. Publish successes, celebrate heroes. Train, encourage and reward.

14| **Pitfall** Lack of structure shift.
Remedy Change the organisation and reporting relationships. Change procedures, forms, documentation, measures and rewards to reflect the new way of doing things.

15| **Pitfall** Training problems.
Remedy Do not overly economise on training; treat it not as a cost but as an investment. Plan properly and do the training systematically, area by area, including everyone, especially the managers. Build in follow up events and retraining.

16| **Pitfall** Size.
Remedy Realise that the bigger the organisation, the harder it is to change its culture. Start with a pilot area, preferably with someone who is already enthusiastic. Set challenges and transfer ownership. Follow up diligently by reviewing progress regularly with decision-makers. Use a new common language or system, create buzzwords for the programme and get everyone to use them. Measure and publish results. Create successive waves of activity and add excitement with every re-launch. Above all, communicate; keep the issue in the public eye at all times.

17| **Pitfall** Lack of persistence.
Remedy Do not embrace every new idea that comes along. Do not be tempted by fads that will make you look up-to-date and 'with-it'. If you must, integrate it into the programme but do not let it redirect the whole initiative. Realise that there will always be obstacles, prophets of doom, nitpickers and those who are simply not interested. Believe in the programme and stick with it. Temper early expectations, under-claim and over-deliver. Build on successes.

* Drennan, David: "Transforming Company Culture";
McGraw Hill 1992;
ISBN 0077076605

Annex B: Practical Tools and Techniques

A large number of tools and techniques are available and are being used by the member companies of IISI to give practical effect to initiatives described in this report. A brief description of each follows. Not all are appropriate to every operation but they represent a useful list of ideas, some of which will be new and of value to you.

1 Observations (Environment/Behaviour)

Description

- Accurate watching and noting of work practices and conditions.
- Assessment of the cause and effect of employee work practices, competency and workplace conditions.
- Provide immediate one-on-one coaching and feedback to employees regarding results.

Purpose

- Identify critical behaviours that can lead to incidents.
- Reinforce safe behaviour of employees.
- Correct at-risk behaviour of employees.
- Assess competency of employees and effectiveness of training programmes.

Criteria

- Determine the most critical risk areas in the plant obtained from incident and near miss data.
- Determine number of observers, e.g. all supervisors.
- Train and declare observers competent.
- Draft checklist for specific task-related activities that will help the observer to identify positive and negative safety critical behaviours of an employee.
- Draw up an observation programme.
- Give feedback to the employees involved as well as management.
- Update safe work procedures. Draw up preventative measures in team context.
- Keep detailed records of "who was observed, when, while performing which task, the feedback given etc.".
- Draft retraining programmes
- Implement and reassess.
- Various techniques can be used e.g.:
    - Spot-check cards.
    - Contractor practice cards.
    - Safety representatives observation checks.
    - Top management patrols.
    - Computerised question sets.

Example

A Sinter Plant Behavioural Project

A behavioural approach to health and safety is being trialed in the Sinter Plant. The approach uses the services of an Applied Behavioural Unit in its implementation.

The process is managed by a series of campaigns with each campaign lasting a total of 25 weeks. As the end of the campaign draws to a close, new observers are trained and the inventory of safety critical behaviour is prepared again (some behaviours may remain, some may change) and the cycle starts again.

The approach is centred on the work groups who carry out the observations, arrange improvements and own the process. Management's role is the facilitation of the process through training and support coupled with consideration of the funding issues that stem from the observations.

Co-ordinators and champions have been trained, the first safety critical inventory has been established and volunteer observers have been trained. The programme calls for observations over a 25-week campaign, followed by project reviews. Progress is monitored.

Behaviour Exercise

Following significant and continued improvements over a lengthy period of time a worsening trend became apparent and seemed to point to Health and Safety representatives with insufficient shift team commitment and involvement.

Focus groups addressed this seeking greater empowerment on shift. A behavioural study looking at adherence to use of Personal Protective Equipment against a group agreed standard has proved useful in the overall drive for improvement. A 35% reduction in all injuries and a 72% reduction in LTA has resulted in one year.

2 Feedback

Description

The process of keeping all employees (management and workers) informed. It can also be referred to as 'closing the loop' and is one of the most critical aspects of communication.

Purpose

- Give the correct information on time and on a regular basis.
- Report achievements, problems and opportunities.
- Prevent transgressions of the law, injuries and damage to equipment effectively through proactive actions.

Criteria

Create channels for feedback communication, e.g.:

- Safety newsletters.
- Posters.
- Flyers.
- Radio.
- Electronic information boards.
- Meetings.
- Industrial theatre.
- Informal one-on-one communication (a relationship of trust between employees and management).
- Suggestion boxes.

Contents of feedback includes:

- Tracking progress.
- Lessons learned.
- Safety performance.
- Experience.
- Statistical analyses.
- Trend determination.

3 Checklists

Description

List for reference and verification. Can be used for:

Auditing.
Inspection.
Observation.
Verifying standards.

Purpose

- Monitoring, evaluation and analysis.
- Ensure that all critical issues for auditing, inspection, observation, etc. are being adhered to.
- Ensure a complete follow-up of rectifying steps.
- Ensure alignment with legal requirements.

Criteria

- Determine where checklists are needed.
- Compile lists in accordance with the objective of the list, e.g. audit lists, observation lists etc.
- Update lists to keep up with changes in the circumstances and environment.
- Give feedback to the employees or management involved or responsible person for rectifying problems identified. Positive feedback should also be given.

4 Toolbox Meetings

Description

A formal or informal gathering of employees doing the same work or working in the same area and being addressed by their supervisor discussing a work and safety-related topic, e.g. the safe handling of a certain tool. No minutes need to be written but follow-up should be done.

Purpose

- Train employees about safe work procedures.
- Refresh the memories of employees on work procedures and safe handling of tools.
- Give comments in an informal way regarding rectifying steps obtained from behaviour observation data.
- Create an atmosphere of participation in discussions.

Criteria

- Schedule formal meetings or fit in unscheduled informal meetings on a regular basis.
- Make up a book/file with written talks for use by supervisors.
- Supervisors ensure that all employees attend these talks and have a good understanding of the topic.

Example

Pre-job Meeting

When workers face a job which is dangerous or has no job safety guide sheet, they stop work and the job leader holds a small safety meeting with them. The safety procedure is confirmed at this meeting.

Even though some jobs have safety guide sheets, a meeting is held when the job leader feels that confirming danger points and their countermeasures is necessary.

5 Attitude Surveys

Description

To take a general view of, or form a general idea of, the attitude and opinion of employees regarding safety. At the very least, a survey indicates interest in the perceptions of employees.

Purpose

- Systematically analyse and logically relate internal behaviour to internal circumstances.
- Determine attitude, mind-set and approach to health and safety matters.
- Determine the shift in attitude, mind-set and approach over a period of time.
- Determine if strategic decisions yield positive results.

Results of one survey are often not worth anything without a follow-up after a period of time to determine the shift in attitudes.

Criteria

- Determine the method to be used for the survey, e.g. questionnaires, anonymous response by means of push buttons.
- Run an information campaign to inform and assure the target group that there will be no negative consequences.
- Draft and implement the survey programme.
- Use information to produce a credible report.
- Draft and implement a programme to address deviations in behaviour and attitudes.
- Carry out a second survey (using the same standards and criteria as the first) after a period of time to determine the actual shift in behaviour.
- Give feedback to all involved and do follow-ups.

	Example Questionnaire	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	When I report on an unsafe condition that I am unable to correct myself, it gets taken care of within a time period that I consider reasonable.	☐	☐	☐	☐	☐
2	Employees in my work group know all the hazards of their jobs.	☐	☐	☐	☐	☐
3	Employees are kept up-to-date about actions that are being taken to improve safety in the department.	☐	☐	☐	☐	☐
4	When employees I work with see an unsafe condition, they take immediate action to fix the situation themselves.	☐	☐	☐	☐	☐
5	Management strives for continuous improvement in our safety performance.	☐	☐	☐	☐	☐
6	All employees in the department know the safe work practices to follow for the jobs they are assigned.	☐	☐	☐	☐	☐
7	Employees in this department are expected to work safely at all times.	☐	☐	☐	☐	☐
8	There is a climate in this department which encourages employees to have safe attitudes and follow safe work practices.	☐	☐	☐	☐	☐
9	When a manager realises that a dangerous situation exists, attempts are made immediately to put it under control.	☐	☐	☐	☐	☐
10	Safety is a part of all job training in this department.	☐	☐	☐	☐	☐
11	Working safely is a high priority in this department.	☐	☐	☐	☐	☐
12	In our work group, we never take risks to get a job done.	☐	☐	☐	☐	☐
13	When supervisors see an employee working in an unsafe manner, they immediately take action to correct the employee.	☐	☐	☐	☐	☐

		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
14	The safety information and training that we receive is presented in a manner that motivates us to work safely.	☐	☐	☐	☐	☐
15	Employees that repeatedly commit unsafe acts or do not wear personal protective equipment are promptly disciplined.	☐	☐	☐	☐	☐
16	When an employee in this department sees another co-worker working in an unsafe manner, they immediately take action to correct the employee.	☐	☐	☐	☐	☐
17	Supervisors conduct routine observations to ensure that employees follow safe work practices.	☐	☐	☐	☐	☐
18	The training we receive on the use of personal protective equipment such as respirators, eye, face and hand protection, motivates us to use our personal protective equipment as required.	☐	☐	☐	☐	☐
19	Employees are commended on the spot for working safely.	☐	☐	☐	☐	☐
20	Personal protective equipment is worn by all employees on jobs where required.					
21	Management wants every employee to work for a good safety programme.	☐	☐	☐	☐	☐
22	Employees receive training that helps them work together as a team to improve the safety performance of the department.	☐	☐	☐	☐	☐
23	Employees in this department are encouraged to be involved in the safety programmes.	☐	☐	☐	☐	☐
24	Employees in this department are proud of their safety performance.	☐	☐	☐	☐	☐

Thank you for your participation in this survey.

6 Safety Day/Week

Description

A specific day or week on the company calendar set aside to be dedicated by all to safety matters and for activities such as site visits by senior management, exhibitions of personal protective equipment, simulation of incidents etc.

Purpose

- Get total involvement of all employees (from top management to shop floor level).
- Give management the opportunity to 'walk the talk'.
- Focus on safety in such a way as to stimulate the idea of co-responsibility.
- Give employees the opportunity to participate and establish ownership.
- Achieve voluntary co-operation.
- Create community involvement e.g. the families of employees.

Criteria

- Budget generously to ensure a successful campaign.
- Plan the safety day/week to fit in with the seasons.
- Get as much involvement as possible from all stakeholders, e.g.:
  - Employees.
  - Trade unions.
  - Suppliers.
  - Contractors.
  - Local community.
  - Schools.
  - Health and safety inspectors.
  - Management.

- The programme of activities can include:
  - Simulation of incidents.
  - Industrial theatre.
  - 'Client day' to inform them about your safety focus.
  - Colour-in competitions for children of employees.
  - Safety quiz.
  - Exhibition of personal protective equipment.
  - Safety 'fancy dress' competition.
  - Competition for writing your own safety slogan.
  - Get public figures to convey safety messages.
  - Give recognition to employees and sections with.
  - Outstanding safety performances.
- Broadcast/market the campaign.
- Monitor, evaluate and analyse the success of the campaign.

Example
Use of posters by employees' children arising from a family day at the site.

7 Awards/Rewards/Recognition

Description

Payment, penalty or prize awarded through a formal system. When a plant/workplace achieves an excellent safety performance (zero accident days, injury-free hours) or an employee takes actions or makes suggestions to prevent incidents, management acknowledges their input by means of rewards.

Purpose
- Rewarding the results of employees' efforts makes their dedication to safety activities stronger.
- Stimulate interest, share best practices, reach a wider audience and encourage ownership.
- Focus on team motivation.
- Highlight positive safety results.

Criteria

- Not a paper-driven exercise, rather to give personal recognition to employees.
- Teams/plants should set their own stretch targets.
- It must contribute to improvement on previous performances.
- Concrete rewards should be given for achievements.
- There should be a uniform way of reward throughout the company.
- The recognition system should be designed in such a way as to prevent the hiding of injuries.
- Regular feedback on achievements should be given.
- Focus on the positive aspects regarding safety.

8 Competitions

Description

To compete to determine the best. People are inherently competitive and want to exploit the positive.

Purpose

- Stimulate interest, share best practices, reach wider audiences, advertise progress, encourage ownership and improve participation.
- Enable to reward best safety practices.

Criteria

- Participation should be voluntary.
- The rules to participate in the competition must be accepted by all concerned.
- The system should be simple to administrate.
- Should be driven by line management.
- The system should be designed in such a way as to prevent the hiding of injuries.
- It must contribute to improve on previous performances.
- On time feedback should be given.

Example

Competitions are variously used to stimulate interest; share best practice; reach a wider audience; advertise progress; encourage ownership.

i Company annual competition for endeavour and initiative in Health and Safety. Entries should demonstrate teamwork, and are judged by a joint senior management and senior Trade Union panel. Winning entry awarded trophy, and donation to a charity of £2,000.00. A runner up prize and commendations are awarded and presentations are made by senior directors. Entries are shared around the company as best practice.

ii Chairman and Chief Executive annual competition for endeavour and initiative amongst contractor employees, working on company sites. Entries are judged by the company and include audits of contractor operations. Similar trophy and prize arrangements as above.

iii Business annual awards for team entries for competitions. Frequently the winning entry will proceed to the Company competition. Prizes are small and of a token nature.

iv Performance related donations to charity are popular whereby a manager agrees a sum of money at the beginning of the year for zero lost time accidents. The amount is eroded if accidents arise and the finished sum presented to a charity of the team's choice.

v Good housekeeping competitions.

vi Quiz and other puzzles with safety themes.

vii Most improved accident rate.

viii Prize for 100th near miss reported when number reported not published.

9 Small Group Activities

Description

A group of employees with different occupations, working in the same plant (process) in order to solve safety problems and make suggestions in order to improve conditions, e.g. the safeguarding of machines.

Purpose

- Create a forum for employees to participate.
- Create a forum for employees to generate solutions to problems.
- Create a sense of co-operation and ownership amongst employees for their tools, machines and workplace.
- Enable management to give recognition.
- Get the 'one million dollar' suggestion from the group.
- Encourage self-development that leads to specialised knowledge and skills.

Criteria

- All employees should have the opportunity to participate.
- Problems that need to be solved should be within the group's area of responsibility and within their authority.
- The number of members should not exceed 10 persons.
- The group's field of experience should be cross-functional.
- Develop and define codes of practice.

Example

Small group meetings

The plant manager has an annual series of small group meetings for one hour; the members of each meeting are the plant manager and less than ten workers. The workers are the main speakers. Workers talk about their complaints and opinions about working conditions and the workplace; the plant manager makes notes of the essential problems in the plant and improves them as much as possible. The meetings are repeated yearly to observe the change in workers' spirit for working safely.

10 Shift Handover Briefings

Description

A forum for communication from one shift to another.

Purpose

- Ensure that relevant information regarding production, maintenance and safety is conveyed.
- Co-ordinate production, maintenance and safety efforts.

Criteria

- Determine a specific time e.g. 30 minutes before regular work hours for superintendents to exchange details on job status, facility malfunction, managerial orders and incident reports (handover book).
- Determine a place and time e.g. superintendent's office, 15 minutes before regular work hours to inform relevant details to shift members.
- Standing topics should be:
  - The discussion of risks involved in jobs to be done.
  - The execution of critical inspections to identify hazardous situations.
  - Post-mortem on incidents that occurred.
- Ask questions to obtain information and listen to arguments or evidence.

11 Presentation by Injured Person

Description

A method of conveying a safety message.

Purpose

- Share incident experience and give ideas to prevent recurrence e.g. lessons to be learned.
- Align the hearts and minds of workers and create involvement.
- Prevent transgressions of the law, injuries and damage to equipment.

Criteria

- There should be a no-blame atmosphere.
- Determine the most suitable time and place for the presentation.
- Reconstruct the incident by using video facilities, photographs and posters.
- Focus on:
  - Conditions present at the time of the incident.
  - Prescribed safe work practices.
  - Malpractice/malfunctions.
  - Consequences regarding physical injuries, equipment damage and production losses.
  - Suggestions to prevent recurrence.
  - Discussions.
  - Asking questions to obtain information.
  - Presenting constructive comments.

12 Pockets of Excellence

Description

A specific group/team/individual that performs better than others under the same working conditions.

Purpose

- Exploit pockets of excellence in order to achieve the safety vision and mission of the company.
- Encourage self-development that can lead to specialised knowledge and skills as shown by results.

Criteria

- Identify pockets of excellence by comparing safety data.
- Get best practices e.g. systems and procedures that are effective, functional and aligned with legal requirements.
- Inform/train other groups/teams/individuals to achieve the same standard.
- Carry out continuous evaluation and provide feedback.

Example

We are committed to the safety and health of our employees. We must judge our actions and results by the best the industry has to offer. We promote this concept with the ESP Best Practice Award. ESP is an acronym for Employee Safety Process. ESP is based on an actively caring philosophy through which all employees can work together to establish a safer workplace and a safer community. It is a family approach - i.e. you can think of your fellow employees as members of a family and treat them accordingly.

- You respect other members of your family.
- You reward their good deeds and gently correct their mistakes.
- You all celebrate your successes together.

Our Employee Safety Process (ESP) carries these same ideas into the workplace to encourage and reward safe behaviours and correct at-risk behaviours or conditions. This family focus is carried throughout the organisation to all employees at all locations.

ESP provides a framework for positive change that is defined, created and accomplished by the very employees who benefit from a safe working environment. It is an interactive process of defining workplace safety goals, conducting observations, providing intervention and coaching feedback, then testing to ensure positive results.

The ESP Best Practice Award recognises and honours those facilities, teams and individuals that have made significant contributions towards achieving the company vision to have the best safety and health performance in industry.

The selection criteria for an ESP Best Practice Award include:

- Achieving safety and health excellence in the use of any of the works ESP tools e.g. housekeeping, personal protective equipment, safety-training etc.
- Evidence of effective joint management of safety and health as an ongoing process.
- A work environment that fosters union/management participation and employee involvement.

The ESP Best Practice Award sets the leadership standard of excellence and models the way to achieve our vision to be the premier steel company. The Corporate Safety, Health and Environmental Council will review and approve award selections. The President and Chief Operating Officer recognise winners at an awards ceremony.

Information about the award and what the award recipients did to receive the award are publicised throughout the Corporation. Other facilities are encouraged to send representatives to the site to obtain additional information needed to implement similar practices at their facilities. Examples of awards are:

- Housekeeping at a cold mill and galvanizing operation.
- Achieving a shared vision among all employees to be the best in safety at a coke oven operation.

A "brother's keeper" recognition process set up by a joint union and management committee whereby individuals are nominated for an award by co-workers for their significant contribution to workplace and community safety.

13 Safety Talks

Description

A communication forum where a safety consultant/specialist sensitise employees.

Purpose

- Remind/stimulate employees on a continuous basis regarding their own safekeeping.
- Ensure that the statutory obligations of managers and employees are identified, communicated and complied with.
- Maintain continuity of the safety programme.
- Increase employees' level of motivation.

Criteria

- Presenter should be able to influence people with his/her presentation.
- Contents of the presentation must be fit for the purposes e.g. evaluate target group.
- Venue and time of presentation is of utmost importance.
- Message should be short and powerful.
- Evaluate places of work, processes and performance.
- Make use of visual aids e.g. transparencies, photographs and physical examples.
- Offer professional advice.
- Stay abreast of the latest information in specialised fields.

14 Intranet

Description

An internal forum for communication via computer.

Purpose

- Broaden the channels for communication.
- Speed up communication with reference to feedback
- Provide a one stop information system e.g.:
  - Applicable legislation.
  - Work standards.
  - Training manuals.
  - Statistics.
  - Outcome of incident investigations (lessons to be learned etc.).

Criteria

- Create a website.
- Manage information to ensure quality and to add value in achieving the vision and mission.

15 Industrial Theatre

Description

A forum for communication by means of theatre (role-play) in an industrial environment with a specific message e.g. safety is your own responsibility.

Purpose

- Visually communicate in a common language with employees on shop-floor level.
- Enable employees to identify with the message conveyed.

Criteria

- Budget generously.
- Make use of professional actors.
- Ensure that the message that needs to be conveyed addresses the set objectives.
- Address the following logistics:
  - Date and times.
  - Venue.
  - Number of employees to attend.
  - Refreshments.
  - Transportation.
  - Sound, lighting, etc.
- Launch an advertising campaign e.g. posters, flyers, newsletters, radio etc.
- Use repetition of scenes and characters to convey the message even further e.g.:
  - Training courses.
  - Posters.
  - Competitions.
  - Safety chats.
  - Safety quiz etc.
- Monitor, evaluate and analyse the success of the theatre.
- Introduce a follow-up theatre.

16 Patrol by Top Management

Description

Top managers try to spend as much time as possible walking about through their area of responsibility e.g. audits, inspections, talking to the employees etc.

Top management consists of:

- Top management of the works.
- The managers from head office.
- The company's CEO, president, vice president, and Board members.

Purpose

- Show the employees that top management cares for the wellbeing of its workers.

- Keep top management in touch with the reality of workshop/plant conditions as well as the attitude of its workforce.
- Create mutual respect between managers and workers.
- Encourage the workers to arrange their workplace as such, to receive the patrol in a perfect condition.

Criteria

- Plant visit by top management must be planned and known to all the workers concerned.
- Safety plant visits must focus on the purpose and not on the maintenance or production aspect.
- Offer guidance and advice on strategic and tactical levels.
- Understand employees' personal needs and motives (empathy).
- Feedback regarding the findings or perceptions by top management must be given to the workers as soon as possible by applying the feedback, awards/rewards principles.

Example

Patrol by top management of the works

All top management of the works patrol the plants once a month on the settled safety day; they present the result of the patrol in the subsequent central safety and health committee of the works, organized by the works' top management, department general managers, plant managers and the representatives of labour unions and subcontractors.

Patrol by top management in head office

President visits some plants of each works once year. He conducts a meeting after his safety patrol, giving a speech of his impression of the visited plants and his safety policy. The audience is comprised of works' top management down to the level of supervisors, including the representatives of labour unions and subcontractors. His speech is also printed and distributed to all sections and plants in the works.

The Board member responsible for safety and health visits a few plants of each works twice a year, after which he has a meeting with the works' top management and all managers where he talks about his impression of his patrol and exchanges opinions about safety.

17 Coach/Coaching

Description

An informal way of one-on-one, on the job guidance.

Purpose

- Rectify unsafe actions by demonstration of the correct, safe actions/procedures.
- Enhance competency.
- Minimise incidents.

Criteria

- Give on the job (immediate) feedback.
- The coach must be a specialist and not a training/safety officer.
- Coaches should be appointed.
- Guidance and advice are needs-driven.
- Guidance and advice are in line with safety manuals.
- Understand other people's personal needs and motives.
- Predict the risk incurred by a specific action.
- Coaching is not a paper-driven exercise.
- Monitor, evaluate and analyse implemented actions.

Note: coaches act like team leaders (not supervisors)

18 Performance Display

Description

A visual method of communication and feedback.

Purpose

- Brag about results achieved and highlight the positive.
- Build the company image.
- Influence people (employees and visitors).
- Motivate employees to set challenging targets.

Criteria

- Updated information should be displayed.
- Facilities and aids are used effectively, efficiently and comply with standards.
- The display should be visually acceptable and eye-catching.
- The information must tell a story (make sense).
- Integrate information meaningfully.
- The information must emphasise the commitment of all involved.

19 Safety Pledge

Description

An undertaking by individuals to show their commitment to safety.

Purpose

- Get involvement and commitment.
- Stress the seriousness of the matter.

Criteria

- The pledge must be of high quality.
- Content must address personal commitment.
- Pledge must be easy to display.
- Pledge must be signed by the individual

20 Grumble Box

Description

Shortcut communication between employees and management.

Purpose

- Create direct communication for employees to top management.
- Keep top management in touch with perceptions on floor level.
- Answer critical questions on events.

Criteria

- Top management should give feedback in person or through:
  - Newsletters.
  - Flyers.
  - Radio.
- It is a paper-driven exercise.
- Enough grumble boxes must be easily reachable and available.
- Boxes must be emptied daily.
- All letters/complaints should be attended to immediately.

21 Hotline

Description

A telecom for employees (anonymously if desired) to report any safety matter.

Purpose

- Prevent important matters not being attended to.
- Give employees a shortcut communication channel.
- Keep in touch with perceptions on floor level.

Criteria

- Market/broadcast the facility/number and its purpose.
- Feedback should be given in writing or by telephone.
- All concerns must be attended to daily.
- The system must provide for the follow-up of corrective actions.
- Employees should have the choice to stay anonymous.
- The hotline should be answered on a 24 hour basis (in person or electronically).
- The hotline number must be ear/eye catching (easy to remember).
- Apply award/reward principles.

22 Critical Process Sheets

Description

Additional written procedure on high-risk tasks.

Purpose

- Prevent fatalities and serious injury while performing high-risk tasks.
- Comply with legislation.

Criteria

- HIRA to identify high-risk tasks.
- Draw up critical process sheets to address identified tasks.
- Comply with pertinent regulations (legislation).
- Evaluate against standard work procedures and practical feasibility.
- It must be integrated into the quality assurance system.
- Train and declare employees competent in the execution of high-risk tasks.
- Update/revise the critical process sheets continuously.

23 Consultants

Description

A consultant is an external person assisting the internal organisation for the execution of special tasks needing professional care. Concerning safety, these special tasks can be e.g., an audit, a risk analysis, training and delivery of programmes concerning attitude surveys and behaviour studies.

The decision to use a consultant can be the result of a lack of internal knowledge or a lack of sufficient human resources. In some cases, it can be useful to use a consultant just because of his/her reputation, e.g., to start a new safety policy a consultant with a high reliability may be very helpful. It also means a clear signal towards a new safety culture.

Purpose

- To assist with a specific task.
- To obtain a shock effect.
- To utilise the credibility of consultants.
- To use the expertise, objectivity and independence of the consultants.

Criteria

The three most important issues related to consultants are the following:

- Their use must be restricted to their field of expertise or speciality.
- They must be managed rigorously: this means specifying milestones, deliverables and time-frames up front and keeping them to it.
- Not allowing projects to "mushroom" - consultants invariably find or create more and more work for themselves and if allowed to, some will extend projects indefinitely.

24 Policy Cards/Toolkit Cards

Description

A safety card is a laminated pocket card used as a permanent reminder of a certain safety subject. It is a way to communicate an important message.

Purpose

Different topics can be distinguished:

- Policy cards used to raise the profile amongst all employees and contractors.
- Toolkit cards containing a list of methods and initiatives which have been proven to assist the process of continuous improvement for a given area or activity.
- Functional testing card. Describes the language, commands and sequences team members should use when involved in functional testing of live equipment.
- Contractor Employee Health and Safety "best practice" toolkit describing initiatives and systems to be adopted before the contract is started, during the contract, and after completion.

Criteria:

- Identify areas of use.
- Compile text for card.
- Design card.
- Have card printed.
- Distribute as training material.
- Encourage use as 'aide-memoir'.

25 Safety Chats

Description

A regular team meeting to discuss safety-related topics.

Purpose

- To create an opportunity for training, information exchange and participation.
- To create safety awareness/mentality.
- Forum for discussion.

Criteria

- Time must be set aside for this purpose.
- A suitable meeting place must be available.
- A structured programme must be prepared to ensure meaningful discussion.
- Suggestions must be recorded and rigorously followed up.
- Managers must attend!.

26 Simulated Demonstration of an Accident

Description

A step-by-step demonstration of an accident which happened in the workplace.

Purpose

- To create a learning experience.
- To highlight the consequences of undesired behaviour.
- To convey information.
- To obtain participation.

Criteria

- Ensure relevance of accident to attendees.
- Must be anonymous.
- Quality of demonstration must be high.
- Should be conducted within a reasonable time after the actual accident.
- Try to select an accident with multiple causes.
- Manager should attend.

Example

Special facilities are constructed for executing the demonstration. The demonstration is held in the works or by each department. Its content is as follows:

1. Simulation by using models:
    - Electrification.
    - Falling down from a high place and the effect of a safety belt.
    - Hand trapped by inrunning nip.

2. Simulated experience:
    - Going up steps of different pitch.
    - Slipping under different floor qualities and conditions.

27 Special Campaigns

Description

A campaign represents a deliberate and well published initiative either singly or in a series when a particular topic or theme is emphasised. Topics are often tackled for short periods and such campaigns can raise awareness sharply. To support these campaigns all available communication sources must be used to reach the target group (employees, contractors, and visitors).

In some plants, these campaigns are organised in the "weak" periods when the possibility of accident occurrence is high such as the year-end and New Year's times or during the summer period.

Purpose

- To give special attention to an identified issue.
- To create an awareness of the details of the issue.
- To create a vehicle for resources to address aspects of the issue.

Criteria

- Plan the campaign carefully to maximise the use of resources.
- Do not over-use campaigns: a new campaign every week will have limited results.
- Get involvement and commitment from everyone.
- Publicity and information is important - use all communication tools.
- A logo/symbol for the campaign should be used.

Example

Road Safety Campaign involving management and workforce in examining transport systems. Proposals invited from the workforce and their families with prizes and publicity. External consultant used to design series of posters.

28 Performance Appraisals

Description

Integrate safety compliance into the performance appraisals of all persons.

Purpose

- To convey the importance of safety as a critical job requirement for all.
- To promote safety awareness.
- To influence behaviour.

Criteria

- Incorporate into job descriptions.
- Make sure it is consistent and credible.
- Ensure that persons receive the necessary training and support.

29 League Tables

Description

A means of visually comparing the performance of a team, department, works or contractor company with other teams etc. and against a standard or target. Not suitable for individual performance comparison or over too short time-scale. Must be kept up to date and self-explanatory.

Purpose

- To inform persons regarding safety results.
- To stimulate competition between teams / departments/ divisions.
- To emphasise the importance of certain safety aspects.

Criteria

- Decide on what to measure and report on.
- Establish a data collection and information system.
- Establish and disseminate results.

Safety Checklist

The main report concentrates on the development of motivational and behavioural influences on the Impact of safety performance together with cultural change and organisational arrangements. However, it is also clear that in addition significant attention needs to be given to the state of the workplace environment and measures which can be adopted to improve standards in that particular respect.

The following checklist, whilst not exhaustive, may assist in determining your current position in that field. Do you cover the following items in your present occupational health and safety programmes?

1. Consideration at the design stage of potential hazards with a view to their elimination if possible or at least their control at that stage.
2. Similar consideration when plant modifications or operational changes are being considered.
3. Identification of potential hazards from existing machinery, plant, processes and substances.
4. Evaluation of the risk associated with specific identified hazards e.g. by hazard analysis.
5. Establishment of physical protection e.g. machinery guarding, safe means of access and egress, safe working places.
6. Development of safe systems of work e.g. permit to work systems, detailed working procedures.
7. Provision of personal protective equipment e.g. eye protection, foot protection, hand protection, body protection, respiratory protection, hearing protection.
8. Controls over external purchases and sales e.g. provision of data sheets.
9. Engineering controls of processes e.g. by local exhaust ventilation.
10. Occupational environmental monitoring e.g. static and personal sampling.
11. Health monitoring e.g. medical screening, biological effect monitoring.
12. Fire prevention programmes e.g. to prevent ignition and spread of fire.
13. Provision of fire fighting equipment e.g. sprinklers, fire extinguishers, hoses.
14. Procedures for accident or near miss investigation including follow-up.
15. Auditing procedures.
16. Major incident procedures.
17. Education and training programmes.
18. Information dissemination.

Annex D: Membership of the Working Group

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Production co-ordinated by IISI Communications department
designed by cairnes london
Printed in Belgium